

# Program Operations Guidelines for STD Prevention



Community and  
Individual Behavior  
Change Interventions

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# Foreword

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The development of the Comprehensive STD Prevention Systems (CSPS) program announcement marked a major milestone in the efforts of CDC to implement the recommendations of the Institute of Medicine report, *The Hidden Epidemic, Confronting Sexually Transmitted Diseases, 1997*. With the publication of these STD Program Operations Guidelines, CDC is providing STD programs with the guidance to further develop the essential functions of the CSPS. Each chapter of the guidelines corresponds to an essential function of the CSPS announcement. This chapter on community and individual behavior change interventions is one of nine.

With many STDs, such as syphilis, on a downward trend, now is the time to employ new strategies and new ways of looking at STD control. Included in these guidelines are chapters that cover areas new to many STD programs, such as community and individual behavior change, and new initiatives, such as syphilis elimination. Each STD program should use these Program Operations Guidelines when deciding where to place priorities and resources. It is our hope that these guidelines will be widely distributed and used by STD programs across the country in the future planning and management of their prevention efforts.

Judith N. Wasserheit  
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# Introduction

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**T**hese guidelines for STD prevention program operations are based on the essential functions contained in the Comprehensive STD Prevention Systems (CSPS) program announcement. The guidelines are divided into chapters that follow the eight major CSPS sections: Leadership and Program Management, Evaluation, Training and Professional Development, Surveillance and Data Management, Partner Services, Medical and Laboratory Services, Community and Individual Behavior Change, Outbreak Response, and Areas of Special Emphasis. Areas of special emphasis include corrections, adolescents, managed care, STD/HIV interaction, syphilis elimination, and other high-risk populations.

The target audience for these guidelines is public health personnel and other persons involved in managing STD prevention programs. The purpose of these guidelines is to further STD prevention by providing a resource to assist in the design, implementation, and evaluation of STD prevention and control programs.

The guidelines were developed by a workgroup of 18 members from program operations, research, surveillance and data management, training, and evaluation. Members included CDC headquarters and field staff, as well as non-CDC employees in State STD Programs and university settings.

For each chapter, subgroups were formed and assigned the task of developing a chapter, using evidence-based information, when available. Each subgroup was comprised of members of the workgroup plus subject matter experts in a particular field. All subgroups used causal pathways to help determine key questions for literature searches. Literature searches were conducted on key questions for each chapter. Many of the searches found little evidence-based information on particular

topics. The chapter containing the most evidence-based guidance is on partner services. In future versions of this guidance, evidence-based information will be expanded. Recommendations are included in each chapter. Because programs are unique, diverse, and locally driven, recommendations are guidelines for operation rather than standards or options.

In developing these guidelines the workgroup followed the CDC publication “CDC Guidelines—Improving the Quality”, published in September, 1996. The intent in writing the guidelines was to address appropriate issues such as the relevance of the health problem, the magnitude of the problem, the nature of the intervention, the guideline development methods, the strength of the evidence, the cost effectiveness, implementation issues, evaluation issues, and recommendations.

STD prevention programs exist in highly diverse, complex, and dynamic social and health service settings. There are significant differences in availability of resources and range and extent of services among different project areas. These differences include the level of various STDs and health conditions in communities, the level of preventive health services available, and the amount of financial resources available to provide STD services. Therefore, these guidelines should be adapted to local area needs. We have given broad, general recommendations that can be used by all program areas. However, each must be used in conjunction with local area needs and expectations. All STD programs should establish priorities, examine options, calculate resources, evaluate the demographic distribution of the diseases to be prevented and controlled, and adopt appropriate strategies. The success of the program will depend directly upon how well

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program personnel carry out specific day to day responsibilities in implementing these strategies to interrupt disease transmission and minimize long term adverse health effects of STDs.

In this document we use a variety of terms familiar to STD readers. For purposes of simplification, we will use the word patient when referring to either patients or clients. Because some STD programs are combined with HIV programs and others are separate, we will use the term STD prevention program when referring to either STD programs or combined STD/HIV programs.

These guidelines, based on the CSPS program announcement, cover many topics new to program operations. Please note, however, that these guidelines replace all or parts of the following documents:

- Guidelines for STD Control Program Operations, 1985.
- Quality Assurance Guidelines for Managing the Performance of DIS in STD Control, 1985.
- Guidelines for STD Education, 1985.
- STD Clinical Practice Guidelines, Part 1, 1991.

The following websites may be useful:

- CDC [www.cdc.gov](http://www.cdc.gov)
- NCHSTP [www.cdc.gov/nchstp/od/nchstp.html](http://www.cdc.gov/nchstp/od/nchstp.html)
- DSTDP [www.cdc.gov/nchstp/dstd/dstdp.html](http://www.cdc.gov/nchstp/dstd/dstdp.html)
- OSHA [www.osha.gov](http://www.osha.gov)
- Surveillance in a Suitcase [www.cdc.gov/epo/surveillancein/](http://www.cdc.gov/epo/surveillancein/)
- Test Complexity Database [www.phppo.cdc.gov/dls/clia/testcat.asp](http://www.phppo.cdc.gov/dls/clia/testcat.asp)
- Sample Purchasing Specifications [www.gwu.edu/~chsrp/](http://www.gwu.edu/~chsrp/)
- STD Memoranda of Understanding [www.gwumc.edu/chpr/mcph/moustd.pdf](http://www.gwumc.edu/chpr/mcph/moustd.pdf)
- National Plan to Eliminate Syphilis [www.cdc.gov/Stopsyphilis/](http://www.cdc.gov/Stopsyphilis/)
- Network Mapping [www.heinz.cmu.edu/project/INSNA/soft\\_inf.html](http://www.heinz.cmu.edu/project/INSNA/soft_inf.html)
- Domestic Violence [www.ojp.usdoj.gov/vawo/](http://www.ojp.usdoj.gov/vawo/)
- Prevention Training Centers [www.stdhivpreventiontraining.org](http://www.stdhivpreventiontraining.org)
- Regional Title X Training Centers [www.famplan.org](http://www.famplan.org)
- HEDIS [www.cicattelli.org](http://www.cicattelli.org)
- Put Prevention Into Practice [www.jba-cht.com](http://www.jba-cht.com)
- [www.cdc.gov/nchstp/dstd/hedis.htm](http://www.cdc.gov/nchstp/dstd/hedis.htm)
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# Community and Individual Behavior Change Interventions

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## INTRODUCTION

Historically, STD prevention programs have been based on a biomedical model that focused on secondary prevention by treating infected individuals. More recently, STD prevention programs have been encouraged to support more interventions that effect changes in behavior. Many behavioral interventions proven to change behaviors that pose risks to health, including sexual behavior, are highly effective. An advantage of behavioral interventions is that they are capable of preventing all STDs, while biomedical interventions are specific only for certain STDs. If behavioral interventions could be widely implemented along with biomedical approaches, they are likely to have a substantial effect on the prevention of STDs (IOM, 1997).

This chapter presents a menu of options for program managers who are seeking ways to implement community and individual behavior change interventions. These options should be tailored to the individual program based on an analysis of local risk issues. Program managers should build partnerships with behavioral scientists to accomplish this task.

The Institute of Medicine's report, "The Hidden Epidemic: Confronting Sexually Transmitted Diseases" indicates that there is little information related to behavior change interventions and STDs. (IOM, 1997) An NIH consensus panel recommended that "intervention and behavioral research be given the highest priority and coordinated with biomedical research; a paradigm shift to develop models that are domain-specific with regard to sexuality and recognition that risk behavior is embedded within personal, interpersonal, and situational contexts; research on individual

differences in human sexuality that takes into account cognitive, affective, cultural, and neurophysiological variables; studies on the direct effects of intoxicants on self-regulatory mechanisms; and studies regarding maintenance of behavior change" (NIH, 1997).

