

## **A Brief Description of the PLACE Method and**

### **Highlights from an Assessment in an Urban Township in Cape Town, South Africa**

#### **A Background**

Because resources for HIV prevention programs and monitoring and evaluation of AIDS prevention interventions are extremely limited, there is an urgent need to focus interventions where they are most cost-effective. Areas with higher incidence of HIV infection have been dubbed high transmission areas (HTAs)<sup>1</sup>. Empirical population based studies to identify areas with high HIV incidence are rarely conducted due to cost, feasibility, logistics, loss to follow-up, and ethical concerns. This protocol describes a rapid and systematic assessment method to identify areas likely to have high incidence of HIV and specific sites within these areas where AIDS prevention programs should be focused. The method does not include any STD or HIV testing.

The PLACE method was developed based on epidemiological models of the HIV epidemic and empiric data showing geographic clustering of sexually transmitted infection in communities. The initial “core group” concept introduced by Yorke in 1978<sup>2</sup>, the mathematical models<sup>3</sup> developed by Anderson and May, and the recent phase-specific model<sup>4</sup> described by Aral and Wasserheit all highlight the importance of the rate of new sexual partner acquisition in a community and its pattern of sexual networks. An important barrier to developing network-informed interventions has been the lack of rapid, reliable and valid field methods for describing the dynamic web of sexual partnering and needle sharing in a defined population in a way that is useful for intervention planning.

Although empiric data to describe key features of a population’s sexual network may be difficult to obtain from individuals, empiric data often show a geographic clustering of infection. We believe the clustering of infection reflects the underlying pattern of sexual and/or injection drug use networks of the population within the geographic area and that readily observable characteristics at the community level may be associated with the capacity of the underlying networks to sustain or spread STD/HIV. In sub-Saharan Africa, for example, there is a recognizable pattern of geographical clustering of HIV infection by level of urbanization.<sup>5</sup> HIV incidence rates are generally higher in urban areas, moderate in peri-urban areas, and much lower in rural areas.<sup>6 7 8 9 10</sup>

Another characteristic of areas likely to have a higher incidence of HIV infection is the intersection of drinking alcohol, short-term migration and, commercial activity. This intersection occurs, for example, at hotels for truck drivers, at bars in port cities, and in residence hostels for migrant workers<sup>11</sup>. In Mexico, these activities appear to coincide at border crossings. Other contextual factors associated with “high transmission areas” include poverty, population crowding, rapid growth, population mobility, poor access to health services, high male to female ratio, and unemployment.

Accessing the individuals in the underlying sexual and/or drug injection networks that sustain the HIV epidemic within a high transmission area is critical. Empiric identification of a community’s sexual network and these individuals in particular, however, has also proved difficult to successfully achieve. Full sexual network specification (a full matrix of who has sex with whom) is expensive and susceptible to significant self-reporting bias as people are reluctant to identify their non-marital sexual partners. The approach taken in this protocol is to identify the places in the community (such as the hotels, hostels and bars) where people meet new sexual partners or inject drugs and determine at which sites it is most feasible to access individuals most likely to transmit HIV. There is an urgent need to intervene at such sites-- the risk of HIV transmission in light of the rate of new partnership formation, injection drug use, and lack of condom use is extremely high.

To summarize, the method described in this protocol is based on the following principles and assumptions:

- 1) AIDS prevention programs should focus on places where people with high rates of new sexual partnership formation meet new sexual partners (and where injecting drug users share needles);
- 2) Available demographic and epidemiologic contextual data can provide sufficient information to identify areas most likely to have partnership formation patterns capable of spreading and maintaining infection;
- 3) Within these HTAs, a primary focus is to identify places where individuals with highest rates of new partnership formation meet new partners;

- 4) To minimize bias, the method does not primarily rely on self-reported behavior, contact tracing, naming of sexual partners, or require information about self-reported behavior except to validate information obtained in other ways;
- 5) The method is feasibly implemented in a short period of time without on-site involvement of outside technical experts; and
- 6) The method provides program indicators useful for intervention monitoring.

## **B Objectives**

The overall purpose of the protocol is to identify High Transmission Areas (HTAs), characterize sites within these areas, and specify indicators for each area that can be used to monitor AIDS prevention in the area. The specific objectives are:

1. To prepare for study implementation including coordination with the intervention team, adaptation of data collection instruments and obtaining of ethical and community approvals;
2. To *identify* HTA's in the city or health district, *select* specific HTA's for this study, and *describe* selected HTA's;
3. Within the selected HTA's, to identify sites where people go to meet new sexual partners;
4. To visit, verify and characterize reported sites within each HTA;
5. To describe the characteristics of people socializing at the sites and the sexual links between sites;
6. To map sites and key contextual information in the HTA; and
7. To fully communicate findings using understandable indicators of gaps in AIDS prevention programming in order to facilitate responsive intervention.

