

**Information Collection Request
Supporting Statement
Part B**

National HIV Behavioral Surveillance System

August 2, 2007

Contact Information:

Amy Lansky, PhD
Behavioral and Clinical Surveillance Branch
Division of HIV/AIDS Prevention
National Center for HIV, Viral Hepatitis, STD, and TB Prevention (proposed)
Centers for Disease Control and Prevention
1600 Clifton Road (MS E-46)
Atlanta, GA 30333
404.639.8663
ALansky@cdc.gov

B. Collections of Information Employing Statistical Methods

1. Respondent Universe and Sampling Method

Target Populations

In the United States, HIV is primarily an epidemic that affects urban areas. For this reason, NHBS is conducted in the metropolitan statistical areas (MSAs) with the largest burden of HIV disease. NHBS sites comprise the state and local health departments with the highest AIDS prevalence at the end of 2004, limiting eligibility to one MSA or Division per health department jurisdiction (see Section B5 for a list). Approximately 66% of the prevalent urban AIDS cases in 2004 were reported from these 25 MSAs.

Groups chosen for inclusion in NHBS are those in which the potential contribution to the spread of HIV in the community is greatest: men who have sex with men (MSM), injecting drug users (IDU), and heterosexuals (HET) at high risk for infection. Basic eligibility criteria are age 18 years or older, a resident of the Metropolitan Statistical Area, not transgender; able to complete the interview in English or Spanish, and did not already participate in the current cycle. Specific criteria for each group are listed below; eligibility assessment is described in Attachment 10.

MSM: Male at birth; had sex with another man in the past 12 months

IDU: Injected drugs in the past 12 months

HET: Had sex with an opposite sex partner in the past 12 months; have a physical or social connection to a 'high risk area' within the MSA.

The definitions of MSM and IDU are based on simple behavioral criteria; this is because HIV prevalence among these groups is high and thus anyone engaging in the behaviors could be considered at risk. The definition of a "heterosexual at risk" has not been well articulated nor is there consensus on the best definition; this is due, in part, to the fact that HIV prevalence is low and therefore a definition based on "sexual contact with an opposite sex partner" does not adequately identify risk for HIV infection. In order to develop a definition for use in NHBS-HET, the CDC Behavioral Surveillance Team analyzed available behavioral data, reviewed the literature, and conducted a series of expert consultations with persons from academia and public health practice. Ultimately, it was determined that the best definition would account for both behavior and the social context in which those behaviors occur, resulting in the definition above. A "high risk area" is a geographic area (census tract) with high rates of heterosexually-acquired HIV infection and poverty. Individuals who have a physical connection to these areas are those who are residents of such neighborhoods; individuals with a social connection to these areas are those who are not residents of these neighborhoods, but have a social connection (such as a friend, sex partner, family member) to someone who lives there.

Each of the 25 project areas will have a minimum sample size of 500 eligible respondents each year, for a yearly total of 12,500 eligible respondents.

Sampling Methods

The methods for NHBS were chosen based on multiple consultations with sampling methodologists, those with expertise conducting research or behavioral surveillance activities with the three populations of interest, and public health practitioners who provide services to these populations, as described in Section A8. The selection of appropriate methods to recruit representative samples of participants is complicated by the fact that population-based samples of these groups are not feasible as they cannot be easily identified as members of these populations or enumerated for sampling purposes. Several guiding principles determined the selection of methods to conduct surveillance with the three populations. These principles included the selection of methods that would 1) result in the most representative sample possible of each population, 2) be feasible for implementation in the heterogeneous areas to be included in the surveillance system, and 3) allow for standardized recruitment of the targeted number of

respondents during each cycle.

NHBS will use two sampling methods: venue-based, time-space sampling and respondent-driven sampling (RDS). For the MSM cycle, venue-based, time-space sampling will be used; for the IDU and HET cycles, RDS will be used. These are methods with demonstrated ability to recruit the respective populations (Abdul-Quader, 2006; Diaz, 2001; Heckathorn, Semaan et al., 2002; Magnani, 2005; MacKellar, 1996; Mansergh, 2006; McFarland, 2001; Muhib, 2001; Ramirez-Valles, 2005; Semaan, 2002; Valleroy, 2000; Wang, 2004).