In addition, the Institute of Medicine report identified a number of STD interventions that could be accurately evaluated if psychosocial and behavioral data were available:

- reduce individual risk behaviors in populations with high prevalence of STDs;
- promote safer sex practices and such protective methods as condom use to reduce the likelihood of the acquisition of an STD;
- inform the public, especially adolescents and young adults, to be aware of and to recognize symptoms of STDs;
- motivate prompt attempts to get medical treatment for symptoms and suspected exposure to STDs or if engaged in risky behavior, to get tested; and
- ensure access to medical care for those with STDs.

The last three activities are limited by the absence of any currently available comprehensive data collection system for STD that would enable assessment or tracking of attitudes or knowledge, behaviors that produce or mitigate STD acquisition, or factors related to seeking health care and access to treatment.

Existing data and surveillance systems (e.g., Behavioral Risk Factor Surveillance System, Youth Risk Behavioral Surveillance System, National Health Interview Survey, National Health and Nutrition Examination Survey, National Survey of Family Growth, National Household Survey of Drug Abuse, General

Social Survey) are currently inadequate for a behavioral surveillance system for sexually transmitted diseases. These surveys would require major revision of questionnaires to accommodate STD related question domains, e.g. sex partner characteristics, symptom recognition, decisions concerning medical treatment, and major sampling design revisions to obtain information for monitoring high-risk populations.

There also is a need for information at the community level for monitoring risk behaviors in local populations, planning and measuring community awareness of prevention activities, assessing access to medical care and other related issues, and providing baseline information for evaluating unanticipated secular changes in the community.

Once a target population is identified, it is important to determine the type of intervention to be implemented. The three primary goals of individual- and community-focused interventions are to prevent exposure to STDs; to prevent the acquisition of disease if exposed; and to prevent transmission of infection to others if infected. Comprehensive public health efforts for behavior change should be in place that (1) help individuals develop and maintain STD prevention behaviors (both safe sexual behaviors and timely seeking of treatment), and (2) enable communities to support STD prevention efforts (IOM, 1997).

While there have not been rigorous assessments of many behavioral interventions for STDs, there is reason to believe that they could have a substantial effect on the risk of acquiring and spreading STDs if there were the resources and the national will to implement some of these programs more widely (IOM, 1997). The literature on the effectiveness of HIV prevention programs is applicable for developing other effective STD prevention programs. Based on the National Institutes of Health Consensus Development Conference Statement “Interventions to Prevention HIV Risk Behaviors”, the following conclusions were drawn (NIH, 1997): Behavioral interventions to reduce risk are effective and should be implemented widely; legislative barriers that discourage effective programs aimed at youth, corrections, and IVDUs must be eliminated; and, although sexual abstinence is a desirable objective, programs must include instruction on safer sex behaviors.

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## Recommendations

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- STD prevention programs should develop and maintain the capacity to implement community and individual behavior change interventions.
  - STD prevention programs should develop and utilize a behavioral data system to help determine the choice of intervention to be implemented and to evaluate intervention effectiveness after implementation.
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STD program managers can accomplish this by developing working partnerships with the behavioral science staff at local universities, STD prevention training centers, AIDS education training centers, or other similar institutions to obtain proper input and guidance for developing, implementing, and evaluating behavioral science interventions. In lieu of this approach, behavioral scientists could be hired to be members of the STD prevention program.

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## Recommendation

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- STD prevention programs should partner with local behavioral intervention experts or STD prevention training centers.
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## IDENTIFICATION OF BEHAVIORS & CONTEXTS THAT PLACE INDIVIDUALS AND COMMUNITIES AT RISK

### Community Needs Assessment

The Community Identification process (CID) was developed in 1989 by LTG Associates in collaboration with DSTD and HIV. This process used qualitative and ethnographic methods to gain information about values, beliefs, lifestyles, needs, and facilitators and barriers to health care services from the perspectives of target populations and from the perspectives of those persons who have substantial contact with the target populations. The process used semi-structured interviews with members of the target populations, their gatekeepers, relevant interactors, and formal service providers.

The 1995 “Innovations in Syphilis Prevention in the United States: Reconsidering the Epidemiology and Involving Communities” projects (ISP) adapted the CID process in five communities in the southern United States, using the same methods and processes as the CID. These projects were aimed at improving partnerships with communities affected by syphilis, as well as with other health and social service providers. They also sought to identify social and behavioral factors associated with syphilis transmission and treatment.

The Rapid Ethnographic Community Assessment Process (RECAP) was developed out of the ISP initiative. Initially, a modified version of the ISP was conducted in Guilford County, North Carolina in 1998. The goals of the assessment were to determine points of access for persons at behavioral risk for syphilis, ascertain culturally appropriate and acceptable syphilis prevention messages and strategies, and to tailor outreach and syphilis screening efforts. This process was further refined in 1999 and became known as RECAP.

The decision to undertake RECAP demands sustained support before, during, and after the assessment is launched. If programs have questions about RECAP or need assistance in deciding if it is appropriate for their area, they can call the Division of STD Prevention at CDC. It is essential that the local program take and lead the initiative. The site should discuss with their CDC program consultant and local partners why RECAP makes sense in their area and how RECAP will facilitate later interventions. Potential RECAP sites should identify local staff from the health department as well as community based organizations and other community groups that will participate in RECAP. The site must also be willing to commit sufficient resources such as staff, supplies, and office space to RECAP.

Once a site has been selected, a pre-assessment meeting is held in the area. Some topics that should be discussed at this meeting include:

- How does RECAP fit into the project area’s objective?
- In what areas will RECAP take place?
- What local staff will participate in the assessment?
- What local resources will the project area commit for RECAP?

- How will the survey instruments need to be modified to meet local needs?

Data analysis and the writing of the final report should be done by those with appropriate expertise. Such expertise is available at CDC, local universities, and PTCs. Once data analysis has been completed and a draft copy of the written report is available, a meeting is established between STD program staff, those involved in the analysis, and partners to present and discuss the report. This meeting should include as many key players as possible. The objective of this meeting is to orally present the report and to discuss post-RECAP recommendations. The written report is finalized one to two weeks after this meeting and includes recommendations and discussions from the meeting.

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#### Recommendation

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- STD prevention programs should consider using RECAP in the STD program to help determine prevention strategies.
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#### Behaviors That Influence Risk

Researchers have conducted surveys to assess the prevalence of behaviors in various populations. National probability surveys also have been conducted, providing periodic snapshots of risk in the general population (NIH, 1997).

Research to date identified the key risk behaviors as unprotected anal and vaginal intercourse in HIV transmission, with oral-genital sexual contact considered somewhat less risky. Although there are some documented cases of transmission through oral-genital sexual contact, methodological issues make it difficult to precisely determine the primary route of transmission. At present, oral-genital sexual contact is considered somewhat less risky than anal or vaginal intercourse for transmission of HIV. For other STDs the degree of risk is not well established and may vary by STD. Other factors are important as well because they impact the probability of exposure, facilitate transmission, or provide a context that may act as a trigger for risk (or protective) behaviors. Examples of such factors include multiple sex partners, early initiation of sexual behavior, and the excessive use of alcohol and

substances that impair judgement (NIH, 1997). Other factors may include partners with multiple partners or sex for money.

It is important for program planners to have a better understanding of the risk behaviors of the populations they serve before developing and implementing intervention programs. For example, youth in school are reporting an increase in condom use at last sexual contact, but they report a trend for decreased condom use as they get older. Women, particularly women of color, have recently increased drastically as a risk group in the United States. Much of the growth in their risk is caused by sexual contact with partners whose sexual or drug use behavior puts the women at risk (NIH, 1997). In both instances, risk reduction efforts should include strategies for addressing gender, age, and relationship issues.

