

A Methodological Model for Rapid Assessment, Response, and Evaluation: The RARE Program in Public Health

ROBERT T. TROTTER, II
Northern Arizona University

RICHARD H. NEEDLE
ERIC GOOSBY

CHRISTOPHER BATES
U.S. Department of Health and Human Services

MERRILL SINGER
Hispanic Health Council, Inc.

Rapid assessment projects are expanding in the arenas of public health policy, planning, and program development in both developing and developed nations. This article reviews the methodological advances that have changed rapid assessment from a primarily "quick and dirty" approach for data collection into a public health tool for time-sensitive development of changes in intervention strategies, community-based organizational structure, program evaluation, and policy decisions. The methodological design of the Rapid Assessment, Response, and Evaluation Project, adopted by the Office of HIV/AIDS Policy (U.S. Department of Health and Human Services) in 1999, is presented as a model for using revised rapid assessment approaches within the context of public health policy development.

One version of rapid ethnographic assessment (Rapid Assessment, Response, and Evaluation [RARE]) has been adopted by the U.S. Surgeon General's Office of HIV/AIDS Policy (OHAP) for use in major metropolitan areas in the United States. RARE was constructed to meet the needs of U.S. cities to identify, target, and implement effective interventions to deal with the latest problems in the HIV epidemic, especially in African American and Hispanic communities. In contrast with many Third World situations, RARE capitalizes on the wide availability of public health data and existing HIV interventions in the United States. The RARE rapid assessment process is designed to complement strong traditions in formal surveillance, epidemiology, nationally funded research, and the developing field of prevention science. It is intended to become a new element in the national infrastructure for public

health prevention, treatment, and care and is not intended as a replacement for other research or surveillance endeavors.

A BRIEF HISTORY AND ILLUSTRATION OF RAPID ASSESSMENT

Rapid assessment relies on systematic ethnographic data collection and analysis techniques, whereby qualitative methods are complimented and reinforced by survey information and direct observation studies. Rapid assessment was first formally described in the mid-1980s (see Scrimshaw and Hurtado 1987; Bentley et al. 1988; Scrimshaw, Carballo, and Ramos 1991; Scrimshaw and Gleason 1992) along with other rapid assessment and evaluation models developed about the same time. These other approaches include rural rapid appraisal and participatory action research (Price 1990; Heaver 1991; Chambers 1992; Kachondham 1992; Bebe 1995; Whyte 1995; Park 1999). Rapid ethnographic assessment fits into the general model of other rapid assessment paradigms, including those used for rapid environmental appraisal (Oliver and Beattie 1996; Turner et al. 1996; Stohlgren et al. 1997), rapid epidemiology (International Epidemiological Association 1989), rapid disaster assessment (Malilay, Flanders, and Brogan 1997), and rapid assessment of biomedical conditions (Lee and Price 1995).

Rapid ethnographic assessment has a well-documented history of success in both international and domestic contexts (e.g., Vlassoff and Tanner 1992; Kirsch 1994; Dale et al. 1996; Kendall 1998). It has been used in developing countries as a substitute for survey and other quantitative data-collection processes and as a compliment to existing data sets and surveillance systems. Recent examples include research about malaria in the Philippines (Miguel et al. 1999), about HIV among young people in Cambodia (Tarr and Aggleton 1999), about pregnant women and sexually transmitted disease in Thailand (Kilmarx et al. 1998), about family planning in Burkina Faso (Askew et al. 1993), about preschool children exposed to pesticides in Mexico (Guillette et al. 1998), about sexually transmitted disease and HIV prevention in Turkey (Aral and Fransen 1995), and about injection drug use in Vietnam (Power 1996).

Rapid assessment is predominantly used as a complimentary data collection process in developed countries. In this role, it is seen as valuable in targeting conditions and contexts that are more highly concentrated than those identified by normal surveillance and epidemiological efforts. It provides information for spotting emerging conditions that are not yet visible in other

data sets and allows for the development of interventions successfully configured for local contexts, especially where local cultural conditions and values differ from the dominant cultural system. Examples of these types of rapid assessment projects include information on the health problems of homeless youth in Baltimore (Ensign and Gittelsohn 1998; Ensign and Santelli 1998), methamphetamine studies in Australia (Vincent et al. 1999), identification of priority health issues for health care management policy review in France (Lerer 1999), descriptions of HIV transmission conditions for six ethnocultural communities in Canada (Willms et al. 1997), assessment of home-based care for people with AIDS in the United States (McDonnell et al. 1994), and the RARE project.

The evolution of rapid assessment has been informed by many methodological discussions (Schwartz, Molnar, and Lovshin 1988; Kachondham 1992; Manderson and Aaby 1992a, 1992b; Nordberg et al. 1993; Vakil 1994; Bennett 1995; Harris and Jerome 1997; Harris, Jerome, and Fawcett 1997; Lambert 1998). These have led to consistent improvement in design and analytical procedures by identifying critical areas of strength and weakness for conducting scientifically sound rapid assessments. The primary methodological issues include the need for (1) appropriate qualitative and quantitative sampling frames and sample sizes to provide valid and reliable data, (2) the use of an integrated suite of methods to provide appropriate triangulation of data (confirmation from multiple methods, and multiple informants that identify all critical cultural viewpoints), (3) sound and systematic qualitative data analysis, (4) significant community participation, and (5) an evaluation component to determine the impact of the project. Each of these conditions has been incorporated in the RARE model described below.

THE STRUCTURE OF RARE

The RARE process incorporates five basic design elements. These are as follows: (1) the use of existing data sets (in this case, epidemiology, surveillance, planning, and research); (2) oversight by professionally trained ethnographers with experience in rapid assessment methodology; (3) a sound methodological suite accompanied by methodological training for local field teams; (4) direct involvement of community leaders and health providers; and (5) an evaluation component to assess intervention implementation, conducted by an independent evaluator.

RARE support materials consist of a guide for community leaders and advisory committees (Needle et al. 1999), a formal manualized training pro-

gram that provides local field teams with the tools necessary to carry out the objectives of RARE (Trotter and Needle 1999a), and a principal investigator (PI) guide for field team leaders (Trotter and Needle 1999b). The RARE guide provides local leaders with the philosophical and logistical information they need to decide if rapid assessment programs are appropriate for their situation. The methods manual contains methods training and data collection resource material to help assure that rapid assessment will be guided by strong scientific standards. And the PI guide summarizes logistics, field team management, support staff, and the general field management needs for the project.

RARE ASSUMPTIONS¹

The RARE model assumes there are a number of advantages for conducting rapid assessment and evaluation in public health contexts. It assumes that RARE projects will complement a substantial set of existing processes; it does not assume that RARE will be the only effort targeted at a particular problem. Given these assumptions, RARE provides the following advantages while assuming that it can be conducted within scientifically defensible parameters.

