Use of Rapid Behavioral Assessments to Determine the Prevalence of HIV Risk Behaviors in High-Risk Populations

Kathleen M. Gallagher, DSc, MPH[a]
Paul D. Denning, MD, MPH[a]
Denise R. Allen, PhD, MPH[a]
Allyn K. Nakashima, MD[a]
Patrick S. Sullivan, DVM, PhD[a]

SYNOPSIS

Rapid HIV Behavioral Assessment (RHBA) is a method for collecting much-needed information about sexual, drug-use, and HIV testing behaviors from people at high risk for HIV infection in areas with low-to-moderate HIV prevalence.

During 2004, RHBAs were conducted in seven small to moderate-sized cities in the United States during Gay Pride events. Anonymous 10-minute interviews were administered to eligible attendees using handheld computers. Depending on the city, between 47% and 97% of individuals approached agreed to hear more about the survey. Enrollment rates exceeded 90% in every location.

RHBAs conducted during 2004 were well received by the gay and public health communities. They were simple to organize and administer, flexible, and cost-efficient, suggesting that this approach holds promise for expansion to additional high-risk groups and geographic locations. RHBAs can provide state and local health departments with demographic and behavioral data that can be used to design, target, and evaluate local HIV prevention programs.

[a]Division of HIV/AIDS Prevention, National Center for HIV, STD, and TB Prevention, Centers for Disease Control and Prevention, Atlanta, GA

Address correspondence to: Kathleen M. Gallagher, DSc, MPH, Division of Viral Hepatitis, Centers for Disease Control and Prevention, 1600 Clifton Rd., MS G-37, Atlanta, GA 30333; tel. 404-718-8557; fax 404-718-8585; e-mail: <kxg7@cdc.gov>.

The annual number of new HIV infections in the United States was estimated to have peaked at 160,000 in the mid-1980s and declined to about 40,000 in the early 1990s.[1–3] Since that time, however, the number of new HIV infections that occur annually has remained relatively constant.[3] As a result, the Centers for Disease Control and Prevention (CDC) developed a five-year HIV Prevention Strategic Plan to further reduce the number of new HIV infections.[4]

As part of this plan, four national goals were identified to reduce by half the annual number of new HIV infections in the United States by 2005. One of these goals is to strengthen the national capacity to monitor the HIV epidemic to better direct and evaluate prevention efforts. In 2002, as an initial step to meet this goal, CDC awarded funds to state and local health departments to develop and implement a surveillance system to monitor behaviors that place people at risk for HIV infection. The health departments with jurisdiction for the 25 metropolitan statistical areas (MSAs) with the highest number of people living with AIDS received funding. The geographic areas included in this National HIV Behavioral Surveillance System (NHBS) account for about 60% of AIDS cases reported through 2003.[5]

In its first cycle, NHBS targeted men who have sex with men (MSM). Subsequent cycles will survey injecting drug users (IDUs) and heterosexuals at risk for acquiring HIV infection. Plans are for NHBS to cycle repeatedly through these three at-risk populations. Participation in NHBS has focused on those MSAs with the highest HIV morbidity. As a result, locales with lower overall HIV morbidity are not eligible to receive NHBS funding, even though some subpopulations in these locales might have high rates of HIV infection. In a 2004 survey of states not funded for NHBS (e.g., lower morbidity states), responding non-NHBS states reported behavioral surveillance data as their top need for supplemental HIV surveillance data, and especially reported the need for information on risk behaviors, use of prevention services, and access to care issues.[6]

OBJECTIVES

To meet the need for behavioral risk information of these states with low-to-moderate HIV/AIDS morbidity, the CDC developed a Rapid HIV Behavioral Assessment (RHBA) approach. Because the initial round of NHBS focused on MSM, we conducted our first round of RHBA in this population. The principal objective of these assessments was to provide state and local health departments with demographic and behavioral data about MSM that they could use to design, target, and evaluate HIV prevention programs. Specific data about risk behaviors are not the focus of this article. Rather, the purposes of this article are to describe the methods used in RHBAs; discuss the role of RHBAs in monitoring HIV risk, HIV testing, and prevention behaviors; summarize the characteristics of respondents to RHBAs in 2004; and make recommendations for future uses of RHBAs.