Quantitative and qualitative assessments can assist in determining the scope of risk behaviors and other factors that influence risk. An assessment (qualitative or quantitative) can also be used to determine the need for developing and implementing an intervention.

### Factors That Influence Risk

A program planner should consider the risk behaviors as well as the context in which that behavior occurs. Factors influencing behavior are more numerous and more difficult to measure than biomedical factors. Four categories of factors that influence STD risk are behavioral, demographic, psychosocial, and contextual. Behavioral factors are specific actions that increase risk such as sex without condoms, sex with multiple partners, or substance use. Demographic factors are those that enable you to describe individual characteristics such as age, sex, ethnicity, marital/relationship status, education, or income. Psychosocial factors are those that assist in the understanding of why individuals may engage in risk behavior. Some examples of psychosocial factors include self esteem, self efficacy, perceptions of personal risk, future orientation, or hopelessness. Contextual factors, the broadest and probably the hardest to impact, are those that are considered characteristics of the situation(s) in which risk behaviors may occur. Specific types of contextual factors include interpersonal factors such as sex with part-

ners of unknown status, safer sex negotiation, or domestic violence; sociocultural factors such as social norms, religious beliefs, gender role norms, or marginalization; as well as political, economic, health policy, and legal factors such as unemployment, poverty, sexism, racism, homophobia, and the availability of basic public health care tools for protective behaviors.

### The Contexts of Risk

Although behavioral, demographic, and psychosocial factors are often used in prevention research and programing, the scope, and utility of contextual factors as a means of understanding and impacting risk behaviors is a more recent phenomenon. The work on safer sex negotiation is an example of how interpersonal and sociocultural contextual factors can impact sexual risk behavior. Specifically, researchers have found that initiation of safer sex negotiation within heterosexual relationships is more difficult (or almost impossible) when a relationship is already established or when the partners are from sociocultures where women are disempowered (Wingood, 1993). However, in some cultures, such as the gay male community, safer sex is incorporated into the social norm, thus making the negotiation of safer sexual behaviors a less threatening process. An example of how economic or health policy contextual factors can influence STD risk, are the effects of poverty and the lack of universal health care on health care seeking behavior. In essence, people who are impoverished or who do not have access to adequate health care are less likely to seek preventive health services or treatment (Lynch, 1997).

One important contextual factor that agencies should always consider is the prevalence of disease in the local area or in populations that are at significant risk. Combined usage of behavioral, demographic, psychosocial, and contextual factors will enable managers to generate ideas as to how to describe, understand, and intervene on risk behaviors that lead to STDs on an individual and community level. However, the prevalence of disease in the local areas may play a larger role in the focus, scope, and intensity of primary or secondary prevention efforts.

## THEORETICAL MODEL FOR BEHAVIORAL INTERVENTIONS

The rate of spread of a communicable disease in a community is determined by three factors: (1) the rate of exposure of susceptible persons to infected persons; (2) the probability that an exposed, susceptible person will acquire the infection; and (3) the length of time that newly infected persons remain infectious (Anderson, 1988). To produce change in these parameters, theory-based interventions can be used to influence the rate of disease transmission. For example, transmissibility can be decreased by correct and consistent condom usage, by delaying the initiation of sexual activity, or by promoting increased usage of vaccines against STDs (e.g., hepatitis B). Duration of infectiousness can be reduced by promoting rapid health care seeking when symptoms are noticed or by screening asymptomatic populations. The interaction rate can be decreased by decreasing the rate of acquiring new partners or by maintaining mutual monogamy.

The program manager should routinely determine the distribution of available resources among the interventions which impact these three factors affecting transmission of disease. The program manager should determine if the resources that are available are appropriately used and if not, how they can be linked to other services and interventions.

Although it can be argued that every behavior has its own set of unique determinants, there is a consensus that a limited number of variables need to be considered to predict and understand any given behavior. (1) The person has a strong intention; (2) he or she has the skills and abilities required to perform the behavior; and (3) there are no environmental constraints to prevent the performance of the behavior. One implication for developing behavioral interventions is that very different types of interventions will be necessary depending on which of these variables reduces the likelihood a given behavior will be performed. The relative importance of these variables as determinants of intention and behavior depends on both the behavior and the population under consideration. Therefore, it is important to identify those factors that most strongly influence a given behavior in a given population and then to use that information to design and implement

interventions (NIH, 1997). Models of behavior change that have formed the basis of much of the current STD/HIV intervention research include social-cognitive theory and the information-motivation-behavior skills model. These models incorporate similar principles of accurate information, motivation, and behavior skills training. The principles of these behavioral theories have proven effective in changing high risk behavior for STD/HIV.

## PREVENTION INTERVENTION PLANNING

### Health Communications Planning

Program managers should develop a health communications plan to establish the steps to be taken to address program goals and objectives. In developing such a plan, the following steps should be taken:

- Among the program objectives, identify which might benefit from health communications. Based on these chosen program objectives, determine the health communication objectives. Note that all program objectives will not necessarily benefit from health communication strategies. It might be useful to think about these from the perspective of what a health department is best positioned to do, which would probably mean setting population-level rather than individual-level behavior change health communication objectives. For example, an appropriate objective might be to raise the level of awareness of the significance of the STD problem in an area among community leaders. A less appropriate objective might be to increase condom use by adolescents because informational approaches alone are less likely to be successful in achieving this goal.
- Identify the target audience for communication objectives. This step will probably take place most naturally in conjunction with the first step. While there may be more than one potential target audience, it may be important to prioritize audiences. (Examples of target audiences: policymakers, community leaders, non-STD public health leaders, non-governmental organizations that serve at-risk populations, etc.)

- Identify strategies that will correspond to the communications objectives and reach the target audience. Example of a strategy: Influence key community leaders who have not paid attention to STDs to recognize why Medicaid managed care contracts must support STD prevention.
- Conduct a needs assessment. Determine which of these strategies are currently being addressed, what gaps there are in current efforts, and strategies that are not being addressed.
- Based on gaps, define key health communication strategies.
- Choose tools to carry out these strategies (see “Type of Interventions”)
- Establish a system for evaluating the effect of health communications in meeting the defined objectives.

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### Recommendation

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- Program managers should develop an appropriate plan for health communications interventions.
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### Behavioral Surveillance Data Monitoring

Collecting and analyzing behavioral surveillance data are necessary for developing effective interventions to prevent high-risk behaviors and to reduce neglect of or delay in treatment. STD behavioral surveillance will enable programs to anticipate emerging disease and to prevent disease occurrence. This could result in a level of undetectable prevalence of STDs many years sooner than if such a system were not in place, saving billions of dollars.

A behavioral surveillance network should be specifically designed to 1) estimate the size of populations at risk for sexually transmitted diseases; 2) monitor knowledge and attitudes about STDs and sexuality; 3) monitor recognition of symptoms and of the need for medical care; 4) monitor indicators of exposure to intervention; 5) monitor the patterns and prevalence of risk behaviors; 6) link behavioral and biomedical indicators of disease that will clarify the complex social and sexual networks underlying the STD epidemic;

and 7) evaluate intervention and program effectiveness. Local areas must be able to incorporate local community values into the design of behavioral surveillance systems. In that respect, it becomes community-based surveillance, by which community is defined as an area or jurisdiction for which prevention planning is feasible.