- **Speed:** A well-targeted RARE project can be accomplished in eight to ten weeks, including initiation of interventions.
- **Nonduplicative:** It complements ongoing processes rather than replaces them. It allows a more tightly targeted focus for information collection compared with broad area statistical or planning data collection.
- **Triangulation:** The use of multiple methods and multiple data sources increases the validity and defensibility of the results.
- **Focus on contexts and situations:** It provides the opportunity to fit solutions into the local context, with cultural competency and accommodation of local values and conditions.
- **Local involvement and community consultation:** It can be conducted and owned at a local level.
- **Pragmatic:** It is designed to be highly targeted (it does not do everything for everyone) and produces practical adaptable intervention recommendations that are correct for local conditions.
- **Evaluation:** It includes a necessary evaluation component to determine the effectiveness of both RARE and the recommended interventions.

In addition to these conditions, one further condition is critical to the success of RARE. Rapid assessment should be based on a firm foundation of

extensive local cultural knowledge. The RARE approach requires the inclusion of cultural experts as part of the field assessment and data collection team. These individuals have both local perspective and the methodological expertise to provide a valid and reliable assessment of data collected through rapid assessment techniques.

THE RARE METHODOLOGICAL MODEL

There has been a steady improvement in rapid assessment resulting from the methodological progress summarized in the general ethnographic literature (see especially Bernard 1998; J. J. Schensul and LeCompte 1999). The RARE core methods are designed to either stand alone or to be supplemented by other qualitative and quantitative methods. The core set of methods used by RARE field teams include focus group interviews, key informant interviews, direct observations, mapping and geocoding, and rapid assessment interviews containing both qualitative and quantitative questions. The methods mixture found in RARE parallels that found in other rapid assessment and response programs (see Rhodes et al. 1999; Stimpson, Fitch, and Rhodes 1999). Supplemental methods are chosen to solve specific local questions within a particular RARE project. They include systematic cognitive data collection techniques (Weller and Romney 1988), life history analysis (Woodhouse 1990), advanced elicitation and audiovisual methods (J. J. Schensul and LeCompte 1999), and social network data collection (Trotter and Schensul 1998; Trotter 1999). Other techniques can be included as needed to increase triangulation or quantitative confirmation of RARE data sets.

SAMPLING

This is an area in which there have been significant methodological improvements over strategies available to earlier rapid assessment projects. General qualitative research sampling has been presented in several texts (Johnson 1990; Kuzel 1992; Luborsky and Rubinstein 1995; Nickel et al. 1995). These designs can be supplemented by works that describe how to combine qualitative and quantitative sampling (see Johnson 1990; Miller and Payne 1993) and by general quantitative sample design features (see Fink 1995). The RARE sampling frameworks provide a complementary design that allows both qualitative and quantitative samples to be appropriately and simultaneously collected as part of the assessment process.

QUALITATIVE SAMPLE FRAMES

The RARE sampling strategy is designed to provide a representative sample of the cultural variability within the population. Qualitative samples are constructed to be representative of the varieties of views and values relating to the domain being studied, both in terms of variation and consensus. Variability in values, beliefs, and processes within a single cultural domain tend to be limited. Therefore, cultural experts are sampled to give both depth and breadth of coverage for a particular domain. The samples are drawn from individuals who can discuss most or all of the elements of the domain, rather than drawn from a random or probabilistic sample of individuals who have high variability in their knowledge of the domain. A random sample is frequently inefficient in producing comprehensive information about a cultural domain. Most randomly drawn individuals waste valuable interview time when they provide limited knowledge of the subject. All too often, they must describe what they do not know rather than what they do know. Therefore, usually either qualitative sample frames or targeted samples or combinations of the two are nominated (Sudman and Kalton 1986; Sudman et al. 1988; Johnson 1990; Van Meter 1990).

Nominated frameworks are constructed by asking individuals who are known to be involved in an area of culture to nominate people for interviews who they believe have in-depth knowledge and experience with the cultural domain. They are asked to nominate experts who are particularly good at discussing and describing the cultural domain. Individuals nominated by multiple members of the community are consensual experts and are likely to provide the best expert sampling frame for a particular cultural domain. RARE used this form of nominative sampling to conduct both key informant interviews and focus groups. This sampling process has been extensively explored in the literature, usually as two forms of sampling. These are snowball (chain referral) sampling (Erickson 1979; Biernacki and Waldorf 1981; Berg 1983; Kaplan, Korf, and Sterk 1987; Johnson, Boster, and Holbert 1989; Sniijders 1992; Spreen 1992; Eland-Goossensen et al. 1997; Heckathorn 1997) and network forms of nominated sampling procedures (Czaja and Blair 1990; Galaskiewicz 1991; Griffiths et al. 1993; Burt and Ronchi 1994; Spreen and Zwaagstra 1994).

Targeted frameworks are used where nominated frameworks are not feasible or where a broader experiential and geographical sample is needed. They are also used to find the individuals who can nominate individuals for a nominated sampling frame. Targeted samples are constructed by determining the categories of individuals who are likely to have the most knowledge and experience about a cultural domain and who represent the most likely

variation in experience with that area of culture. They are also constructed by selecting people within specified physical locations, such as a housing complex, block, or risk venue. In many cases, targeted sampling is used to find individuals who are representatives of hidden or very rare populations (Braunstein 1993; Griffiths et al. 1993; Sudman et al. 1988). There have been a number of large-scale project examples of targeted sampling, including methodological discussions of the representativeness and the generalizability associated with it (Watters and Biernacki 1989; Wiebel et al. 1993; Carlson et al. 1994).

Two additional rapid assessment sampling procedures have been borrowed from biology and ecology and applied to studying trends in risk-taking populations. One is capture-recapture sampling (Nichols 1992; Bart 1995; Wileyto 1995). The other is rapid assessment cluster sampling (Malilay, Flanders, and Brogan 1997). The capture-recapture technique has been used in the social sciences to estimate the number of drug users in an area (Hay and McKeganey 1996; Cox and Shipley 1997), to conduct fetal alcohol syndrome surveillance in Alaska (Egeland, Hester, and Hook 1995), to assess the patterns of syringe distribution among injection drug users (Heines et al. 1998), and to estimate and describe populations of street-walking female prostitutes in Scotland (Leyland, Barnard, and McKeganey 1993). Both techniques can provide estimates of changes over time in the vulnerable populations.

The RARE project combines these approaches to collect samples that are appropriate for the various core methods. Nominated samples were used to collect information from a combination of community leaders and service providers as well as from people vulnerable to HIV infection and AIDS disease progression. Targeted and geotargeted frameworks were used to collect samples for the direct observational methods, brief cultural domain interviews, and the rapid assessment surveys for RARE. These method-specific sampling designs were judged the most likely to provide consensual and competing perspectives about the values, beliefs, and behaviors that were critical to understanding HIV risks and services at the local level. In addition, they provide the most defensible and comprehensive data sets in the minimum amount of time.

SAMPLE SIZE (COMPREHENSIVE COVERAGE OF CULTURAL ISSUES)

Sample size is constructed from different premises for qualitative and quantitative samples. In part, this is due to two different rationales for the

samples. Most quantitative samples are created to be estimation samples, whereas most qualitative samples are designed to be cultural saturation, or redundancy, samples. Estimation samples allow the researcher to estimate or generalize population characteristics from the sample. Cultural saturation samples allow the researcher to thoroughly describe the cultural consensus and variability within a cultural domain.