Venue-based, time-space sampling

Venue-based, time-space sampling activities can be grouped into three components. Each component is described in more detail below. Briefly, in the first component, staff identify the venues (or “spaces”) and times to recruit MSM. As part of this component, venues are assessed for the number of MSM in attendance, logistics and feasibility of recruiting and conducting the surveillance activities, and safety. In the second component, staff construct monthly sampling frames of eligible venues and venue-specific day-time periods. From the monthly frame, staff randomly select a set of venues and day-time periods in two stages and schedule these on monthly calendars. In the third component, staff conduct the surveillance activities (eligibility, survey, HIV test) with men during recruitment events conducted in accordance with the monthly calendar.

Venues eligible for consideration for HIV behavioral surveillance are defined as public or private locations that are attended by MSM for purposes other than receiving medical, mental-health-care, social services, or HIV/STD diagnostic testing or prevention services. Venues eligible for consideration include bars, dance clubs, retail businesses, cafes and restaurants, health clubs, social and religious organizations, adult bookstores and bathhouses, high-traffic street locations, parks, beaches, and special events such as gay pride festivals, raves, and circuit parties. For each eligible venue, specific day-time periods are identified as being well-attended by MSM. Venue-specific-day-time periods may be as few as one or two hours per month (e.g., a social organization that meets only once per month) or as many as 12 hours or more daily (e.g., a busy street corner in a gay neighborhood). As a general principle, in order to reach sample size goals, venues included on the frame are expected to yield a minimum of 8 MSM in attendance during an average 4-hour sampling event. Not all venues will be included in sampling frames; some are excluded due to low MSM attendance, lack of safety, or disapproval by owners or managers. The approval of venue owners or managers will be necessary for many entertainment and commercial venues that are included in sampling frames. While the bulk of the venue-identification effort is done prior to the surveillance activities, staff are expected to identify new venues that open during the data collection period. These new venues must be considered for inclusion in the monthly sampling frames.

Once the initial universe of venues and associated day-time periods are identified, sampling frames are constructed. Each project area will construct 2 sampling frames. The first frame is the venue frame. The second sampling frame is the list of venue-day-time periods (or “VDTs”) for each venue listed in the venue frame; this frame is called the “VDT frame.” On a monthly basis, venues and day-time periods are randomly selected from their respective frames and scheduled for sampling on a calendar for the upcoming month. The sampling plan is designed to optimize representation of MSM from different venues and to minimize burden on venue owners and patrons. Thus, venues are given an equal probability of selection each month and sampling is conducted without replacement, using the VDT software program described in Section A.3.

Recruitment of men for the survey occurs at the randomly selected venues during the randomly selected day-time periods according to the monthly sampling calendar. During these events, field staff will perform three main duties— count venue attendees, recruit participants, and conduct interviews. During recruitment events, the field supervisor will count all men who appear to be ≥ 18 years of age who

cross a defined area of the venue. Individuals are approached consecutively when project staff are available. Counting will last for the duration of the recruitment event, beginning when the team is ready to start conducting interviews and ending when the last person has been approached for recruitment. Those individuals who have crossed the defined area of the venue and been counted form the pool of persons eligible for recruitment into NHBS.

During the recruitment event, the field supervisor will direct an interviewer to approach sampled men. The interviewer will intercept the men to recruit them for participation in NHBS; they will use a script similar to the following: *“Hi, my name is (name) and I work for (organization). We are conducting an important health survey and I would like to ask you just a few quick questions.”* If the man accepts the intercept, interviewers will then let him know that he must complete a screener to determine if he is eligible for the study, and that not all selected men will be eligible (Attachment 2). If the prospective participant agrees, the interviewer will assess his eligibility for participation using the screener (Attachment 2). Men will normally be approached for recruitment in public, but eligibility screening will occur in a private area of the venue.