Population-based surveys obtain information about the size of groups at risk for sexually transmitted diseases; rates of risk behaviors and prevention behaviors; level of awareness, knowledge, and misinformation about sexually transmitted diseases; social norms and structural factors related to behavioral risks for STDs; and decisions and actions about medical care and treatment. Population-based surveys strive to use sampling approaches for inclusion of hard-to-reach and vulnerable populations at special risk for STDs. Inclusion of specific “traditional” provider sites, such as public STD clinics, family planning clinics, and individual providers is important as are other non-traditional sites such as jails, detention centers, drug treatment facilities, schools, halfway houses, and other identifiable venues for monitoring behavior and disease in high-risk populations. Surveys of populations at the community level (e.g., high risk neighborhoods) is also of value but more resource intensive. This type of survey is capable of obtaining information from everyone in the community rather than only those who have accessed care or services at one of the above venues and this is more representative if the participation rate is high.

Community-based surveillance should focus on 1) local population and health service characteristics, 2) population-level health surveys, and 3) sentinel site surveillance monitoring. For instance, community-based surveillance should be able to profile the course of an epidemic by using data on behavior; by monitoring changes in behavior that may be the result of interventions or of media campaigns; by estimating relative coverage of STD diagnosis and treatment by public health clinics and private providers; by determining the extent to which private providers are involved in treatment, partner services, and risk-reduction counseling; and by tracking associations between prevention efforts and risk behaviors. It can also provide communities with an early warning of emerging

risk behaviors. Community-based surveillance uses a mixture of data sources, including surveys (sampling and interviewing respondents), contextual data (e.g., census, labor, crime statistics, health care measures), and should be linked to biomedical indicators of disease (National and Community-Based Behavioral System for STDs, 1997). Community surveillance efforts may wish to consider user-friendly, analysis-friendly techniques such as custom developed scan forms to record data about behaviors.

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### Recommendations

- STD prevention programs should develop behavioral and social surveillance systems appropriate for their communities.
  - STD prevention programs should develop an appropriate plan for designing, implementing, and evaluating behavioral interventions based on local surveillance, demographic, and behavioral data within the community.
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### Outcome Measures

A broad spectrum of sound outcome measures from self-reported behavior to disease incidence is essential in evaluating prevention programs and interventions. Self-reported behavior change can have solid properties (valid and reliable) if rigorous methods are employed. The consequences of prevention interventions and programs can be measured in a variety of ways; the choice of outcome measures should be driven by the type of evidence that is required to answer questions and determine the program's efficacy. The information needs of public health decision-makers who have the ultimate responsibility for managing and allocating resources for effective interventions and programs must also be considered (NIH, 1997).

Most research on the efficacy of prevention interventions has focused on self-reported behavioral outcomes; a small number have utilized STD and HIV infection as outcome measures. The selection of outcome measures depends on a range of issues, including the availability of valid and reliable behavioral assessments that are culture and gender appropriate;

whether sufficient members of the at-risk population can be recruited and maintained in a longitudinal cohort; access to laboratory facilities; and available resources (NIH, 1997). Some examples of sexual behavior outcomes include 1) frequency of vaginal, anal, oral, or manual sex with, as well as without, internal or external condoms, latex gloves, dental dams, or other latex barriers during each sexual act; 2) number of sexual partners with which the person has had any kind of sexual activity; 3) number of sex workers including sex for drugs, money, a place to stay, or other favors; 4) number of sexual activities while using alcohol or illicit drugs; 5) risky behaviors of sex partner including interpersonal coercion or violence, multiple partners, alcohol use or abuse, drug use or abuse, or sex work; 6) frequency of refusals to engage in risky sexual behaviors; and 7) frequency of participation in behaviors such as assisted or mutual masturbation as an alternative sexual behavior when barrier methods were not available or possible to use. These types of outcome variables are also variables that can be part of a behavioral surveillance data system.

Although a minimum data set of behavioral variables has not been determined, it is strongly encouraged that program planners define outcome variables consistent with the interventions proposed. Thus, the information gathered over time can be used to measure the intervention's or program's effectiveness, or it can be used for quality assurance purposes and feedback to make mid-course corrections during the delivery of the intervention (NIH, 1997). Variables should also be incorporated in the behavioral surveillance data system so comparisons between populations can be made and trends evaluated over time in areas with and without targeted interventions and in areas after interventions have been completed.

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### Recommendations

- Program managers must evaluate the outcome of behavioral interventions.
  - Outcome measures should be linked with behavioral surveillance activities.
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## Framework for Planning Interventions (Office of Technology Assessment, 1995)

Paramount to the implementation of an intervention, the program manager should carefully consider the desired outcome of the intervention and should clearly articulate a measurable outcome during the development of the strategy. In addition, for a program manager to develop an appropriate intervention that is successful in the context of a high-risk population, five important questions should be asked: When do you implement an intervention? Who is being targeted? What is the proposed intervention? Where is the intervention being delivered? How is the intervention being delivered? In addition, the program manager also must assess what resources or programs already exist in a community to address some needs of the identified high-risk population. If resources or programs exist, then STD prevention programs should partner with existing programs to plan interventions. If not, then an appropriate intervention should be designed, implemented, and evaluated with the full participation of the community who will be receiving this intervention. The questions follow:

### 1. When do you implement an intervention?

An intervention should be considered when it becomes clear that ongoing risk behaviors are substantially contributing to enhanced disease transmission in a particular environment or sociogeographic context. Timing of the intervention will necessarily depend on morbidity as well as social, economic, and political factors which affect the feasibility of intervention implementation.

### 2. Who is being targeted?

- **Demographic Characteristics:** Describe demographic characteristics of the target group(s), such as age, race, gender, in-school versus out-of-school, homeless, mentally ill, sex workers, inmates, parolees, immigrants.
- **Geographic:** Describe the section or neighborhood of the city where the target group(s) resides or hangs out.
- **General Risk Behaviors and Stage of Behavior Change:** Describe the general risk behaviors of the target group(s) such as sexual behaviors, drug

use behaviors, access to care, and the group's readiness for behavior change. Information collected from behavioral surveillance systems is critical in identifying the target population as noted in the previous section.

### 3. What is the proposed intervention?

- **Level:** Describe whether the intervention will be delivered at the individual, couple, small group, street or community level, or to the general public. Ideally, there should be a comprehensive mix of individual, group, and community level interventions.
- **Behavioral Objectives:** Describe what risk behaviors the intervention expects to change and the direction of this change (e.g, increased use of condoms with casual partners, decrease in the number of partners, etc.)
- **Factors Expected to Affect Risk Behavior(s):** Describe theoretical factors that will need to be addressed to accomplish the behavioral objectives of the intervention, such as addressing the target group's intentions, skills, self-efficacy, supportive community and peer norms, barriers, and expected outcomes.
- **Services, Material, and Information:** Describe the services, materials and other information that will be delivered in the interventions such as testing, case management, peer outreach, skills training, condoms, or informative pamphlets.

### 4. Where is the intervention being delivered?

- **Institutional:** Describe whether the intervention will be delivered in school, corrections facilities, hospital, clinic, physicians office, emergency room, or other institutional setting.
- **Street:** Describe whether the intervention will be delivered in the streets or corner of a street in a high drug use area, a crack house, park areas, or other informal settings where high-risk behaviors are taking place.
- **Community:** Describe whether the intervention will be delivered in a community-based organization, store front, mobile van, bar, or other community setting.



## 5. How is the intervention being delivered?

- **Persons Delivering the Intervention:** Describe whether the intervention will be delivered by peers, community volunteers, clinicians and other health professionals, outreach workers, counselors, or other types of individuals.
- **Visibility of the Target Group:** Describe how the target group(s) for the intervention will learn about its services, such as through various types of media in the community, through formal or informal outreach on the street, or through related agencies.
- **Frequency and Duration:** Describe whether the frequency of the intervention will be one-time only, periodic, seasonal, or continuing, and whether the duration of the intervention will be in hours, days, weeks, and/or years.
- **Scale and Significance:** Describe how many members of the target group(s) will be reached by the intervention and, if possible, whether this size is sufficient to make a measurable contribution influencing morbidity.
- **Contextual Factors:** Describe any contextual factors that will influence how the intervention is delivered, such as the type or level of drug use, gang or domestic violence, the physiologic or mental state of the group, and competing needs for food, shelter, health care, employment, and protection from violence.
- **Extent of Coordination:** Describe the extent of coordination between the intervention and the services of other agencies in the area and what the effect of other prevention interventions or services will be on the implementation of the proposed intervention.