The most common approach in quantitative research is to use power analysis and probabilistic sampling to determine sample size, based on a knowledge of the statistical techniques that will be used to analyze the data (see Dignan 1993; D. B. Allison, Silverstein, and Gorman 1996; Dennis, Lennox, and Foss 1997). This approach can be supplemented and refined by information on issues surrounding tests of significance (Cowles et al. 1998; Moore 1998; Vacha-Haase and Thompson 1998) and on follow-up rates for public health studies (see Ziek et al. 1996). There are a number of computer programs available that will construct ideal sample sizes, based on basic methodological input from the researcher (Erdfelder, Faul, and Buchner 1996; Algina and Hombo 1998; Morse 1998).

In contrast, the ideal procedure for assuring adequate sample size in qualitative research is to interview to redundancy (i.e., until no new or unexplained elements or conditions of the cultural domain have been exposed in a new interview) using nominated and/or targeted samples. However, practical applications of rapid assessment have shown that "pragmatic redundancy" (i.e., sufficient information to provide confidence in the data) can be achieved long before total redundancy occurs, since most cultural expert qualitative interviews contain the core cultural beliefs, values, and contextual information that is available in the overall population.

Since qualitative samples are normally expert samples selected to be representative of the primary knowledge about a single cultural domain, most cultural domains can be adequately explored with fifteen to thirty in-depth cultural expert interviews. This empirically based approach produces a strong cultural consensus description and the majority of variation in views within the culture, since expert interviews provide evidence of both the experts' beliefs as well as the experts' knowledge of competing or complementary beliefs or information about the cultural domain (Romney, Weller, and Batchelder 1986; Johnson 1990). The number of people interviewed is generally tied to specific methods. As a general model, RARE uses the following guidelines for adequate sample sizes for various methods (see Table 1).

In many cases, both random selection and ethnographic sampling are conducted in a single project. There are now a number of methodological discus-

TABLE 1
Examples of Matching Methods and Sample Sizes for RARE projects

<i>Method</i>	<i>Sample Frame</i>	<i>N</i>
Key informant interviews		Fifteen per cultural domain, per population segment ^a
Focus groups		Three groups, eight-ten people each, per cultural domain, per key population segment
Rapid assessment survey (street intercept)	Random selection within targeted community context	Thirty per key issue area, per key population segment
Direct observation	Targeted rapid environmental assessment sampling to observe all key sites; intervention-related behaviors identified	Minimum: Observation in ten locations with ten key informants

NOTE: RARE = Rapid Assessment, Response, and Evaluation.

a. For this project, population segments are the equivalent of life-experience groups. For example, people experiencing one kind of HIV risk, such as injection drug use, would be a population segment. People providing health care services to these individuals would be another population segment, and policy makers or community leaders would be another population segment. Thus, the project interviewed at-risk populations, service providers, and policy makers to find the similarities and differences in cultural knowledge, beliefs, and experiences with HIV in the community. Some individuals in the three groups actually legitimately belong to two or all three groups, providing linkages between these worldviews.

sions on how these data sets can be appropriately linked and coanalyzed (see Giami et al. 1995).

AN INTEGRATED SUITE OF METHODS

One condition that contributes to reliability and validity in mixed methods designs is the use of triangulation techniques (Nickel et al. 1995; Bernard 1998). The overall methodological mix used in rapid assessment is a set of complementary techniques selected to address a specific research problem. The mix varies according to the question being explored, the cultural context of the issue, and the types of applications expected from the project. Single methods, such as focus groups or key informant interviews, provide evidence of both consensual and conflicting views about a cultural domain. Adding other methods often helps explain the consensus and/or the conflict. For

example, focus groups tend to produce public discourse and provide information about what people say they do or should do. When this is matched with direct observations of the behavior explored in the focus group, it is often possible to confirm some of the things that were said and to discover variations between what people say they should do and their actual behavior. This helps researchers analyze complementary data and maximize their methodological strengths while dealing with methodological weaknesses.

RARE follows this triangulation paradigm. The RARE core methods were picked for three reasons. First, they cover all of the primary data needs for the project, allowing for quick turnaround of intervention recommendations for the community decision-making process. Second, they produce data that are summarized in the form of high-impact quotes (letting the community and the data speak for themselves), maps, pictures, and summaries in clear language that can be understood by all of the parties involved. There is no obfuscation by jargon. Third, they allow for clear triangulation using multiple methods that offer complementary data for each domain within a scientifically defensible framework. Each RARE project focuses on the investigation of the HIV and AIDS risks for a single vulnerable population (e.g., crack-smoking women, African American injection drug users, Latino men who have sex with men, etc.) within a limited geographical location. This allows culturally competent intervention or treatment programs to be rapidly initiated in a workable context.

General ethnographic and assessment research has demonstrated that there are several cultural domains that need to be explored to establish appropriate public health interventions. These domains include data on beliefs and knowledge systems, information about risk-taking and health-seeking behaviors, and information on the sociocultural and physical contexts of both risks and other behaviors, supplemented by information on language use, cultural symbolism, and communication, to establish culturally appropriate interventions. The RARE operating definitions for these domains include basic premises about them and an identification of the methods mix used to collect appropriate data on them. The following methods and cultural domains matrix identify the ways in which the RARE core methods provide triangulation of information within this paradigm (see Table 2).

The core RARE methods are organized in two basic clusters: one an interview cluster and the other an observational and mapping cluster. This allows a project to be designed to run with very little downtime for the field research teams. For example, when the focus groups are being set up, it takes time to identify and call all potential participants, set up the location for recording, accomplish all of the organizational processes, and then conduct the focus groups and produce transcripts for analysis. The process produces several

TABLE 2
RARE Domain and Methods Matrix

<i>Method</i>	<i>Domains: Beliefs, Knowledge, and Values</i>	<i>Risk, Activities, and Actions</i>	<i>Physical Context and Structure</i>	<i>Symbols, Language, and Communication</i>
Key informant interviews	Yes	Yes	Yes	Yes
Focus groups	Yes	Yes	Yes	Yes
Geomapping		Yes	Yes	
Direct observation	Yes	Yes	Yes	Yes
Rapid surveys and short street interviews	Yes	Yes	Yes	Yes
Natural language and com- munication exploration	Yes	Yes		

NOTE: RARE = Rapid Assessment, Response, and Evaluation.

time periods where there would be dead time if focus groups were the only method being used. These time segments are ideal for conducting the observations and some of the geomapping assessments. This type of methodological time juggling makes the overall process efficient and shorter in duration than otherwise possible.

RARE ANALYSIS PARADIGM

The manuals and training programs for many earlier rapid assessment programs emphasized data collection and had only limited resources on qualitative data analysis. However, this process all too often left a local group with the unfortunate condition of having a massive amount of well-collected data that they did not know how to analyze; thus, they failed to complete the project in a defensible format. The lack of general public health training in qualitative analysis was, until recently, coupled with a limited methodological literature in qualitative analysis. Recent advances have made this process much more systematic and have made it easier to train individuals within the parameters of a rapid assessment project.