METHODS

RHBAs were designed to collect data about behavioral risks for HIV acquisition among high-risk populations using a questionnaire similar to the NHBS survey, but to adapt the data collection methods for use in geographic areas with lower HIV morbidity and fewer monetary and technical resources available for behavioral surveillance. A primary goal was to collect information that would be useful to the local prevention planning process.

The state health department conducted the RHBAs with technical assistance from CDC staff. They approached it by identifying an event (e.g., a Gay Pride event) that would have a high number of MSM attendees. Trained interviewers recruited a convenience sample of people attending the event, using systematic sampling from the flow of attendees. An interviewer administered a short questionnaire (taking approximately 10 minutes) to consenting respondents, and collected responses in handheld computers. It was important that, within these basic guidelines, the recruitment strategies were flexible enough to accommodate local circumstances.

To determine the feasibility of this approach, we field-tested the RHBA at the Finals of the International Gay Rodeo Association in Tulsa, Oklahoma, in October 2003. The survey was well received by the gay community, volunteers, and local health department staff. Based on our field experience and interviewer feedback, minor modifications were made to the questionnaire and recruitment methods.

To solicit interest in the RHBAs, we sent invitation e-mails in March 2004 to all 40 health departments not currently funded to conduct NHBS, asking them to consider conducting an RHBA at their local Gay Pride event (which usually takes place in June or July). The e-mail described the purpose of the assessment, findings from the pilot study, and the general attributes of the assessment.

Areas interested in participating in the RHBAs were assigned CDC event leaders, whose primary responsibility was to coordinate with local health department personnel to arrange the logistical details needed to

conduct the assessment. Local health department staff members were responsible for organizing all local logistics, including obtaining any necessary health department approvals, recruiting volunteer interviewers, and obtaining a meeting space to conduct training. Most health departments chose to garner the local Gay Pride committee's support in conducting the survey, which facilitated obtaining booth space at the event. In addition, health departments were encouraged to partner with a local community-based organization in sponsoring or administering the survey and developing a survey name and logo. In some cases, health departments chose to advertise the survey in local MSM venues, publications, and other media outlets so that attendees, if approached, would know that the local gay community and public health organizations endorsed the survey.

CDC event leaders handled all technical aspects of the RHBAs and organized a CDC team that would travel to the site to conduct training and provide technical support. This included modifying the survey instrument so that it met local data needs, and developing eligibility criteria and recruitment methods in conjunction with local health department staff. The CDC team also prepared all materials needed for training the local interviewers and for conducting this training prior to the event. CDC provided all necessary computer hardware and software needed to conduct the survey at the event. At the completion of interviewing, CDC staff produced a Statistical Analysis Software™ (SAS) dataset that contained all recruitment and interview data.

Recruitment and eligibility

Interviewers intercepted males (including male-to-female transgenders and cross-dressers) attending the selected Gay Pride event and asked them to participate in the survey. Recruitment methods for each local event were developed in conjunction with local health department staff. People who were approached were then categorized as accepting the intercept, rejecting the intercept, having already being interviewed, or having already refused.

If individuals accepted the intercept, interviewers assessed their eligibility to be included in the survey: the respondents needed to be 18 years of age or older and male at birth. However, males did not need to identify themselves as gay or bisexual to be included in the survey. In some areas, eligibility was restricted to residents of the state in which the survey was conducted.

All those deemed eligible were then invited to participate in the survey and required to give verbal consent before beginning the interview. To protect participants' confidentiality, interviewers were instructed to conduct the interviews privately in locations where other people could not overhear the conversation. Data were collected anonymously and no personal identifiers were collected. RHBAs are a public health surveillance activity and are not considered by CDC to be research.[7] Accordingly, CDC Institutional Review Board (IRB) approval was not required. Similarly, none of the participating state health departments required local IRB approval to conduct the RHBAs.