The utility of addressing these key features in advance is important in a number of ways. First, it allows prevention planners to communicate more clearly the types of priority interventions that they are recommending to service providers, and it helps providers to design interventions more clearly and to implement them as planned. Thinking through the details also helps providers apply behavioral and social science research and theory in designing specific interventions. Making decisions about the key features and describ-

ing the program in this way also can be strategically useful if a program intends to seek support or to continue to get support from outside funders and the community. Finally, a systematic description encourages a thorough implementation of the intervention, allows for the replication of the intervention for other groups or communities, and provides a structure to design and carry out process and outcome evaluations. For an example of the planning framework, see Appendix BC-A.

There is compelling evidence to suggest that properly designed mass media campaigns can have beneficial effects on health behaviors (IOM, 1997). The challenge in developing strong prevention messages includes the content of the controversial topics of sexual behavior and drug use, the need for such messages to be specific and sustained, and the resources to develop and sustain such initiatives. These initiatives should also be coupled with and supportive of specific individual, group, and community level interventions in the program area. Mass media messages supporting safer sexual behavior are increasing but not as commonplace as may be necessary. Changes in social norms regarding safer sexual behaviors will be difficult to achieve unless the content of programming in mass media supports such behaviors. Many mass media outlets refuse to allow STD-related public service announcements or condom advertisements despite the support of most Americans (Office of Technology Assessment, 1995). Television has also failed to incorporate safer sex messages into programming where sexual activity is commonplace.

Physicians and other health care providers also are generally seen by the public as reliable sources of prevention information; they could play a major role in delivering prevention counseling but lack information and prevention training about STDs and AIDS. Discomfort in taking sexual history, incorrect assumptions about high risk behaviors, and lack of prevention training in effective counseling methods may deter providers from providing appropriate counseling. Other barriers may include insufficient time for visits, limited or non-existent reimbursement for prevention counseling, lack of access to the provider, or seeing providers in a setting not conducive to providing prevention messages (Office of Technology Assessment, 1995). Another barrier may be the lack of comfort of the pa-

tient to share private sexual or drug use behavior, particularly if such behavior is stigmatized by society or illegal.

## TYPES OF INTERVENTIONS

### Individual-Focused Interventions

Interventions at the individual level help people to change by providing knowledge or by attempting to alter beliefs, attitudes, perceived norms, motivation, skills, or biological states related to high-risk activities. Examples include skills-building workshops, multi-session behavior change groups, and individual counseling (NIH, 1997). These types of interventions usually incorporate the social learning theory and the stages of change model (See Appendix BC-B).

Examples of individual-focused interventions include:

- Outreach, treatment programs, and face-to-face counseling programs for substance-abusing populations.
- Cognitive-behavioral small group, face-to-face counseling, and skills-building programs for women, adolescents, and men who have sex with men (proper condom use, negotiation, refusal) that pay special attention to the concerns of the target group.
- Condom distribution to and testing and treatment of sex workers and other sexually active individuals at high risk (NIH, 1997).

**Project Respect**—Public STD clinic patients who underwent a series of counseling sessions based on the Health Belief Model or Theory of Reasoned Action (Appendix BC-B) were significantly more likely to adopt protective behaviors and were less likely to acquire new STDs at six months of follow-up compared with those who received only informational messages (Kamb, 1996; IOM, 1997).

**Women in Group Support (WINGS)**—Community women at high risk for STD who improved condom use and communication skills through a small group intervention also increased protected sex at three

months of follow-up compared to control women (Greenberg, 2000).

**AIDS Evaluation of Street Outreach Projects (AESOP)**—For injecting drug users and youth in high risk situations, contact with street outreach programs was a consistent predictor of having a condom at post-enhancement interviews, and having a condom at these interviews was a strong predictor of condom use with steady and casual partners (Anderson, 1998).

For adolescents, interventions to reduce risk-associated behavior face several formidable challenges. Adolescents often feel invulnerable and do not perceive themselves to be at risk. It may be difficult to persuade some adolescents to remain abstinent or to use condoms if they are sexually active. Adolescents may hold negative beliefs about safer sex practices, including the belief that condoms adversely affect sexual enjoyment. They may lack the skills to negotiate safer sex. Even if an intervention successfully surmounts those obstacles, it may not have detectable effects on sexual behavior if that behavior is sporadic, which is often true of adolescents (NIH, 1997).

Several well controlled studies documented significant intervention effects on adolescent HIV risk-associated behavior, including condom acquisition, condom use, unprotected sexual intercourse, frequency of sexual intercourse, and number of partners. A specific example of a tested intervention was a study addressing the risk of sexually transmitted HIV infection in 246 low-income African American adolescents at a comprehensive health center (St. Lawrence, 1995). The adolescents were randomly assigned to a single-session HIV education program or an 8-week HIV cognitive-behavioral intervention that combined information with instruction and practice on correct condom use, sexual assertion, refusal, self-management, problem-solving, and risk recognition. (IOM, 1997). Significant post-intervention effects were found on HIV knowledge, response efficacy, and perceived self-efficacy; HIV risk-associated behavior was also affected. The participants reported a reduced number of instances of unprotected intercourse, and the percentage of adolescents who initiated sexual intercourse was significantly lower for those in the 8-week intervention. The effects on behavior were sustained through a 12-month follow-up. This study demonstrated that behavioral skills

were acquired and that the intervention did not encourage sexual intercourse, but delayed it.

### Community-Focused Interventions

Interventions at the group and community levels attempt to modify social norms and to influence social networking, resources and opportunities, and barriers to preventive practices in the community. Community-focused approaches to behavior change address the behavioral risk of individuals in the context of their personal networks and social environment (NIH, 1997). This type of community building can be done through empowerment, capacity building, community organizations, and community mobilization approaches. Provider behavior with clients at risk provides interventions such as risk reduction, condom use, screening exams, and sexual risk factor history.

Social-level approaches include diffusion theory (idea or practice passed from person to person), leadership models (natural leaders within a group can be encouraged to exhibit or communicate innovation to those people they influence), community mobilization (how a culture's institutions, experiences, and characteristics can be changed by social movements initiated by members of that culture), and social network theory (focus on relationships and interactions between two or more people or on the linkages between people in a given group). Examples of change strategies include peer outreach, mass media, and condom social marketing (AED, 1997).

Examples of community-focused interventions include:

- Changing community norms through community outreach and opinion leaders.

A community risk-reduction intervention directed at young homosexual men in two west coast cities was shown to be successful (Kegeles, 1996). In that project, key opinion leaders were identified in each city's population of young homosexual men, and these key leaders delivered HIV prevention endorsement messages to their friends. In addition, risk-reduction workshops, social events that included HIV prevention messages, and printed and graphic HIV information materials were disseminated in venues frequented by young homosexual men in each city (NIH, 1997).

The AIDS Community Demonstration Projects were another community-level HIV intervention program targeting high-risk, hard-to-reach populations in five U.S. cities. Mass media interventions were developed for IDUs recruited off the streets, for female sex partners of male IDUs, for women who trade sex for money and drugs, for men who have sex with men but who do not identify themselves as homosexual, for street youths, and for residents in areas with high rates of STD and injecting drug users. Each intervention site distributed printed HIV prevention materials, condoms, and bleach kits. Findings indicate positive changes in consistent condom use with a main partner and with other partners and consistent condom use for anal intercourse with other partners (IOM, 1997). In a nationwide program in Thailand (Rojanapithayakorn & Hanenberg, 1996), a "100% Condom Program" was implemented. This included a mass media condom-promotion campaign and wide distribution of condoms to prevent the spread of HIV by sex workers. The program enforced universal use of condoms by sex workers through the use of sanctions where condoms were not being consistently used. This resulted in a six-fold increase in the percentage of sex acts in which a condom was used, in an 85% decrease in STD cases in men, and a decline in HIV prevalence in pregnant women and military conscripts (NIH, 1997).