RARE depends on the recent expansion of information on the systematic analysis of qualitative data. A number of texts provide strong models specifically devoted to providing rationales, methodological descriptions, and analytical schema for ethnographic and other qualitative data (Miles and Huberman 1994; Wolcott 1995; Mason 1997; Bernard 1998; S. Schensul and Schensul

1998). These works can be supplemented by a growing number of methodological texts on specific qualitative data management and analysis issues. These include sources of variation in interview data (Aunger 1994), coding (MacQueen et al. 1998), model building (Gittelsohn 1992), explorations of meaning (Manson 1997), use of computers (Dohan and Jankowski 1998), network studies (Trotter 1999), and life history studies (Woodhouse 1990). The result is that a significant gap is being filled in the methodological rigor of rapid assessment projects.

COMMUNITY PARTICIPATION

Over the past ten years, there have been consistent calls for increased community participation in research, design, and planning of public health programs in the United States and abroad. The need for community involvement in local assessment research is well documented (Alihonou, Inoussa, and Res 1993; Lynch 1993; Willms et al. 1997; Beeker, Guenther-Gray, and Raj 1998). This model had been adopted by RARE, especially since it helps ensure that the recommendations for the interventions that are the core of the RARE response will be adopted in the community.

Rapid assessment projects are particularly well designed to accommodate and use community participation. This is a result of the methods mixture that is used (Kendall 1998) as well as the theoretical underpinnings of community research involvement and direction (Whyte 1995; K. R. Allison and Rootman 1996; Narayan 1996; Holland and Blackburn 1998) modified by the cautions for the problems that affect these types of studies (Seeley, Kayondo, and Mulder 1992; Vakil 1994; Stuart 1998).

RARE is designed to include three primary types of community involvement. These include the inclusion of community policy development processes, the direct involvement of community leadership, and community participation in local field data collection. Each RARE project was initiated at the request of the chief elected officer (usually mayor) and the head of the local health department by direct request to the U.S. Secretary of Health and Human Services (Secretary Shalala). This step was designed to create community involvement at the highest policy levels in the cities requesting RARE technical assistance.

Together, the CEO and chief health officer create a community advisory committee composed of the major stakeholders in HIV/AIDS programs for the city, including health providers, individuals infected and affected by HIV/AIDS, community-based organizational leadership, and community leaders. These individuals are responsible for identifying the area of assess-

ment (vulnerable people and high-risk places) most needed for local planning and implementation of intervention, selecting the field teams, providing assistance to the assessment process, and turning the assessment data and reports into local actions (policy changes, ordinances, new programs, revisions of existing programs, etc.).

Finally, members of the community form the rapid assessment field team and both collect and analyze the core and supplemental data with technical assistance from the Office of HIV/AIDS Policy in the Surgeon General's Office. The initial targeting of the assessment, the data collection, analysis, and final action from the project are locally owned and locally driven.

EVALUATION

The most consistent and persistent criticism of earlier forms of rapid assessment was the lack of evaluation procedures designed to determine the impact of the process. The RARE evaluation design includes both process and outcome evaluation approaches (Patton 1990; Frechtling and Sharp 1997) and is a central component of the rapid assessment process.

The evaluation process in each community includes the following components. The first is qualitative documentation of the local planning and preparation activities for the community assessment process, including information concerning approaches, organizational strategies, working relations, communication arrangements, community participation levels, decision-making style, locally available resources, barriers, and problem-solution strategies. Second is a narrative account of the evolving local structures created or mobilized to implement rapid assessment and the activities undertaken on behalf of the assessment process. This includes a specification of obstacles and hindrances encountered during the RARE assessment process and the specific measures that were adopted to minimize these obstacles (including the effectiveness of the measures in achieving their goal). Third is the documentation of local responses that are implemented, their relationship to assessment findings, and the receptivity in the target population. Fourth is documentation of the efforts implemented to sustain local assessment and response capacity and the effectiveness of these efforts in securing ongoing support for rapid assessment and response efforts. Fifth and last is a review of the ethical issues encountered through the assessment and response process, the procedures used to assess the ethical implications of alternative approaches for particular vulnerable populations, and the decision-making apparatus developed to address ethical dilemmas.

DISCUSSION

RARE is designed to take advantage of recent methodological advances for rapid ethnographic assessment and to overcome the identified methodological weaknesses in the process. Previously identified concerns about the approach include misapplication of the technique, redundant use where other data are available, inappropriate sampling, insufficient training and expertise to correctly analyze and interpret data, misplaced generalizations, and biased or incorrect decisions derived from the data. A number of these concerns have been encountered in the RARE field applications and have been addressed in the RARE training and methodological guidelines.

Three issues place a significant amount of pressure on the infrastructure of the RARE projects and on the recruitment of the RARE field teams. These are (1) the need for very strong oversight of the assessment process by professional ethnographers, (2) the need for analysis expertise and training, and (3) the need to have specific data linked to specific recommendations derived from the project.

The need for high-quality, experienced oversight cannot be overstated. The difference between a defensible sample and an incorrectly constructed sample is a consistent quality control issue for field projects. Without including a trained ethnographer with experience in this area, the sample can easily become inappropriately skewed to acquaintances of the other fieldworkers. The same issue pertains to analysis of the data. The design allows for rapid collection of a very large amount of data. However, without training and supervision of the analysis process, this analysis can go from high quality to a questionable processing of anecdote and personal belief on the part of the field research team. Finally, the team has both the opportunity and the need to provide clear and unbiased data that are directly linked to recommendations. Otherwise, the local bias about specific conditions can change the process from data-based to opinion-based and biased recommendations. A clear linkage must be maintained within a strong analytical framework rather than being driven by belief and supposition.

At the national level, one misapplication of the RARE technique would be to generalize from one specific context to others that are superficially similar to it but that are different in detail and context. The RARE project is currently avoiding these generalizations by allowing each of the twelve city projects to stand alone (each with its locally determined assessment target populations, contexts, risks, and intervention conditions). At the same time, there is both a need and a tendency to want to determine where and when generalizable conclusions can be drawn from the overall process. This tension will demand a careful resolution of the methodological difficulties inherent in the process.

The problem of the redundant or unnecessary use of rapid assessment, where other data are available, is an issue as well. There is a tendency for local governments to want to try new approaches when there are already sufficient data from either local or national sources to achieve the policy decisions that need to be made. On the other hand, it appears that sometimes the redundancy, backed by the desire for a novel approach to data collection, is necessary to convince policy makers to make controversial changes. Thus, redundancy is occasionally necessary.

Inappropriate application of the process is another pressure that RARE faces. Some of the key assessment issues that are identified by the local communities are more appropriate for other research and assessment techniques, especially those where there is a need for estimates of population sizes or conventional epidemiological data (infection rates, etc.). This difference is normally overcome in the RARE project through the community advisory group training to show the conditions that are most appropriate to the rapid assessment approach. However, in some cases, the assumptions about the information that is needed and the information that is possible are a mismatch.

We feel that the design and methodological considerations that have been addressed in RARE meet the standards of good science, coupled with the pragmatic needs of rapid and focused assessment. The result, in the first three cities where RARE has been applied,² has been a successful completion of the rapid assessment process and the initial implementation of policy and program changes at the local and regional levels. The findings from the field teams have been written up as action plans and have been both informally and formally presented to the community advisory committees and to the mayors and health department administrations.