We define a network site as a place or event in an HTA where people with high rates of partner acquisition meet to form new sexual partnerships or where people who frequently share needles meet to inject drugs. A site could be a street, bar, a brothel, a church, an all-night party, or a market place. In rural areas, sites may cluster around taxi stops or places that sell beer/alcohol. We focus on new partnerships because individuals with high rates of new partner acquisition are more likely to transmit infection and because newly acquired infection is more infectious. We focus on sharing needles among injection drug users because of the efficiency of transmission by needle sharing. We encourage identification of all sites in an HTA, not just traditional 'hot spots'. A map of these sites is a helpful planning tool for AIDS prevention. Along with well selected M&E indicators, maps can help program planners focus intervention efforts at sites where opportunity for HIV transmission is likely to be greatest.

## **C. Methods**

### **Step 1 Meeting to Identify HTAs in District or City**

The first step in this protocol is to identify high transmission areas in the district or city where the protocol is being implemented. The most valid data to identify HTAs, population based HIV incidence data, are not generally available. Consequently, we recommend that the people most knowledgeable about the city or district meet to review whatever contextual and epidemiologic data are available and reach a consensus on the identity of areas likely to have the highest rates of HIV incidence. Some high transmission areas may be readily apparent, but usually there is uncertainty about the location and geographic boundaries of HTAs.

The following contextual and epidemiologic data for the city or district should be collected prior to the meeting so that the identification of areas is based on all available relevant information:

- A description of the geographical distribution of the population and their economic activities including: urban centers, transport routes, economic centers, and residential areas
- A description of the geographic distribution of poverty, over-crowding, and uncontained urban growth including out-of-control shack towns, slums, or tent cities
- A description of the geographic distribution of cultural and leisure activity centers with a focus on where alcohol can be inexpensively purchased, where illegal injection drugs can be bought, and sexwork is practiced including sites such as: brothels, bars, night clubs, sports complexes, university social centers, shooting galleries, "bashes" or "rave" sites, beaches, and cultural festivals

- A description of the geographic distribution of areas where the male:female distribution is not 1:1 including: military posts, male worker dormitory areas, employment areas, trucker stations
- A description of the geographic distribution of crime including drug crimes and prostitution
- A description of the geographic distribution of infectious diseases including sexually transmitted infection and HIV
- A description of the geographic distribution of the pattern of health-care seeking behavior
- A description of the geographic distribution of resources that if mobilized could be used to help reduce HIV transmission and cope with the consequences of the epidemic.

### **Step 2: Field Work Phase I: Key Informant Interviews (3-5 days using 10-12 interviewers)**

After the areas of the city or district likely to have the highest incidence of HIV infection are identified, field work begins in those areas. There are three phases of field work: Key informant interviews, interviews with people knowledgeable about sites reported by key informants, and interviews with people socializing at a sample of sites.

Key informant interviewing is the primary method to identify sites where residents of the HTA meet new sexual partners (and/or sites where drugs are injected). Approximately 300-400 key informants per area are simply asked, "Where do people go to meet new sexual partners?" Names and locations of sites are recorded. Probes are used to ask where particular groups of interest such as youth or the military meet new partners.

Key informant interviews are a rapid method for obtaining sensitive data not otherwise available and especially useful for obtaining data such as a list of sites that can be verified by other sources. By developing a list of sites from many key informants, the bias from any individual informant is reduced. In addition, self-presentation bias is minimized by not asking about an individual's own sexual or drug-using behavior.

The number of key informant interviews cannot be specified prior to fieldwork because key informants should be recruited until few new sites are identified. Only people below the age of majority are excluded from being key informants. Key informants are requested to provide verbal anonymous informed consent. No identifying information is obtained. Key informants may include:

- Government officials including police and military;
- Health care workers;
- Officials of community-based organizations;
- Taxi drivers and their assistants;
- Truck drivers and their assistants;
- Sex workers, barmaids and other vulnerable women;
- Teachers;
- Unemployed adults; and
- In and out of school youth.

### **Step 3: Field Work Phase II: Site Verification and Mapping ( 5-7 days using 10-12 interviewers)**

Site verification should take place no more than one week after key informant interviews. In this phase, interviewers visit each site reported by a key informant to verify its existence and location and interview a person knowledgeable about the site (such as a bar manager or owner) to obtain characteristics of the site important for AIDS prevention. The location of the site is recorded on a map using pen and paper or using GPS units and digital maps.