The Gonorrhea Community Action Project (GCAP) is evaluating a provider intervention to see if skills building training will increase providers' taking of sexual histories or screening among adolescents. The skills building is provided in three formats: small group, large group, and office visit.

### Health Communication Interventions

Health communication interventions require special emphasis, although there is some cross-over with individual, community, and policy-focused interventions. The Centers for Disease Control and Prevention (CDC) defines health communication as the crafting and delivery of messages and strategies, based on consumer research, to promote the health of individuals and communities (Healthy People 2010, 1998). Although it can be an effective tool to help shape individuals' perceptions regarding a health issue, and can influence their

behavior in many areas of their lives, health communication should not be considered an automatic solution to complex health problems. It should be used in combination with other approaches.

Health communication is a process that is enhanced by other disciplines. The behavioral sciences are particularly useful for understanding human behavior. For example, anthropology and ethnology provide an understanding of the social and cultural context within which certain behaviors occur. Other disciplines, such as communications and marketing, provide insight into the best ways to develop and deliver health messages that can influence health behaviors.

Most public health campaigns strive for lasting behavior change and a sustained public health impact. However, lasting behavior change is a result of voluntary behavior change at the individual level. To facilitate voluntary behavior change, a campaign must appeal to the values and cost-benefit evaluation of each different audience group targeted, emphasizing the near-term salient benefits rather than the long-term, abstract collective benefits. Likewise, the health messages must be customized in such a way that they are interesting, relevant, and captivating to the audience(s). Messages should be clear, easy-to-understand, and easy to act on. Unless it's easy for people to remember how, when, and what to do, it's unlikely that a health communication campaign will be successful. Social marketing techniques applied to health communication campaigns have been shown to be effective in crafting health messages that “speak” to target audiences.

Successful health communication campaigns are based on systematic planning efforts and on communication objectives that are attainable, measurable, clear, and time-bound. Successful campaigns develop and deliver health messages that are tailored to specific target audiences. Disseminating generic health messages widely and increasing knowledge about certain health issues and healthy behaviors have been shown to be less effective than more targeted efforts. Audience-centered health communication efforts with a “consumer-perspective” are much more effective in motivating target audiences to change their behavior. This requires designing and delivering messages that are adapted to the needs, perceptions, preferences, and situations of the intended audiences, rather than the needs and goals of the message designers or institu-

tions. Therefore, health communicators in public health practice need to know as much as possible about their target audience(s) in order to stimulate voluntary behavior change.

The most successful health communication campaigns involve a “systems approach” that combines multiple mass media approaches (TV, radio, print, etc.), community partnerships, training efforts, and activities by grass roots organizations that have credibility with the target audience(s). These efforts, blended together in an effective and coordinated manner, can attract more attention, reach more people in the community, and can create a perception that the campaign is exceptionally vigorous. The key is using multiple communication formats and changing messages to match changing needs and interests of different target audiences. For example, print materials serve best as tools for raising awareness, reinforcing a certain behavior, or as a reminder, while radio and television can reach millions of people simultaneously to disseminate information quickly. Interpersonal communication among peers may be key to persuading target audiences to try new products, services, or behaviors. Radio and TV announcements, peer education groups at street corners, poster contests, separate training videotapes, and brochure distribution can all take place simultaneously.

Health communication may take many formats as described below.

- *Mass media* is perhaps the most visible health communication format. Mass media include radio, television, magazines, and newspapers. Mass media is most effective when used strategically and in combination with other efforts. Media advocacy is an example of the strategic use of media for advancing social or policy initiatives (Wallack, 1993). Edu-tainment, popular entertainment imbedded with health or social messages, is gaining popularity in the U.S. For example, working closely with script writers and producers, STD-related information can be written into the story lines of popular soap operas. This can not only help to accomplish the goal of awareness raising, but can also help change social norms over a period of time.
- *Informational materials* such as brochures and fact sheets are also vital components of health commu-

nication campaigns. Developing and distributing target-audience specific print materials on STDs (informational brochures, disease-specific fact sheets, STD Treatment Guidelines, etc.) should be part of an ongoing health communication effort.

- *Visual materials* help learners remember important information better than just reading or hearing alone. Posters, billboards, flip charts, talk boards, models, display boards, and fotonovelas are good examples of such health communication materials. A fotonovela is a story told with photographs where the characters' dialogue appears in conversation "bubbles." They are similar to soap operas in print format or to comic books. Dialogue is written at a low-literacy level, and the story is told via a realistic, educational, and possibly entertaining plot.
- *Audiovisual materials* such as videotapes are useful in disseminating messages and ideas to audiences in distant locations. They have the added benefit of being able to be viewed at the target audience's convenience. Audiovisual materials can be especially useful for demonstrating or modeling a specific behavior.
- *Action-oriented activities* such as role playing, storytelling, games, drama, songs, music, contests, fairs, etc. are useful when social support or peer support is needed to learn a skill or behavior, and when working with low-literacy audiences.
- *Internet and electronic media* such as specifically designed CD-ROMs and Internet outreach, have become increasingly popular ways to reach large numbers of people. For example, in conjunction with a major article on STDs in the *St. Louis Post Dispatch*, an interactive forum was set up on the Internet to allow individuals to ask a doctor questions about sexual health. This was part of a larger set of health communication activities that evolved around the newspaper article. In San Francisco, patients seeking STD screening services at the STD clinic were asked to complete an Internet Sex Survey. The survey was to determine the percentage of STD clinic patients who met sex partners on the Internet, what types of sexual contact they had with their partners, and whether they used condoms. One thousand patients completed the survey. 17% indi-

cated they met sex partners through the Internet.

Health communication activities that engage target audiences can be powerful tools to facilitate grass-roots involvement. For example, contests for materials to be published in print format or to be broadcasted via radio or television bring people together to work on the same cause.

Effective relationships and partnerships with community leaders, policymakers, and other key individuals can strengthen health communication campaigns. Those who have influence in the community can be critical in establishing an environment receptive to STD prevention programs and to securing additional resources to support those programs. Many times partners can reach audiences who are inaccessible to health departments. Partners can be critical vehicles for funneling information, giving a new voice to messages, and for establishing community-level, grass-roots support for STD prevention.

### Policy-Focused Interventions

Some interventions attempt to influence laws, policies, and cultural norms. Legislative and policy changes are at the heart of such interventions. Examples from other fields of disease prevention include access to clean needles for HIV prevention, outlawing smoking in workplaces, fluoridating water to reduce cavities in teeth, and increasing the penalties for driving under the influence of alcohol. All of these interventions have had an important effect on risk behaviors and disease prevention (NIH, 1997).

Examples of policy-focused interventions include:

- Providing increased funding for drug and alcohol abuse treatment programs.
- Support for sex education interventions that focus on subjects beyond abstinence alone.
- Lifting constraints on condom availability (e.g., in schools, correctional facilities) (NIH, 1997).

Condom availability programs in schools in Massachusetts, New York City, and Philadelphia have been challenged in the courts (Mahler, 1996). Program opponents have generally argued that such programs violate parents' rights and religious sensibilities. In January 1996, however, the U.S. Supreme Court declined

to review the Massachusetts case that upheld the school district's program that allowed students in grades 7-12 access to condoms on request without a procedure for parents to refuse participation on behalf of their children (IOM, 1997).