For each project area, venue-based, time-space sampling methods result in a sample representative of men who meet the eligibility criteria who attend the venues included in the sampling frames and who reside within the project area. Although some MSM do not attend MSM-identified venues, several surveys suggest that most attend one or more types of venues included in the sampling frames (Ramirez-Valles, 2005; Xia, 2006).

Respondent-Driven Sampling

For the IDU and HET cycles, RDS will be used to recruit participants. RDS is a chain-referral sampling strategy similar to snowball sampling. It starts with a limited number of “seeds” who are chosen by referrals from people who know the local IDU/HET population well, or through outreach to areas where IDU/HET can be found. Seeds complete the surveillance activities (eligibility, survey, HIV test) and then are asked to recruit a specified number (usually between 3 and 5) of people they know who are IDU (for the IDU cycle) or HET (for the HET cycle). These persons, in turn, complete the surveillance activities and are asked to recruit others. This recruitment process continues until the sample size has been reached. Participants receive incentives for participating in the surveillance activities as well as for recruiting others. By starting with a small number of seeds, limiting the number of individuals each participant can recruit, and allowing a significant number of recruitment waves to occur, the distribution of the final sample begins to resemble the underlying eligible population living in the project area and is unbiased by the characteristics of the seeds (Heckathorn, 1997; Heckathorn, 2002).

The geographic component of the definition of “heterosexual at risk” is different for seeds and for other participants. Seeds must be residents of “target” high risk areas, or those areas of the MSA identified as having the highest rates of HIV/AIDS and poverty; this is to ensure that people from these areas are included in the sample. In order to be eligible to recruit others, participants must live in a “high risk area.” Thus, participants who do not live in a high risk area are considered eligible based on their social connections, but only those with a physical connection to the high risk area (i.e., residency) are eligible to recruit others. This is to ensure an adequate sample size of participants in the high risk area yet also allows for examination of network ties outside those specified areas. This information will be used to assess the definition of HET for use in future cycles.

Sample size

During each cycle in each MSA, a minimum of 500 eligible people will be recruited and interviewed from the appropriate high-risk group for the cycle. The sample size of 500 participants per site will allow local areas to estimate a proportion of 50% with precision roughly $\pm 5\%$ for outcomes of interest – for example, the proportion of eligible participants who engage in unprotected sex, share needles/syringes, or

have never been tested for HIV. The larger national sample of 12,500 respondents per cycle should provide adequate power and precision to evaluate most behaviors of interest and by the major demographic variables shown below. The numbers in the table are based on estimates from other studies of MSM, IDU, and heterosexuals at risk. Of note: the MSM sample is likely to have a higher proportion of whites than IDU or HET; the IDU sample is likely to be older than MSM or HET samples, and predominantly male; the HET sample is likely to have high proportions of Blacks and Hispanics due to the inclusion of poverty as a factor in determining where to sample.

	MSM Cycle	IDU Cycle	HET Cycle
TOTAL	12,500	12,500	12,500
Hispanic	3,300	2,500	3,500
Black	2,200	6,250	4,500
White	5,600	3,125	3,000
Other	1,400	625	1,500
Male	12,500	8,875	6,250
Female	0	3,625	6,250
18 – 34 years of age	7,125	2,500	6,875
35 years and older	5,375	10,000	5,625

Expected response rates

Response rates for venue-based, time-space sampling are largely dependent on how many people accept the approach and meet the eligibility criteria; among those who do accept and are found eligible, participation rates are expected to be high (Diaz, 2001; Muhib, 2001; Valleroy, 2000). Response rates for the MSM cycle using venue-based, time-space sampling is expected to be approximately 65%. In RDS, it is expected that one-half to two-thirds of coupons given to recruiters are returned by potential participants (Heckathorn, 2002; Johnston, 2006; Ramirez-Valles, 2005; Stormer, 2006; Wang, 2004; Yeka, 2006). A benefit of peer-driven sampling is that recruiters are told, generally speaking, what the eligibility criteria are in order that they can recruit eligible participants. Response rates for the IDU and HET cycles using RDS are expected to be between 68% and 76%. Further details and calculations are provided in Section B3 below.