Recommendations from the RARE findings have been implemented in each of the cities. In some cases, this has occurred as the findings were being reported out during the assessment process, which is a success for rapid assessment. The city responses fall into several types. Some were changes in health department and community-based organizational policy and procedures. Another form of response has been the recommendation of passage of local ordinances requiring changes in risk venues, such as pornographic bookstores, or changes in local paraphernalia laws to improve intravenous-drug-user access to clean syringes or needle exchange. Finally, over a longer period, the information is being used to modify the structure and content of intervention programs at the local level in terms of content, approach, and logistical aspects of providing the programs to appropriate vulnerable populations. The findings to date are locally significant and will be described in greater detail in other publications. In the meantime, the RARE methods have been field tested, and both the strengths and weaknesses identified in

this article have been addressed in detail at the local level with very promising results.

NOTES

1. These assumptions are modified from a set of earlier assumptions described in detail in the World Health Organization Rapid Assessment and Response manuals. See Stimpson, Fitch, and Rhodes (1999) for details on the original assumptions.

2. The three cities are Detroit, Miami, and Philadelphia. Evaluation reports and publications from findings in these cities are currently being produced and will be available in the near future, pending local clearance and production schedules. Since the data are collected and owned at the local level, only public, generic, and cross-site information is identified here to avoid ethical problems with data ownership and publication rights.

REFERENCES

- Algina, J., and C. M. Hombo. 1998. Power calculation for independent samples: Hotelling's T2 using PROC IML IN SAS. *Educational and Psychological Measurement* 58 (1): 154-57.
- Alihonou, E., S. Inoussa, and L. Res. 1993. *Community participation in primary health care*. Amsterdam: Royal Tropical Institute.
- Allison, D. B., J. M. Silverstein, and B. S. Gorman. 1996. Power, sample size estimation, and early stopping rules. In *Design and analysis of single-case research*, edited by R. D. Franklin and D. B. Allison, 335-71. Mahwah, NJ: Lawrence Erlbaum.
- Allison, K. R., and I. Rootman. 1996. Scientific rigor and community participation in health promotion research: Are they compatible? *Health Promotion International* 11 (4): 333-40.
- Aral, S. O., and L. Fransen. 1995. STD/HIV prevention in Turkey: Planning a sequence of interventions. *AIDS Education and Prevention* 7 (6): 544-53.
- Askew, I., P. Tapsoba, Y. Ouedraogo, C. Viadro, D. Bakouan, and P. Sebgo. 1993. Quality of care in family planning programmes: A rapid assessment in Burkina Faso. *Health Policy and Planning* 8 (1): 19-32.
- Aunger, R. 1994. Sources of variation in ethnographic interview data: Food avoidances in the Ituri Forest, Zaire. *Ethnology* 33 (1): 65-99.
- Bart, J. 1995. Evaluation of population trend estimates calculated using capture-recapture and population projection methods. *Ecology Applied* 5 (3): 662-71.
- Bebe, J. 1995. Basic concepts and techniques of rapid appraisal. *Human Organization* 54:42-51.
- Becker, C., C. Guenther-Gray, and A. Raj. 1998. Community empowerment paradigm drift and the primary prevention of HIV/AIDS. *Social Science and Medicine* 46:831-42.
- Bennett, F. J. 1995. Qualitative and quantitative methods: In-depth or rapid assessment? *Social Science and Medicine* 40 (12): 1589-90.
- Bentley, M. E., G. H. Pelto, W. L. Straus, D. A. Schumann, C. Adegbola, E. de la Pena, G. A. Oni, K. H. Brown, and S. L. Huffman. 1988. Rapid ethnographic assessment: Applications in a diarrhea management program. *Social Science and Medicine* 27 (1): 107-16.
- Bernard, H. R., ed. 1998. *Handbook of methods in cultural anthropology*. Walnut Creek, CA: AltaMira.

- Berg, S. 1983. Random contact processes, snowball sampling and factorial series distributions. *Journal of Applied Problems* 20 (1): 31-46.
- Biernacki, P., and D. Waldorf. 1981. Snowball sampling: Problems and techniques of chain referral sampling. *Sociological Methods and Research* 10 (2): 141-63.
- Braunstein, M. S. 1993. Sampling a hidden population: Noninstitutionalized drug users. *AIDS Education and Prevention* 5 (2): 131-40.
- Burt, R. S., and D. Ronchi. 1994. Measuring a large network quickly. *Social Networks* 16 (2): 91-135.
- Carlson, R. G., J. Wang, H. A. Siegal, and R. S. Falck. 1994. An ethnographic approach to targeted sampling: Problems and solutions in AIDS prevention research among injection drug and crack cocaine users. *Human Organization* 53 (3): 279-95.
- Chambers, R. 1992. Actual or potential uses of RRA/PRA methods in health and nutrition. In *PRA notes: Special issue on applications for health*, 101-6. London: International Institute for Environment and Development.
- Cowles, M., C. Davis, B. E. Wampold, B. Davis, R. H. Good, III, J. Cohen, F. L. Schmidt, and R. W. Frick. 1998. Data analysis, evaluation, and interpretation. In *Methodological issues and strategies in clinical research*, 2d ed., edited by E. Alan et al., 291-392. Washington, DC: American Psychological Association.
- Cox, S., and M. Shipley. 1997. Counting the uncatchable? An epidemiological method for counting drug misusers. *Social Psychiatry and Psychiatric Epidemiology* 32 (1): 19-23.
- Czaja, R., and J. Blair. 1990. Using network sampling in crime victimization surveys. *Journal of Quantitative Criminology* 6 (2): 185-206.
- Dale, J., C. Shipman, L. Lacock, and M. Davies. 1996. Creating a shared vision of out of hours care: Using rapid appraisal methods to create an interagency, community oriented, approach to service development. *British Medical Journal* 312:1206.
- Dennis, M. L., R. D. Lennox, and M. A. Foss. 1997. Practical power analysis for substance abuse health services research. In *The science of prevention: Methodological advances from alcohol and substance abuse research*, edited by K. J. Bryant and M. Windle, 367-404. Washington, DC: American Psychological Association.
- Dignan, M. 1993. Power analysis: A useful tool for designing health education and health promotion research. *Health Values: The Journal of Health Behavior, Education and Promotion* 17 (1): 54-7.
- Dohan, D., and M. S. Jankowski. 1998. Using computers to analyze ethnographic field data: Theoretical and practical considerations. *Annual Review of Sociology* 24:477-98.
- Egeland, G. M., K.A.P. Hester, and E. B. Hook. 1995. Use of capture-recapture analyses in fetal alcohol syndrome surveillance in Alaska. *American Journal of Epidemiology* 141 (4): 335-41.
- Eland-Goossens, M. A., L.A.M. Van De Goor, V. C. Vollemans, V. M. Hendriks, and H.F.L. Garretsen. 1997. Snowball sampling applied to opiate addicts outside the treatment system. *Addiction Research* 5 (4): 317-30.
- Ensign, B. J., and J. Gittelsohn. 1998. Health and access to care: Perspectives of homeless youth in Baltimore City, U.S.A. *Social Science and Medicine* 47 (12): 2087-99.
- Ensign, B. J., and J. Santelli. 1998. Health status and access to care: Comparison of adolescents at a school based health clinic with homeless adolescents. *Archives of Pediatrics and Adolescent Medicine* 152 (1): 20-4.
- Erdfelder, E., F. Faul, and A. Buchner. 1996. GPOWER: A general power analysis program. *Behavior Research Methods, Instruments and Computers* 28 (1): 1-11.
- Erickson, B. H. 1979. Some problems of inference from chain data. *Sociological Methodology* 10:276-302.
- Fink, A. 1995. *How to sample in surveys: The survey kit*. Vol. 6. Thousand Oaks, CA: Sage.