Data collection

CDC developed the anonymous, 10-minute, standardized survey instrument, and Questionnaire Development System (QDS™)[8] was used to develop the standard questionnaire and corresponding database. Changes could be made to the questionnaire to adapt it for local use if agreed upon by the CDC and local staff. Trained interviewers administered the survey using handheld personal computers. Using this type of data collection instrument eliminated the need for subsequent data entry, thereby allowing for the creation of a "real-time" dataset.

For each individual who agreed to be interviewed, data were collected on demographics, sexual behaviors, injection and non-injection drug use, diagnoses of sexually transmitted diseases, HIV testing, and access to and use of local HIV prevention services. The Figure lists the specific data elements collected for each of these domains.

Periodically throughout the event, data collected from the interviews were downloaded from the handheld personal computers to the QDS data warehouse (which was housed on a laptop computer on-site). After the completion of all interviews, the data was downloaded and an SAS dataset was created and given to local health department staff.

RESULTS

A total of seven state health departments conducted RHBAs during June and July of 2004. Table 1 lists the event locations, a description of the event type and duration, the estimated number of attendees, the number of people intercepted, and the number of people enrolled and interviewed. Most assessments were conducted at local Gay Pride festivals, and estimated attendance varied widely from a low of 100 to a high of 400,000. The number of completed interviews per event ranged from 39 in Bismarck, North Dakota, to 386 in Minneapolis. Intercept acceptance rates (number of people approached/number that completed eligibility screening) ranged from 47% to 98%. Enrollment rates

Figure. Data elements collected during Rapid HIV Behavioral Assessments (RHBAs)

Subject area	*Data elements collected*
Demographics	• Gender • Race • Ethnicity • Locale of residence • Age • Country of birth • Level of education • Sexual orientation
Sexual behaviors	• Number of male sex partners in last 12 months • Type of anal sex (insertive/receptive) • Unprotected anal sex • Type of partners (steady/casual exchange) • Venues where they met partners • Knowledge of partner's HIV status • Use of recreational drugs/alcohol before or during sex
Injection drug use	• Injection history • Injection frequency • Types of drugs injected • Needle sharing
Non-injection drugs	• Non-injection drug use in past 12 months • Frequency of use • Types of drugs used
HIV testing	• Testing history • Reasons for not getting an HIV test
STD diagnosis	• Diagnosis of STD in past 12 months
Assessment of prevention services	• Receipt of condoms, bleach kits, literature, referral for HIV or STD testing • Use of prevention services • Participation in individual or group HIV prevention sessions

(number interviewed/number eligible) at all events were high and ranged from 92% to 100%.

A total of 1,093 people were interviewed during the events. Table 2 summarizes the demographic characteristics of those interviewed during the assessment. Most of the men surveyed (75%) were white. About 10% of the men surveyed were black or African American, 6% were Hispanic, and 5% were multiracial. Survey participants were of varying ages, with 38% aged 18–29 years, 27% aged 30–39 years, 23% aged 40–49 years, and 12% 50 years of age or older. The vast majority of respondents (96%) were born in the United States. Ninety-six percent of the respondents had graduated from high school, with 34% having attended some college or a vocational school, 29% holding a college degree, and 15% earning a graduate degree.

Because any male attending the Gay Pride event could participate in the survey, and there were no exclusions based on sexual identity, a substantial minority (12%) of the men interviewed self-identified as "heterosexual." An additional 7% of the men surveyed identified themselves as bisexual. And, as expected, the majority (79%) of survey participants identified themselves as gay or homosexual. Eighty-four percent of the respondents reported that they had had sex with a man in the past 12 months; of these respondents, 65% reported having more than one partner during this time period. Of respondents who reported having sex with a man in the past 12 months, 23% said they had unprotected anal intercourse, suggesting that a substantial proportion of those surveyed engaged in behaviors that can lead to HIV transmission.