2. Procedures for the Collection of Information

Main steps in data collection

NHBS collects survey data through a computer-assisted interviewer-administered questionnaire. The survey is interviewer-administered in part to ensure that participants understand the sometimes complex language used to describe different behaviors, particularly in the IDU and HET populations. In addition to concerns for the respondents, the complexity of the instrument—with skip patterns and logic checks—necessitates a computer-assisted interview. Because data collection for the MSM cycle takes place in public venues, handheld computers are the most practical. Given the public venues where data collection takes place (particularly for the MSM cycle), it is not practical or safe to have the respondent complete a self-administered survey on the handheld computer.

Venue-based, time-space sampling

Data collection begins with the eligibility screener. The interviewer administers the eligibility screener to the participant using the handheld computer. If the sampled man is not eligible, he will be thanked for his time and interest in the project. If he is eligible, the interviewer will obtain informed consent by reading the consent form and obtaining oral agreement to participate (Attachment 8). During the consent process, each surveillance activity is described and the participant must indicate which activities he agrees to participate in. These include (as applicable to local procedures): 1) participating in the NHBS survey; 2) HIV testing; 3) other tests provided locally; and 4) storing leftover sera. After obtaining consent, the interviewer will administer the survey (Attachment 2).

When the survey is completed, those who agreed to have an HIV test will be provided HIV prevention counseling in accordance with local guidelines. Specimens will be collected according to local laboratory procedures; NHBS grantees may choose to conduct HIV testing using standard blood-draw procedures, collection of oral-mucosal transudate, or using rapid HIV tests. If the rapid test indicates a preliminary positive result then a blood or oral-mucosal transudate sample will be collected for the confirmatory test. Mechanisms for returning results to participants will be determined locally; follow-up appointments will be set prior to the participant being paid their incentives, which is the last step in NHBS participation.

Respondent-driven sampling

Persons who receive a coupon (Attachment 11) to participate in NHBS cycles using RDS will be asked to make an appointment to take the survey; walk-in hours are usually available (determined locally). When a potential respondent comes to the field site, their coupon will be assessed to ensure it is valid, using the Coupon Manager program described in Section A3. Once the coupon is validated, the interviewer will explain to the potential participant that they are being asked to participate in a health survey, that they will be screened for eligibility first, and that not all persons will be eligible (Attachment 2). All persons with a valid coupon will be administered the eligibility screener (Attachment 2). If the person is not eligible, he or she will be thanked for their time and interest in the project but will not be interviewed or asked to recruit others. If eligible, the interviewer will obtain informed consent by reading the consent form and obtaining oral agreement to participate (Attachment 8). During the consent process, each surveillance activity is described and participants must indicate which activities they agree to participate in. These include (as applicable to local procedures): 1) participating in the NHBS survey; 2) HIV testing; 3) other tests provided locally; and 4) storing leftover sera. After obtaining consent, the interviewer will administer the survey (Attachment 2).

When the survey is completed, those who agreed to have an HIV test will be provided HIV prevention counseling in accordance with local guidelines. Specimens will be collected according to local laboratory procedures; NHBS grantees may choose to conduct HIV testing using standard blood-draw procedures, collection of oral-mucosal transudate, or using rapid HIV tests. If the rapid test indicates a preliminary positive result then a blood or oral-mucosal transudate sample will be collected for the confirmatory test. Mechanisms for returning results to participants will be determined locally; follow-up appointments will be set prior to the participant leaving the field site.