- Frechtling, J., and L. Sharp. 1997. *User-friendly handbook for mixed method evaluations*. Washington, DC: Division of Research, Evaluation and Communication, National Science Foundation.
- Galaskiewicz, J. 1991. Estimating point centrality using different network sampling techniques. *Social Networks* 13 (4): 347-86.
- Giami, A., J.-L. Korpes, C. Lavigne, and R. Scelles. 1995. Un exemple d'articulation de methodes d'analyse qualitatives et quantitatives sur des entretiens semi-directifs: Les representations du handicap. [Linking qualitative and quantitative methods of analysis applied to semistructured interviews: Representations of handicap]. *BMS, Bulletin de Methodologie Sociologique* 47:49-77.
- Gittelsohn, J. 1992. Building ethnographic models. *Qualitative Research Methods Newsletter*: 8-15 (Tata Institute for Social Sciences, Bombay).
- Griffiths, P., M. Gossop, B. Powis, and J. Strang. 1993. Reaching hidden populations of drug users by privileged access interviewers: Methodological and practical issues. *Addiction* 88 (12): 1617-26.
- Guillette, E. A., M. M. Mercedes, A. M. Guadalupe, A. D. Soto, and G. I. Enequina. 1998. An anthropological approach to the evaluation of preschool children exposed to pesticides in Mexico. *Environmental Health Perspectives* 106 (6): 347-53.
- Harris, K. J., and N. W. Jerome. 1997. Commentary. *Human Organization* 56 (3): 375.
- Harris, K. J., N. W. Jerome, and S. B. Fawcett. 1997. Rapid assessment procedures: A review and critique. *Human Organization* 56 (3): 378.
- Hay, G., and N. McKeganey. 1996. Estimating the prevalence of drug misuse in Dundee, Scotland: An application of capture recapture methods. *Journal of Epidemiology and Community Health* 50 (4): 469-73.
- Heaver, R. 1991. *Participative rural appraisal: Potential applications to family planning, health and nutrition programs*. Washington, DC: Technical Department Asia Region World Bank.
- Heckathorn, D. D. 1997. Respondent driven sampling: A new approach to the study of hidden populations. *Social Problems* 44 (2): 174-99.
- Heines, R., K. Khoshnood, D. Bigg, J. Gudyish, and B. Junge. 1998. Syringe use and re-use: Effects of syringe exchange programs in four cities. *Journal of Acquired Immune Deficiency Syndromes* 18:37-44.
- Holland, J., and J. Blackburn. 1998. *Whose voice? Participatory research and policy change*. London: Intermediate Technology Publications.
- International Epidemiological Association. 1989. Rapid epidemiologic assessment. *Official Journal of the International Epidemiological Association* 18(Suppl. 2).
- Johnson, J. C. 1990. *Selecting ethnographic informants*. Newbury Park, CA: Sage.
- Johnson, J. C., J. S. Boster, and D. Holbert. 1989. Estimating relational attributes from snowball samples through simulation. *Social Networks* 11 (2): 135-58.
- Kachondham, Y. 1992. Rapid rural appraisal and rapid assessment procedures: A comparison. In *RAP: Qualitative methodologies for planning and evaluation of health-related programmes*, edited by N. S. Scrimshaw and G. R. Gleason, 337-44. Boston: INFDIC.
- Kaplan, C. D., D. Korf, and C. Sterk. 1987. Temporal and social contexts of heroin using populations: An illustration of the snowball sampling technique. *Journal of Nervous and Mental Disease* 175 (9): 566-74.
- Kendall, C. 1998. The role of formal qualitative research in negotiating community acceptance: The case of dengue control in El Progreso, Honduras (Negotiating with communities). *Human Organization* 57 (2): 217-22.

- Kilmarx, P. H., C. M. Black, K. Limpakarnjanarat, N. Shaffer, S. Yanpaisarn, P. Chaisilwattana, W. Siritwasin, N. L. Young, C. E. Farshy, T. D. Mastro, and M. E. St. Louis. 1998. Rapid assessment of sexually transmitted diseases in a sentinel population in Thailand: Prevalence of chlamydial infection, gonorrhoea, and syphilis among pregnant women. *Sexually Transmitted Infections* 74 (3): 189-93.
- Kirsch, H. 1994. Applied research in the development of prevention strategies in heterogeneous and rapidly changing societies. *Drugs, Education, Prevention and Policy* (1, 2): 153-68.
- Kuzel, A. J. 1992. Sampling in qualitative inquiry. In *Doing qualitative research. Research methods for primary care*, vol. 3, edited by B. F. Crabtree and W. L. Miller, 31-44. Newbury Park, CA: Sage.
- Lambert, H. 1998. Methods and meanings in anthropological, epidemiological and clinical encounters: The case of sexually transmitted disease and human immunodeficiency virus control and prevention in India. *Tropical Medicine and International Health* 3 (12): 1002-10.
- Lee, T., and M. Price. 1995. Indicators and research methods for rapid assessment of a tuberculosis control programme: Case study of a rural area in South Africa. *Tubercle Lung Diseases* 76 (5): 441-49.
- Lerer, L. B. 1999. Health impact assessment. *Health Policy and Planning* 14 (2): 198-203.
- Leyland, A., M. Barnard, and N. McKeganey. 1993. The use of capture-recapture methodology to estimate and describe covert populations: An application to female street-working prostitution in Glasgow. *BMI, Bulletin de Methodologie Sociologique* 38:52-73.
- Luborsky, M. R., and R. L. Rubinstein. 1995. Sampling in qualitative research: Rationale, issues and methods. *Research on Aging* 17 (1): 89-113.
- Lynch, J. M. 1993. Community participation in community needs assessments. *Journal of Applied Sociology* 10:125-36.
- MacQueen, K. M., E. McLellan, K. Kay, and B. Milstein. 1998. Codebook development for team-based qualitative analysis. *Cultural Anthropological Methods Journal* 10 (2): 31-6.
- Malilay, J., W. D. Flanders, and D. A. Brogan. 1997. Método modificado de muestreo por conglomerados para la evaluación rápida de necesidades después de un desastre [Modified cluster sampling method for the rapid assessment of needs after a disaster]. *Revista Panamericana de Salud Pública/Pan-American Journal of Public Health* 2 (1): 7-12.
- Manderson, L., and P. Aaby. 1992a. An epidemic in the field? Rapid assessment procedures and health research. *Social Science and Medicine* 35:839-50.
- . 1992b. Can rapid anthropological procedures be applied to tropical diseases? *Health Policy and Planning* 7 (1): 46-55.
- Manson, S. M. 1997. Ethnographic methods, cultural context, and mental illness: Bridging different ways of knowing and experience. *Ethos* 25 (2): 249-58.
- Mason, J. 1997. *Qualitative researching*. Thousand Oaks, CA: Sage.
- McDonnell, S., M. Brennan, G. Burnham, and D. Tarantola. 1994. Assessing and planning home-based care for persons with AIDS. *Health Policy and Planning* 9 (4): 429-37.
- Miguel, C. A., V. L. Tallo, L. Manderson, and M. A. Lansang. 1999. Local knowledge and treatment of malaria in Agusan del Sur, the Philippines. *Social Science and Medicine* 48 (5): 607-18.
- Miles, M. B., and A. M. Huberman. 1994. *Qualitative data analysis: An expanded sourcebook*. 2d ed. Thousand Oaks, CA: Sage.
- Miller, A. C., and B. S. Payne. 1993. Qualitative versus quantitative sampling to evaluate population and community characteristics at a large river mussel bed. *American Midland Naturalist* 130 (1): 133-45.