Twenty three studies of school-based sex and AIDS/STD education programs that were published in peer-reviewed journals were reviewed and evaluated for their effect on sexual behavior. The authors found that some but not all programs were effective and that programs having the following six characteristics had a clear effect on behavior: (1) narrowly focused on reducing sexual risk-taking behaviors that can lead to STDs, HIV, or unintentional pregnancies; (2) utilized social learning theories as a foundation for development; (3) provided basic, accurate information about the risks of unprotected intercourse and methods for avoiding unprotected intercourse through experiential activities designed to personalize this information; (4) included activities that address social or media influences on sexual behaviors; (5) reinforced clear and appropriate values to strengthen individual values and group norms against unprotected sex; and (6) provided modeling and practice in communication and negotiating skills (Kirby, 1994).

A significant barrier to implementation of effective school-based interventions is inadequate support for dissemination of such programs. To address this issue, the "Research to Classroom Project," supported by the Centers for Disease Control and Prevention, is the largest federal program to disseminate school-based curricula for reducing sexual risk behaviors. Under this program, CDC identifies curricula that have been evaluated and shown effective in reducing specific, risky behaviors and that meet other selection criteria, and then provides resources, including training and technical assistance, to ensure that such curricula are disseminated nationally.

### Important Factors for Effective Behavioral Intervention Programs

Behavioral research has identified the following characteristics of effective programs (AED, 1997):

- are designed according to the results of a comprehensive needs assessment, including the identifica-

tion of target group members' level of motivation to change risk behaviors

- are affordable and easy to access by the target population and are able to respond to other expressed needs of the community
- are culturally competent, relevant to the targeted population (i.e., consistent with norms, attitudes, and beliefs), and include members of the target population in program planning and implementation
- have clearly defined target group(s), interventions and program components, and objectives
- focus on behavioral skills that include how to carry out low-risk, safer behaviors as well as how to avoid and cope with high-risk situations
- do not provide messages that are judgmental, moralistic, or that attempt to instill fear
- have ample duration and intensity to achieve lasting behavior change, and provide support and skills necessary to cope with lapses and setbacks in maintaining safe behavior
- address the social and community norms of the target population so that program participants receive consistent messages and reinforcement for the prescribed behavior change
- are offered to the target group as part of a continuum of health care (e.g., drug and alcohol abuse treatment, HIV testing, family planning, and other health services)
- address other basic needs of the targeted population (e.g., housing, food) for STD prevention to be considered a priority
- are regularly monitored to assure implementation is according to plan and that outcomes are being achieved

### Implementation Considerations

Several factors may influence the implementation of risk behavior interventions within the United States (NIH, 1997). First, adherence to interventions is improved when targeted individuals and communities are

involved in every phase of devising, developing, and implementing the programs. Input of these individuals is crucial.

Second, programs need to be culturally sensitive. This requires attention not only to ethnicity and language but also to other factors including social class, age, developmental stage, and sexual orientation. Programs conducting interventions with individuals and populations who feel stigmatized by society or intimidated by governmental programs should carefully consider who can most effectively conduct the interventions and what training is needed for those individuals to be most effective with the targeted individuals.

Third, an appropriate intervention dosage must be selected for the population; this includes the number, length, and intensity of the interventions. Studies demonstrate that numerous intervention points over extended periods of time are more efficacious than once-only approaches for most populations. Almost all reported studies have short follow-up (3-18 months), which suggests that attention must be paid to maintenance efforts. It may be necessary to include additional, periodic intervention points for subsets of the population; longer-term follow-up would assist in determining that fact.

Fourth, it is important to address political barriers, community myths, and misinformation. For example, scientifically derived results do not support assertions that needle exchange programs will lead to increased needle-injecting by current users or to an increase in the number of users. Nor do the data indicate that sex education programs result in earlier initiation of sexual behavior or in more sexual partners or that condom distribution fosters riskier behavior. To the contrary, outcomes of these programs are quite consistent with the values of most communities. For example, behavioral interventions lead injecting drug users to inject less frequently, and the numbers of users in a community may decrease; after interventions, young people tend to delay initiation of intercourse or, if they are already sexually active, to have fewer partners; and adults, following interventions, engage in fewer incidents of risky sexual behavior. Armed with this knowledge, those who implement programs should confidently solicit the support and involvement of local government, educational, and religious leaders.

Despite gains relevant to implementation of prevention programs, very little cost analysis information has been available to guide state and local health departments, community-based organizations, and other practitioners. These analyses are important in determining the most cost-effective interventions for implementation. In addition, communities lack fiscal resources to support such interventions once they are proven effective. Finally, there are social and cultural barriers to implementation of programs; these include sexual inequality, racism, and homophobia.

Sufficient training of personnel, monitoring of procedures to ensure fidelity to key components and established methods, and strong evaluation plans are essential components of any implementation strategy. When training and local capacity-building are necessary for implementation, training and technical assistance should be available to facilitate prevention programs at the state and local levels. Evaluation results should be reported and widely disseminated so as to advance both science and practice. Newly implemented programs yielding results different from established findings should be carefully compared with original designs in order to explain the variance in outcomes. Some variations in outcomes depend on staff expertise, program quality assurance, or target populations. Other variations seem to be inexplicable.

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### Recommendations

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- Program managers should develop interventions based on a sound theoretical knowledge and should utilize interventions shown to be effective.
  - Programs should collaborate with existing intervention programs such as TB and HIV, and with behavioral scientists as needed.
  - Programs should have trained, quality staff and quality assurance procedures in place when implementing interventions.
  - Programs should have an evaluation plan and results should be compared to established findings. Interventions developed at the local level should have a strong evaluation plan.
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## Key Questions for the Development of Interventions

The following key questions may help planners and program managers select or design a more effective prevention program (AED, 1997):

- **Did you consider the theoretical basis for the proposed intervention?**

Which theoretical approaches or factors did you use in selecting or developing interventions?

- **What are the key features of the intervention selected?**

Are you able to answer the following questions:

Who is being targeted?

What is the proposed intervention?

Where is the intervention being delivered?

How is the intervention being delivered?

- **Did you consider the general characteristics of effective prevention programs in selecting or developing the intervention?**

Which did you use in the proposed intervention?

- **Did you look for and find research on the effectiveness of interventions for target populations similar to the group(s) you are targeting?**

If available, did you use the results in selecting or designing a proposed intervention?

- **Have resources been dedicated to research and development, implementation and evaluation?**

## CONCLUSIONS

In conjunction with the biomedical approaches to the treatment and prevention of STDs, the use of complementary behavioral interventions will have a significant effect on the prevention of STDs. It is important for program managers to conduct logical approaches to behavioral interventions due to limited resources. Emphasis should be placed on reaching the target population with the appropriate intervention at the optimal time. A manager should be knowledgeable of accepted and effective interventions and should use the framework of the intervention as a starting point - do not “reinvent the wheel.” Most important, in developing the intervention, careful attention must be taken to ensure that a strong evaluation component is developed which includes a procedure for quality assurance and feedback to further strengthen the approach taken.

A critical next step in the area of behavioral interventions involves the criteria for choosing interventions most ready for implementation in the community. The most obvious is evidence of strong program effects observed under rigorous, controlled research conditions. For those programs with strong effects, priority should be given to reliable interventions that can be delivered with fidelity to the original program model. Usually such programs do not require significant new demands or elaborate research at the delivery site. The lack of evaluation of numerous interventions developed by community organizations means that they have not been demonstrated to be effective. However, because community workers have developed a number of innovative and promising programs, there is a great need for them to work together with researchers to evaluate their programs, thereby advancing risk behavior intervention science and practice (NIH, 1997).