After the NHBS survey and HIV testing are completed, the interviewer will ask the participant if he or she would be willing to recruit other participants for a small incentive. After a brief training on the recruitment process (Attachment 12), those who agree to recruit their peers will be given three coded, non-replicable coupons (Attachment 11). The participant will be told to give one coupon to each of 3 peers meeting the eligibility criteria. Each coupon will have the local NHBS project name and location(s) printed on it with a brief explanation of the project. The code on the coupon will be linked to 1) the Survey ID of the participant the coupon is issued to (i.e., the recruiter) and 2) the Survey ID of the participant returning the coupon (i.e., the recruit). The coupon information is entered and stored in the Coupon Manager program. After receiving coupons and recruiter training, the participant is paid their incentives and given instructions about returning for the recruitment rewards. This ends the data

collection procedures for NHBS using RDS.

Quality Control

Data quality is ensured by use of computer-assisted interviewing, interviewer training and monitoring, site visits, and data editing. Computer-assisted interviewing improves data quality in several ways:

- a) Interviewer errors are reduced because interviewers do not have to follow complex routing instructions; the computer does it for them.
- b) Respondent errors are also reduced. Consistency checks are programmed into the questionnaire so that inconsistent answers or out of range values can be corrected or explained while the interview is in progress.
- c) Use of computer-assisted interviewing also reduces coding and coding errors, which makes it possible to prepare the data for analysis faster and more accurately.

A multi-day interviewer training will occur prior to implementation of each cycle's data collection. This training will cover general interviewing skills, sampling and recruitment protocols, and a question-by-question review of the survey to ensure interviewers understand the purpose of each question and how it should be read and coded in the handheld computer. Interviewers will have opportunities to practice administering the survey. The training will also address interviewer integrity, underscoring the importance of collecting quality data and the consequences of inappropriate behaviors, including falsification of data.

During the data collection period, interviewers will be monitored by the field supervisors or other management staff. Approximately 10% of each interviewer's interviews will be monitored. Feedback will be provided for areas of improvement or incorrect implementation of the protocol. Monitoring for venue-based, time-space sampling will also include recruitment procedures. Monitoring for RDS will also include recruiter training. Supervisors will provide feedback on ways to help improve response rates.

CDC will conduct at least one site visit to each grantee per cycle. The purpose of the site visit is to monitor adherence to the NHBS protocols, observe interviews, and obtain feedback on study procedures.

In addition to the checks provided through the computer-assisted interview program, editing of the data will be performed by CDC, performing extensive checks of the quality of the data files. Monthly processing allows for identification of errors in programs or procedures.

3. Methods to Maximize Response Rates and Deal with Nonresponse

Response rate calculations

Venue-based, time-space sampling

Response rates for venue-based, time-space sampling are largely dependent on how many people accept the approach and meet the eligibility criteria; among those who do accept and are found eligible, participation rates are expected to be high (Diaz, 2001; Muhib, 2001; Valleroy, 2000). Based on previous studies using venue-based, time-space sampling, we expect approximately 20% of men to refuse the approach. Among those who accept the approach, only 10% will be ineligible as we do not have strict eligibility screening criteria. We expect approximately 15% of men, after learning what the study entails, will refuse participation. Data loss with the handheld computers is likely to happen, although should not affect more than 1% of cases. Given these estimates, in each city, project staff will need to approach 850 men and screen 680 of them; with 10% ineligible and 15% of eligibles refusing to participate, these 680 men screened would result in 520 completed surveys. Even with a 1% data loss of completed surveys, sample size goal can be met.

Unweighted response rates are calculated as a ratio of the number of completed cases to the number of in-

scope sample cases, based on guidance from AAPOR. For NHBS-MSM, the calculations based on 500 completed surveys and using the estimated outcomes noted above result in an unweighted response rate of 67% (see Attachment 13 for calculations).

Respondent-driven sampling

Previous studies using RDS find that one-half to two-thirds of coupons given to recruiters are returned by potential participants (Heckathorn, 2002; Johnston, 2006; Ramirez-Valles, 2005; Stormer, 2006; Wang, 2004; Yeka, 2006). Thus the sample size does not, in practice, accrue exponentially as the design suggests. However, one of the benefits of peer-driven sampling is that recruiters are told, in general terms, what the eligibility criteria are so that they can recruit eligible participants. Thus, it is expected that at least 90% of those returning with a coupon will be eligible (Ramirez-Valles, 2004). In addition, survey completion rates among those found eligible is high.