- Moore, S. R. 1998. Effects of sample size on the representativeness of observational data used in evaluation. *Education and Treatment of Children* 21 (2): 209–26.
- Morse, D. T. 1998. MINSIZE: A computer program for obtaining minimum sample size as an indicator of effect size. *Educational and Psychological Measurement* 58 (1): 142–53.
- Narayan, D. 1996. *Toward participatory research*. Washington, DC: World Bank, the Office of the Publisher.
- Needle, R. H., R. T. Trotter, II, E. Goosby, C. Bates, and D. von Zinkernagel. 1999. *Crisis response teams and communities combat HIV/AIDS in racial and ethnic minority populations: A guide for conducting community-based rapid assessment, rapid response, and evaluation*. Washington, DC: Department of Health and Human Services, Office of HIV/AIDS policy.
- Nichols, J. D. 1992. Capture-recapture models. *Bioscience* 42 (2): 94–102.
- Nickel, B., M. Berger, P. Schmidt, and K. Plies. 1995. Qualitative sampling in a multi-method survey: practical problems of method triangulation in sexual behavior research. *Quality and Quantity* 29 (3): 223–40.
- Nordberg, E., H. Oganga, S. Kazibwe, and J. Onyango. 1993. Rapid assessment of an African health system. Test of a planning tool. *International Journal of Health Planning and Management* 8:219–33.
- Oliver, I., and A. J. Beattie. 1996. Designing a cost-effective invertebrate survey: A test of methods for rapid assessment of biodiversity. *Ecology Applied* 6 (2): 594–607.
- Park, P. 1999. People, knowledge, and change in participatory research. *Management Learning* 30 (2): 141–57.
- Patton, M. Q. 1990. *Qualitative evaluation and research methods*. Newbury Park, CA: Sage.
- Power, R. 1996. Rapid assessment of drug-injecting situations at Hanoi and Ho Chi Minh City, Viet Nam. *Bulletin on Narcotics* 48:35–52.
- Price, R. H. 1990. Whither participation and empowerment? *American Journal of Community Psychology* 18 (1): 163–67.
- Rhodes, T., G. V. Stimpson, C. Fitch, A. Ball, and A. Renton. 1999. Rapid assessment, injecting drug use, and public health. *The Lancet* 354 (9172): 65–8.
- Romney, A. K., S. C. Weller, and W. H. Batchelder. 1986. Culture as consensus: A theory of cultural and informant accuracy. *American Anthropologist* 88:313–38.
- Schensul, J. J., and M. D. LeCompte. 1999. *Ethnographer's toolkit*. Walnut Creek, CA: AltaMira.
- Schensul, S., and J. J. Schensul. 1998. *Essential ethnographic methods: Observations, interviews, and questionnaires* (Ethnographer's Toolkit Series, vol. 2). Walnut Creek, CA: AltaMira.
- Schwartz, N. B., J. J. Molnar, and L. L. Lovshin. 1988. Cooperatively managed projects and rapid assessment: Suggestions from a Panamanian case. *Human Organization* 47 (1): 1–14.
- Scrimshaw, N. S., and G. R. Gleason, eds. 1992. *Rapid assessment procedures: Qualitative methodologies for planning and evaluation of health-related programs*. Boston: International Nutrition Foundation for Developing Countries.
- Scrimshaw, S. M., M. Carballo, and L. Ramos. 1991. The AIDS rapid anthropological assessment procedures: A tool for health education planning and evaluation. *Health Education Quarterly* 18 (1): 111–23.
- Scrimshaw, S. M., and E. Hurtado. 1987. *Rapid assessment procedures for nutrition and primary health care: Anthropological approaches to improving program effectiveness* (References Series, vol. 11). Los Angeles: UCLA Latin American Center.

- Moore, S. R. 1998. Effects of sample size on the representativeness of observational data used in evaluation. *Education and Treatment of Children* 21 (2): 209–26.
- Morse, D. T. 1998. MINSIZE: A computer program for obtaining minimum sample size as an indicator of effect size. *Educational and Psychological Measurement* 58 (1): 142–53.
- Narayan, D. 1996. *Toward participatory research*. Washington, DC: World Bank, the Office of the Publisher.
- Needle, R. H., R. T. Trotter, II, E. Goosby, C. Bates, and D. von Zinkernagel. 1999. *Crisis response teams and communities combat HIV/AIDS in racial and ethnic minority populations: A guide for conducting community-based rapid assessment, rapid response, and evaluation*. Washington, DC: Department of Health and Human Services, Office of HIV/AIDS policy.
- Nichols, J. D. 1992. Capture-recapture models. *Bioscience* 42 (2): 94–102.
- Nickel, B., M. Berger, P. Schmidt, and K. Plies. 1995. Qualitative sampling in a multi-method survey: practical problems of method triangulation in sexual behavior research. *Quality and Quantity* 29 (3): 223–40.
- Nordberg, E., H. Oganga, S. Kazibwe, and J. Onyango. 1993. Rapid assessment of an African health system. Test of a planning tool. *International Journal of Health Planning and Management* 8:219–33.
- Oliver, I., and A. J. Beattie. 1996. Designing a cost-effective invertebrate survey: A test of methods for rapid assessment of biodiversity. *Ecology Applied* 6 (2): 594–607.
- Park, P. 1999. People, knowledge, and change in participatory research. *Management Learning* 30 (2): 141–57.
- Patton, M. Q. 1990. *Qualitative evaluation and research methods*. Newbury Park, CA: Sage.
- Power, R. 1996. Rapid assessment of drug-injecting situations at Hanoi and Ho Chi Minh City, Viet Nam. *Bulletin on Narcotics* 48:35–52.
- Price, R. H. 1990. Whither participation and empowerment? *American Journal of Community Psychology* 18 (1): 163–67.
- Rhodes, T., G. V. Stimpson, C. Fitch, A. Ball, and A. Renton. 1999. Rapid assessment, injecting drug use, and public health. *The Lancet* 354 (9172): 65–8.
- Romney, A. K., S. C. Weller, and W. H. Batchelder. 1986. Culture as consensus: A theory of cultural and informant accuracy. *American Anthropologist* 88:313–38.
- Schensul, J. J., and M. D. LeCompte. 1999. *Ethnographer's toolkit*. Walnut Creek, CA: AltaMira.
- Schensul, S., and J. J. Schensul. 1998. *Essential ethnographic methods: Observations, interviews, and questionnaires* (Ethnographer's Toolkit Series, vol. 2). Walnut Creek, CA: AltaMira.
- Schwartz, N. B., J. J. Molnar, and L. L. Lovshin. 1988. Cooperatively managed projects and rapid assessment: Suggestions from a Panamanian case. *Human Organization* 47 (1): 1–14.
- Scrimshaw, N. S., and G. R. Gleason, eds. 1992. *Rapid assessment procedures: Qualitative methodologies for planning and evaluation of health-related programs*. Boston: International Nutrition Foundation for Developing Countries.
- Scrimshaw, S. M., M. Carballo, and L. Ramos. 1991. The AIDS rapid anthropological assessment procedures: A tool for health education planning and evaluation. *Health Education Quarterly* 18 (1): 111–23.
- Scrimshaw, S. M., and E. Hurtado. 1987. *Rapid assessment procedures for nutrition and primary health care: Anthropological approaches to improving program effectiveness* (References Series, vol. 11). Los Angeles: UCLA Latin American Center.