Table 1. Sites participating in Rapid HIV Behavioral Assessments (RHBAs) during Gay Pride season, June–July 2004

Location	*Type of event/duration*	*Estimated attendance*[a]	*Number intercepted*	*Number accepted intercept*	*Intercept acceptance rate (percent)*	*Number eligible*	*Number enrolled*	*Enrollment rate among eligibles (percent)*
Iowa City, IA	Festival—1 day	400	118	105	89	104	101	97
Indianapolis, IN	Parade/festival—1 day	4,000	281	199	72	188	188	100
Salt Lake City, UT	Festival—1 day	50,000	114	97	85	96	95	99
Portland, ME	Festival—4 hours	750	259	221	85	217	209	96
Manchester, NH	Block party—4 hours	200	132	86	65	79	75	95
Minneapolis, MN	Festival—2 days	400,000	915	426	47	418	386	92
Bismarck, ND	Camp-out—1 day	100	43	42	98	40	39	98

[a]Includes both males and females

Table 2. Demographic characteristics of male interviewees, Rapid HIV Behavioral Assessments (RHBAs), Gay Pride events in seven cities, June–July 2004

Characteristics	*Number (percent)*
TOTAL	1,093 (100)
Age	
18–24	249 (23)
25–29	159 (15)
30–39	296 (27)
40–49	248 (23)
50+	129 (12)
Race/ethnicity	
White	812 (75)
Black	94 (9)
Hispanic	64 (6)
Asian/Pacific Islander	10 (<1)
American Indian/Alaskan Native	9 (<1)
Multiracial	57 (5)
Other/missing	36 (3)
Born in U.S.	
Yes	1,040 (96)
No	42 (4)
Sexual identity	
Gay/homosexual	855 (79)
Bisexual	78 (7)
Straight/heterosexual	132 (12)
Other	14 (1)
Education level	
Less than high school	38 (4)
Graduated high school	204 (19)
Some college/technical school	365 (34)
College degree	310 (29)
Graduate degree	162 (15)
Sex with man in past 12 months	915 (84)
Number of male sex partners in the past 12 months	
One	320 (35)
More than one	595 (65)
Unprotected anal intercourse with man in past 12 months	
Yes	206 (23)
No	709 (77)

Operational issues

Because of support from community organizations, the brevity of the survey, and its anonymous nature, the survey was almost universally welcomed by Gay Pride attendees, and enrollment rates were high at all of the RHBAs conducted.

Rain occurred during a few of the Gay Pride events, making survey management more difficult than originally anticipated. Future surveys should plan in advance for weather conditions. Although inclement weather may have also influenced event attendance, we observed that events were well attended despite the rain, and response rates in areas that experienced inclement weather were still high.

Because most Gay Pride events take place during a fairly short period of time (generally a few hours), maximizing enrollment during this period is essential and can be best achieved by having a large number of interviewers and a brief survey. We found that one of the rate-limiting factors for conducting a larger number of interviews was the number of interviewers (and the corresponding handheld computers) available at any given time. At many of the larger events, having additional volunteers available during the busiest hours would most likely have increased the number of interviews conducted.

Although monetary incentives were used in two events, enrollment rates did not appear to differ between sites that used incentives and those that did not. Sites using monetary incentives required a tracking system for their disbursements and, as a result, needed to divert resources for this activity. Because the use of incentives did not appear to result in higher enrollment rates, and fewer resources were available to conduct interviews, sites should consider whether using monetary incentives is a cost-effective strategy for future rapid assessments.