For the IDU and HET cycles, the response rate calculations based on 500 completed surveys and using the estimated outcomes noted above result in response rates of 68 – 76% (see Attachment 13 for calculations).

Expectations for more standard survey methods—such as use of probability sampling and response rates in excess of 80%—cannot be applied to NHBS for multiple reasons. Given that the three populations targeted by NHBS are considered hard to reach, either because their behaviors are illegal or not socially normative, there is no “gold standard” probability sampling method that can be used. The venue-based and peer-referral sampling methods used in NHBS were developed precisely to reach these populations and our projected response rates are within the range of those achieved in previous studies. Bias in the samples can be evaluated; weighting methods for both venue-based, time-space sampling and RDS also help adjust for bias in the sampling strategies. Despite the limitations, the expected response rates for the three NHBS cycles will be adequate for the purposes of monitoring HIV-related behaviors among high risk populations and using the information to evaluate prevention programs.

Methods to maximize response rates

Refusal rates for NHBS are adversely affected by the anonymous nature of the survey (no follow-up contacts) and the sensitive nature of the questions. Aspects of the recruitment methods can also adversely affect response rates; however, these methods also offer ways to maximize response rates, as described below. Monitoring of response rates will be done through conference calls on a weekly basis with each grantee and monthly with all grantees together, offering the opportunity to share strategies for improving response rates. Recruitment statistics and sample demographics will be reported to CDC on a weekly and monthly basis, respectively.

Research indicates that incentives help raise response rates for long, sensitive, in-person surveys (Kulka, 1995). Incentives are useful for groups that are hard to interview, including those for whom conventional means of motivation may not work, including disenfranchised populations such as those who are targeted for NHBS. In addition, these populations (particularly MSM and IDU) are often surveyed and incentives for survey participation are the norm. Therefore, the use of incentives for NHBS is critical to achieving acceptable response rates.

Venue-based, time-space sampling

In order to maximize response rates for the MSM cycle, efforts are placed on how the initial approach is conducted. Training for interviewers will focus on effective communication (enthusiasm, rapport building in a short period of time) and ability to communicate the value of NHBS (persuasion); demonstrated motivation, persistence, and high energy are critical for successful recruiting when doing intercepts. The training will focus on methods for averting refusals and methods to seek participation of sampled persons who are initially reluctant, including role-playing of different scenarios where the respondent may be

difficult to recruit. The basic recruitment philosophy is “respectful persistence;” interviewers are trained to know when to stop. The use of other staff for refusal conversions is not done in NHBS.

Venue-based sampling offers the benefit of having larger numbers of the target population in one place but a disadvantage is that because people attend venues for reasons other than participating in surveys, the rate of refusals—both for the initial approach and to complete the survey—can be high. In limited cases, respondents who are interested in the survey but are not able to complete it at the time of the intercept will be offered an appointment to do the survey on another day. The use of these “other day appointments” will be limited as it is expected that return rates for the appointments will be low.

Respondent-driven sampling

Because RDS is a peer-referral mechanism, the field staff have little control over sampling methods and sample accrual, other than the recruitment of seeds. One advantage of RDS, however, is that peer referral and endorsement of the project are likely to have a positive impact on participation rates. To maximize coupon return rates, peer recruiters are trained on how to recruit their peers and given important information about the study (Attachment 12). The dual incentive structure (i.e., providing incentives to recruiters for successful peer referral) also helps to maximize response rates. Field site logistics may also maximize response rates; field sites will be located in areas that are easy to get to by public transportation and hours of operation will be set to meet the needs and schedules of the population of interest.