Information obtained from each site during the visit to the site includes:

- Physical address of site
- Size at maximum capacity and fluctuations in size during day, week month, season
- Type of site (e.g., bar, street corner, hotel, worksite, prison, brothel)
- Who the site attracts (youth, migrants)
- Predominant age of attendees by gender

- Percent of those attending who are male
- Number of sex workers
- Whether sex occurs onsite
- Known links to other sites and areas
- Whether condoms are available , condom turnover, stock outs in past 12 months
- Whether publicly or privately operated
- Extent to which alcohol consumption and drug abusing behavior occur
- Months or years in operation
- Evidence of AIDS intervention at the site (number of AIDS educational posters, whether there are peer health educators or health outreach workers)
- Whether someone facilitates partner formation
- Number of workers
- Willingness of the respondent to sell condoms or hold prevention programs onsite

**Step 4: Field Work Phase III: Interviews of people socializing at sites (5-7 evenings with 10-12 interviewers)**

In this phase, a sample of sites are identified. The sample usually includes the sites most frequently reported by key informants, the largest sites, and a random sample of the smaller sites. At least 40 sites are included in the sample. At each site, a target number of men and women (usually 8 women and 16 men) are interviewed. Selection of these individuals is done in a manner than minimizes selection bias. Verbal anonymous informed consent is obtained prior to asking a brief questionnaire. The purpose of the survey is to determine the rate of new partner acquisition among men and women socializing at these sites and also to provide information regarding intervention program coverage and condom use. The information obtained on the questionnaire includes:

- Age
- Gender
- Frequency of attendance at site
- Opinion whether people come to site to meet new partners and whether he or she has ever met a new partner at the site
- Total number of partners in the past four weeks and in the past year and the number of those that are new in the past four weeks and past year
- Where else goes to meet new partners
- Level of condom use
- Employment status
- Educational level
- Exposure to intervention programs in community

**Step 5: Feedback session to community and intervention teams**

The data are summarized and presented along with the maps to the community and intervention teams. Feedback from the community is included in the final report along with targets for interventions in the next year. The assessment can be repeated in one year to assess progress.

## Highlights from an PLACE Assessment in a Township in South Africa

### Key Informant Interview Results

- Seven field staff interviewed 313 key informants over a ten day period. Key informants included youth, STD clinic patients, taxi drivers, nurses, alcohol sellers, police, public officials, representative of community based organizations and business men.
- Key informants reported a mean of 2.7 sites each for a total of 852 site reports that identified, after multiple reports of the same site were removed, 363 unique sites—more than three times the expected number of sites.
- Over 75% of the sites were informal drinking bars and 15 % were taverns. The remainder included a church, community hall, a nightclub, a food stand, a garage, a shack, and a hair salon. No commercial sex.

### Site Visits and Interviews with Responsible Person Onsite

- During 8 days of intensive field work, 12 field staff found 86 % of the reported 363 sites and interviewed a responsible person such as a bar manager at each site.
- 74% of those interviewed reported that people come to their site to meet new sexual partners.
- Fewer than two percent of the sites had any onsite AIDS prevention activities such as educational materials, peer education programs or regular visits from health outreach workers.
- Condoms were never available at over 90 % of the sites, and only 22 % reported that condoms were available nearby. Almost 60% reported that they would be personally willing to sell condoms onsite.
- The most frequent description of the type of person who visits the site was “Everybody”. Over a third spontaneously responded either “students” or “youth”. The most frequently mentioned age/gender group at the sites was men 25-30 and women 16-24. Over 10 percent reported that women younger than 16 visit the site.

### Self-reported rates of sexual activity among individuals socializing at sites

- 738 men and 378 women were interviewed at a sample of 50 sites during 8 late afternoons and evenings
- Men reported a mean of 2.3 total partners and 1.2 new partners in the past four weeks. About 20 % reported four or more partners in the past four weeks; a third reported two or more new partners in the past four weeks.
- Women reported a mean of 1.8 total partners and 0.9 new partners in the past four weeks.
- Almost half of the respondents had never used a condom and less than a third at the most recent coitus.
- Over a fourth visited the site more than 10 times/ month. More than half visited at least three times per month.
- Over 80 % reported that people come to the site to meet new sexual partners. Forty percent of the men and 30 percent of the women reported having personally met a new sexual partner at the site. Half reported going somewhere in the township to meet new sexual partners and over half reported going outside the township to meet new sexual partners.

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