Uses of rapid assessment data

The primary objective of the RHBAs was to provide state and local health departments with data about MSM that they could use to design, target, and evaluate local HIV prevention programs. Data collected about sexual and drug-use practices can help health agencies and community organizations develop HIV prevention programs that address specific risk behaviors. This information can be combined with demographic information to target those individuals who are at highest risk for HIV infection. Data collected on receipt and use of prevention services can help to evaluate whether or not local prevention programs are reaching their intended audience. Information about HIV testing behaviors can identify reasons for seeking, avoiding, or delaying HIV testing. This data can, in turn, be used to develop new or enhanced strategies for expanding HIV testing in traditional or nontraditional settings in line with CDC's new Advancing HIV Prevention Initiative.[9]

As with any surveillance data, dissemination of the results of these assessments to local consumers of the data is important to ensure that evidence-based HIV prevention decisions are made. Health departments that participated in the 2004 RHBAs reported disseminating the information collected in a variety of ways.

Most reported that the data collected was tabulated and presented to their local HIV Community Planning Group (CPG) as well as other interested community and public health organizations. Sites also reported using this data in their state's HIV prevention plan or to support needs-assessment activities. At least one participating state posted data on its health department web page so that it had more widespread availability (http://www.health.state.mn.us/divs/idepc/dtopics/stds/tcmenshealth.html).

The data collected through these RHBAs are subject to several limitations. First, because these surveys were convenience samples of people attending Gay Pride events, respondents may not have been representative of the broader MSM population living in the participating states. In particular, because the Gay Pride events tended to take place in large, urban areas, MSM from suburban or rural areas may have been underrepresented. Attendees at Gay Pride events may also have been more likely to include people who were more open about their sexual identity. Data regarding the age and racial distribution of participants suggests that a wide variety of ages were in attendance at these events, but that the large majority of respondents were white. This data most likely reflects the racial and ethnic mix of the MSM in the geographic areas in which these surveys were conducted. According to data from the 2000 U.S. Census, the percentage of the population that is white exceeds 87% in each of the states in which the RHBAs were conducted.[10] Also, even though enrollment rates were high in some areas, the number of people interviewed was sometimes very small. Data from these areas should be analyzed and interpreted with caution. Finally, because the survey was conducted by an interviewer, and some of the questions addressed sensitive sexual and drug-use behaviors, respondents may have been unwilling to admit to risky or illegal behaviors.

Despite these limitations, the RHBAs were successfully conducted in widely disparate circumstances and provided the participating health departments with important behavioral data that would not otherwise have been available.

FUTURE DIRECTIONS

The results of the RHBA used in these seven areas with low-to-moderate HIV morbidity demonstrated that this type of approach is accepted by the community, simple to organize and administer, flexible, and cost-efficient. Because CDC trained the volunteers, provided the necessary software and hardware to conduct the interviews, and offered scientific assistance, state health departments were not required to hire additional technical staff or purchase equipment. However, because the resources required to administer an RHBA are minimal and time limited, state and local health departments may choose to conduct future RHBAs independent of CDC if personnel and technical resources are available.

Based on the success of the RHBAs used during the 2004 Gay Pride season, we recommend that this approach be expanded to include additional geographic areas in subsequent years. Although we focused on Gay Pride events as a way to ensure high attendance of MSM, there may be other events during which large numbers of MSM or other high-risk populations gather that would be suitable for RHBAs. Expansion of the RHBA approach to other high-risk populations should be considered for gathering important behavioral data that would be helpful to local public health officials. In addition, voluntary rapid HIV testing could be offered during future RHBAs to increase respondents' knowledge of their HIV status. A rapid HIV antibody test can provide preliminary results in as little as 20 minutes and can be used in nonclinical settings.[11] A new version of that test, which uses oral fluid as a specimen rather than blood and eliminates the need for a finger-stick blood sample, was recently approved by the Food and Drug Administration.[12]

Although we specifically designed RHBAs to address data gaps in lower morbidity areas in the United States, we believe that this approach could be adapted to international settings, particularly resource-poor settings, where maintaining an infrastructure for ongoing behavioral surveillance may be difficult. The approach we have outlined here has proven to be an effective means of collecting high-quality data on a local HIV epidemic at a reasonable cost—critical attributes for the implementation of behavioral surveillance both domestically and internationally.[13]

The findings and conclusions in this report are those of the author(s) and do not necessarily represent the views of the Centers for Disease Control and Prevention.

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