Assessing non-response bias

The use of an eligibility screener will allow comparison of the demographic and eligibility-related behavioral data on those who are eligible and ineligible. The venue-based, time-space sampling method is not conducive to collecting information from those who refuse the approach. However, information on those who accepted the approach but do not consent to participate is available and can be used to assess bias in terms of agreement to participate. To assess non-response bias in RDS, the number of those who are offered a coupon and refused will be tracked, by asking recruiters whether anyone had refused a coupon, why they refused, and demographic characteristics of the refusers. Due to the anonymous nature of NHBS, participants cannot be re-contacted to encourage them to give out coupons nor have the recruiters come in to report on coupon refusals; following up with participants has improved coupon return rates in other studies (Draus, 2005; Ramirez-Valles, 2005). Those recruiters who do come in and have not had all their recruits come in will be reminded to encourage them to do so.

Generalizability

Venue-based, time-space sampling

The data collected during the MSM cycle can be weighted. Selection probabilities are based on venue selection and day-time period selection, as well as the response rates and frequency of the respondent’s attendance at venues (MacKellar, 1996). Thus, for the MSM cycle, data will be generalizable to men meeting the eligibility criteria who attended the venues on the sampling frame during the surveillance data collection period. Although some MSM do not attend these types of venues, several surveys suggest that most attend one or more types of venues included in our sampling frames. Thus, the breadth of types of venues included in the frame helps increase the external validity of the findings.

Respondent-driven sampling

The statistical theory upon which RDS is based suggests that if peer recruitment proceeds through a sufficiently large number of waves, the composition of the sample will stabilize, becoming independent of the seeds from which recruitment began, and thereby overcoming any bias the nonrandom choice of seeds may have introduced (Heckathorn, 1997; Heckathorn, 2002). This stable sample composition is termed the “equilibrium.” Experience with RDS indicates that equilibrium can be achieved in approximately 6 waves. Another factor that has an impact on how quickly equilibrium can be reached is called “homophily.” This refers to the degree of insularity, or in-group preference for recruitment. The

more insular a group, the more likely they are to recruit others like themselves and it would take more waves to reach equilibrium. Having a diverse set of seeds will help ensure diversity of networks with regards to their degree of insularity included in the initial waves.

The sampling frame for RDS is created during the sampling process. The frame is based on specific information collected from participants regarding who recruited them and their network size. Recruitment is tracked by the use of coupons; recruiters can be linked to those they have successfully recruited using the Coupon Manager software. Information on who recruited whom is used to calculate cross-group recruitment proportions. The participant's personal network size is based on how many people they know who fit the eligibility criteria for the project.

To calculate the population estimates and variances derived from RDS, several sources of bias are taken into account: 1) the differences in effective recruitment across groups (those more effective at recruitment would be overrepresented in the sample); 2) homophily (groups that are more insular would be overrepresented because it is more difficult to "break out" of those groups; and 3) the network size (groups with larger networks would be overrepresented because more recruitment paths lead to their members). The population estimates derived from RDS are applicable to the underlying eligible population of interest (i.e., IDU or heterosexuals at risk).

Evaluation

An evaluation of each cycle will be conducted at its conclusion. This evaluation will encompass survey procedures and results. Relevant findings from these evaluations will be incorporated into the design of the next round of NHBS. Specific findings related to analysis of the data collected will be made available to users of the data.

4. Tests of Procedures or Methods to be Undertaken

The data collection instruments were developed using questions from previous CDC surveillance projects, and expert advisors (Attachment 9). Since most questions comprising the data collection instruments have been previously tested and used, only internal testing by CDC staff was needed. CDC staff tested the skip patterns and responses both electronically and using paper versions of the data collection instruments. CDC staff also conducted mock interviews of CDC staff members using the handheld computers to interview other CDC staff.