## Appendix BC–A

### EXAMPLE OF PLANNING MODEL

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(Office of Technology Assessment, 1995)

**Category**—Counseling, Testing, Referral, Partner Notification

**Target Population**—Out-of-treatment adult injection drug users and their partners; most African-American and Latino, located in a specific neighborhood of a city; readiness for behavior change of drug users and partners was pre-contemplative

**Level**—Individual

**Behavioral Objective**—Decrease drug use and sexual risk behaviors

**Factors affecting Risk Behaviors**—Knowledge of HIV/AIDS transmission, perceived vulnerability to acquiring HIV, perceived correct condom use, perceived outcomes of behavior change, accessibility of condoms and bleach, perceived peer and community norms

**Services, Materials, and Information**—Information and risk-reduction counseling, HIV testing, free condoms and bleach, written materials about transmission and services available

**Setting**—Two mobile vans situated in high-need areas of the targeted neighborhood

**Persons Delivering Intervention**—Community paraprofessional trainers and counselors and medically trained staff member (for HIV testing)

**Visibility of Intervention**—Outreach staff of both sexes who reflect the composition of the neighborhood distribute materials on the program and services to other agencies and through one-on-one contact

**Frequency/Duration**—Two 20- to 30-minute sessions over two to three weeks (moderate intensity)

**Scale and Significance**—Approximately 1,000 of the estimated 5,000 target group members will be reached

**Contextual Factors**—Services to be delivered are partly dependent on the client's HIV status; seronegative participants receive education, counseling, and referrals; seropositive participants receive these services plus medical treatment and counseling.

**Extent of Coordination**—Formal and informal coordination and referral contracts developed with eight other service agencies in the target neighborhood.

## Appendix BC–B

### BEHAVIOR CHANGE MODELS

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#### Health Belief Model

**Premise**—Health behavior is a function of specific health beliefs; all must be operating for a (risk reducing/health promoting) behavior to occur.

#### I. THREAT

- \* Perceived susceptibility  
*“I could get it.”*
- \* Perceived severity  
*“The consequences of getting it would be serious.”*

#### II. OUTCOME EXPECTATIONS

- \* Perceived benefits of performing a behavior  
*“If I use condoms/bleach, I can prevent HIV infection.”*
- \* Perceived barriers of performing the behavior  
*“Cleaning my works is a real drag.”*
- \* Belief that the benefits of performing a behavior outweigh the consequences of not performing it before behavior change will occur  
*“I’d rather use clean needles than get HIV.”*

#### III. SELF EFFICACY (later addition)

- \* Belief that one can perform a behavior, even under difficult circumstances  
*“I know I can do this.”*

### Theory of Reasoned Action

**Premise**—In order for behavior change to occur, one must have an intention to change; intentions are influenced by two major factors.

#### I. ATTITUDES TOWARD THE BEHAVIOR

- \* Belief regarding performing behavior, based on positive or negative consequences (outcome expectations, decisional balance)  
*“If I asked my boyfriend to use a condom, he’d get really mad.”*
- \* Evaluation of the consequences to performing behavior  
*“It’s important to me to prevent HIV.”*  
*“Using condoms isn’t worth it if my boyfriend gets upset.”*

#### II. SUBJECTIVE NORMS ABOUT THE BEHAVIOR

- \* What significant others think about performing the behavior  
*“My friends think using condoms is a good thing.”*
- \* Motivation to perform behavior based on subjective norms  
*“Since my friends think I should use condoms, I guess I’ll ask my boyfriend to use them.”*
- \* What attitudes and beliefs toward the behavior, along with the perception of what significant others think an individual should do, influence intentions toward behavior.  
*“I’m not too crazy about using condoms, but I’m crazy about Pat, and Pat really wants me to use them, so I guess I will.”*

### Social (Cognitive) Learning Theory

**Premise**—Behaviors are dynamic, and influenced by both personal and environmental factors (reciprocal determinism); behaviors are learned through direct experience or by modeling others' behaviors through observation.

#### I. SELF EFFICACY

- \* A person's belief about his/her ability and confidence in performing a particular behavior, and belief that it can be done even under difficult circumstances.  
*"Even when we're really strung out and my partner tries to talk me out of cleaning my works, I can talk him right back into cleaning them."*

#### II. OUTCOME EXPECTANCIES

- \* A person's belief about the positive or negative consequences of performing a particular behavior. It will be performed to the extent that it will lead to a positive outcome.  
*"I heard that cleaning my rig with bleach can kill HIV so I got some bleach and now I always clean my works."*
- \* Practicing new behaviors through observation and modeling are important components of this theory, as well as providing support for provisional tries.

### Transtheroretical Model (Stages of Change)

**Premise**—Behavior occurs in a series of stages, independent of specific theoretical factors. Movement through the stages varies from person to person and group to group. There are 5 stages of change, as well as various processes and levels of change.

#### Five Stages of Change

- \* Precontemplation—no intention to change behavior; not aware of risk, or believe behaviors don't place them at risk.  
*"I know I have a lot of sexual partners, but I don't need to use condoms because my partners aren't at risk for HIV."*
- \* Contemplation—recognizes behavior puts them at risk and is thinking of changing, but not committed to making that change.  
*"I know that not using a condom puts me at risk for HIV, but sex isn't the same when I wear a condom."*
- \* Preparation—person intends to change risky behavior sometime soon and is actively preparing.  
*"I just bought some condoms and am going to talk to my partner about using them the next time we have sex."*
- \* Action—person has changed risky behavior recently, with change having occurred in a relatively recent time period (i.e., 6 months)  
*"My partner and I used a condom for the first time and it wasn't as bad as I thought."*
- \* Maintenance—person has maintained behavior change for a long period of time (> 6 months), and has adapted to the change.  
*"Using condoms is no big deal anymore; my partner and I have our routine down and always use them when we have sex."*
- \* Relapse is a normal process in one's attempt to change behaviors.

## BEHAVIOR CHANGE MODELS, continued

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### Diffusion of Innovation

**Premise**—Process through which any new idea is communicated to members of a group or population, and at what stages or intervals over time people respond to and accept those messages.

#### I. COMMUNICATION CHANNELS

- \* for dispersing the innovation or new message.

*Word of mouth, telephone, Internet, newspaper, newsletters, “street sheets” (role-model stories)*

#### II. OPINION LEADERS

- \* visible, respected people who can assist in disbursing the innovation or message.

*(i.e., Magic Johnson’s personal experiences with HIV and his education/testing campaign.)*

#### III. TIME AND PROCESS REQUIRED

- \* for the innovation to reach community or group members
- \* people receive/accept messages at different time intervals



#### IV. SOCIAL NETWORK TO LINK MEMBERS

- \* diffusion process aided by social networks

*Peers, significant others, family, friends, dealers, bar owners*

### Empowerment Theory/Popular Education

**Premise**—A social action process that promotes participation of people, organizations, and communities in gaining control over their lives in their community and larger society.

Empowerment is not characterized as achieving power to dominate others, but as power to act with others to bring about change.

#### I. TARGETS FOR CHANGE

- individual level
- group (agency or organizational)
- structural (within a larger organizational or societal setting)

#### II. 3-STAGE METHOD FOR PARTICIPATORY EDUCATION

- listening (understanding the felt issues of the problem in the community)
- participatory dialogue (among all members in the group)
- action (envisioning positive change during the dialogue)

\* *process-driven, rather than task oriented*

#### III. 5-STEP QUESTIONING STRATEGY USED BY FACILITATOR

- describe what participants see and feel
- define the many levels of the problem as a group
- share similar experiences from their lives
- question why the problem exists
- develop action plans to address the problem

\* *Role of Health Educator: facilitator, guide discussion from the personal, to social analysis and action level, through the use of codes (pictures, poems, stories, slides, role plays, etc.), and 5-step questioning strategy*

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