5. Individuals Consulted on Statistical Aspects and Individuals Collecting and/or Analyzing Data

Consultants on Statistical Aspects

Lillian Lin, PhD

Team Leader, Statistics Team
Centers for Disease Control and Prevention
1600 Clifton Rd, NE MS E-48
Atlanta, GA 30333
Phone: (404) 639-2990
Email: LLin@cdc.gov

Steve Thompson, PhD
Department of Statistics and Actuarial Science
Simon Fraser University
8888 University Drive
Burnaby, BC V5A 1S6 CANADA
phone 604 268 6591
email thompson@sfu.ca

John Karon, PhD

Statistician
Centers for Disease Control and Prevention
1600 Clifton Rd, NE MS E-48
Atlanta, GA 30333
Phone: (404) 639- 2020
Email: JKaron@cdc.gov

Douglas Heckathorn, PhD
Professor, Department of Sociology
344 Uris Hall
Cornell University
Ithaca, NY 14853-7601
phone: 607.255.4368
e-mail: douglas.heckathorn@cornell.edu

Myron Katzoff, PhD

Statistician
3311 Toledo Road Room 3117
MS P-08
Hyattsville, Maryland 20782
Phone:301-458-4307
Email: MKatzoff@cdc.gov

Grantees

Funding for NHBS is expected to occur during the first quarter of FY08 through cooperative agreements. This cooperative agreement has eligibility limited to the directly funded city health departments containing the following Divisions of Metropolitan Statistical Areas (MSAs): Los Angeles, CA (Los Angeles Division); San Francisco, CA (San Francisco Division); Chicago, IL (Chicago Division); New York City, NY (New York Division); Philadelphia, PA (Philadelphia Division); Houston, TX ; and the State health departments containing the following MSAs or Divisions: Phoenix, AZ; San Diego, CA; Denver, CO; Hartford, CT; Washington DC (Washington Division); Miami, FL (Miami Division); Atlanta, GA; New Orleans, LA; Boston, MA (Boston Division); Baltimore, MD; Detroit, MI; St. Louis, MO; New York City (Newark Division and Nassau Division); San Juan, PR; Memphis, TN; Dallas, TX (Dallas Division); Virginia Beach, VA; Seattle, WA (Seattle Division). The actual grantees will be determined depending on available funds and evaluation of the applications

CDC Project Staff

All CDC project staff can be reached at the following address and phone number:
Behavioral and Clinical Surveillance Branch
Division of HIV/AIDS Prevention
Centers for Disease Control and Prevention
1600 Clifton Rd, NE MS E-46
Atlanta, GA 30333
Phone: (404) 639-2090

Amy Lansky, PhD, MPH
Team Leader, Behavioral Surveillance Team
Email: ALansky@cdc.gov

Stephanie Behel, MPH
Epidemiologist
Email: SBehel@cdc.gov

Melissa Cribbin, MPH
Epidemiologist
Email: MCribbin@cdc.gov

Paul Denning, MD, MPH
Medical Epidemiologist
Email: PDenning@cdc.gov

Elizabeth DiNenno, PhD
Behavioral Scientist
Email: EDiNenno@cdc.gov

Amy Drake, MPH
Epidemiologist
Email: ADrake1@cdc.gov

Teresa Finlayson, MPH, MA
Epidemiologist
Email: TFinlayson@cdc.gov

Tricia Hall, MPH
Public Health Analyst
Email: THall1@cdc.gov

Laura Kearns, MPH
Public Health Advisor
Email: LKearns@cdc.gov

Deborah Lee, MPH
Public Health Analyst
Email: DLee1@cdc.gov

Patrick Sullivan, DVM, PhD
Branch Chief, Behavioral and Clinical
Surveillance Branch
Email: PSSullivan@cdc.gov

List of Attachments: Supporting Statement Parts A and B

Attachment Number	Document Description
1	Public Health Service Act
2A / 2B	2A Eligibility Screener / 2B Core Questionnaire
3	NHBS Cycle Overview
4	Federal Register Notice
5	Comments Received on Federal Register Notice
6	List of Consultants in the Development of NHBS
7	Assurance of Confidentiality for HIV/AIDS Surveillance Data
8	Model consent form
9	Justification for and Source of NHBS Questions
10	Eligibility criteria
11	Model coupon
12	Recruiter training script
13	Response rate calculations
14	References