- Seeley, J. A., J.F.K. Kayondo, and D. W. Mulder. 1992. Community-based HIV/AIDS research—Whither community participation? Unsolved problems in a research programme in rural Uganda. *Social Science and Medicine* 34 (10): 1089–95.
- Snijders, T.A.B. 1992. Estimation on the basis of snowball samples: How to weight? *BMS, Bulletin de Methodologie Sociologique* 36:59–70.
- Spreen, M. 1992. Rare populations, hidden populations, and link-tracing designs: What and why? *BMS, Bulletin de Methodologie Sociologique* 36:34–58.
- Spreen, M., and R. Zwaagstra. 1994. Personal network sampling, outdegree analysis and multi-level analysis: Introducing the network concept in studies of hidden populations. *International Sociology* 9 (4): 475–91.
- Stimpson, G. V., C. Fitch, and T. Rhodes, eds. 1999. *The rapid assessment and response guide on psychoactive substance use and prevention (PSUP-RAR)*. Geneva, Switzerland: World Health Organisation Programme on Substance Abuse and UNAIDS, UNDCP, UNICEF.
- Stohlgren, T. J., G. W. Chong, M. A. Kalkhan, and L. D. Schell. 1997. Rapid assessment of plant diversity patterns: A methodology for landscapes. *Environmental Monitoring and Assessment* 48 (1): 25–43.
- Stuart, C. 1998. Care and concern: An ethical journey in participatory action research. *Canadian Journal of Counseling* 32 (4): 298–318.
- Sudman, S., and G. N. Kalton. 1986. Developments in the sampling of special populations. *Annual Review of Sociology* 12:401–29.
- Sudman, S., M. G. Sirken, G. Monroe, and C. D. Cowan. 1988. Sampling rare and elusive populations. *Science* 240 (4855): 991–96.
- Tarr, C. M., and P. Aggleton. 1999. Young people and HIV in Cambodia: Meanings, contexts and sexual cultures. *AIDS Care: Psychological and Socio-Medical Aspects of AIDS/HIV* 11 (3): 375–84.
- Trotter, R. T., II. 1999. Friends, relatives and relevant others: Conducting ethnographic network studies. In *Mapping social networks, spatial data, and hidden populations. Ethnographer's toolkit*, vol. 4, edited by J. J. Schensul, M. D. LeCompte, R. T. Trotter, II, E. K. Cromley, and M. Singer, 1–50. Walnut Creek, CA: AltaMira.
- Trotter, R. T., II, and R. H. Needle. 1999a. *Crisis response teams and communities combat HIV/AIDS in racial and ethnic minority populations: Rapid assessment, rapid response, and evaluation (RARE Methods Training Manual)*. Washington DC: Office of HIV/AIDS Policy, DHHS.
- Trotter, R. T., II, and R. H. Needle. 1999b. *Crisis response team initiative: RARE guide for principle investigators*. Washington, DC: U.S. Department of Health and Human Services, Office of HIV/AIDS Policy.
- Trotter, R. T., II, and J. J. Schensul. 1998. Methods in applied anthropology. In *Handbook of methods in cultural anthropology*, edited by H. R. Bernard, 691–736. Walnut Creek, CA: AltaMira.
- Turner, I. M., Y. K. Wong, P. T. Chew, and A. Ibrahim. 1996. A rapid assessment of tropical rain forest successional status using aerial photographs. *Biological Conservation* 77 (2–3): 177–83.
- Vacha-Haase, T., and B. Thompson. 1998. Further comments on statistical significance tests. *Measurement and Evaluation in Counseling and Development* 31 (1): 63–7.
- Vakil, A. C. 1994. Of designs and disappointments: Some limits to participatory research in a Third World context. *American Sociologist* 25 (3): 4–19.
- Van Meter, K. M. 1990. Sampling and cross-classification analysis in international social research. In *Comparative methodology: Theory and practice in international social research*.

- Sage Studies in International Sociology, vol. 40, edited by E. Oyen et al., 172–86. London: Sage, Ltd.
- Vincent, N., J. Shoobridge, A. Ask, S. Allsop, and R. Ali. 1999. Characteristics of amphetamine users seeking information, help and treatment in Adelaide, South Australia. *Drug and Alcohol Review* 18 (1): 63–73.
- Vlassoff, C., and M. Tanner. 1992. The relevance of rapid assessment to health research an interventions. *Health Policy and Planning* 7 (1): 1–9.
- Watters, J. K., and P. Biernacki. 1989. Targeted sampling: Options for the study of hidden populations. *Social Problems* 36 (4): 416–30.
- Weller, S. C., and A. K. Romney. 1988. *Systematic data collection*. Newbury Park, CA: Sage.
- Whyte, W. F. 1995. Encounters with participatory action research. *Qualitative Sociology* 18 (3): 289–99.
- Wiebel, W. W., P. Biernacki, N. Mulia, and L. Levin. 1993. Outreach to IDUs not in treatment. In *Handbook on risk of AIDS: Injection drug users and sexual partners*, edited by B. S. Brown, G. M. Beschner, National AIDS Research Consortium, et al., 437–44. Westport, CT: Greenwood.
- Wileyto, E. P. 1995. Expanding Markov-recapture models to incorporate multiple observations. *Environmental Entomology* 24 (5): 1052–62.
- Willms, D., S. S. Manson, A. Adrien, G. Godin, E. Maticka Tyndale, and P. Cappon. 1997. Participatory aspects in the qualitative research design of phase ii of the ethnocultural communities facing AIDS study. *Canadian Journal of Public Health* 87 (Suppl. 1): S15–S25.
- Wolcott, H. F. 1995. *The art of fieldwork*. Walnut Creek, CA: AltaMira.
- Woodhouse, L. D. 1990. An exploratory study of the use of life history methods to determine treatment needs for female substance abusers. *Response to the Victimization of Women and Children* 13 (3): 12–15.
- Ziek, K., M. Beardsley, S. Deren, and S. Tortu. 1996. Predictors of follow up in a sample of urban crack users. *Evaluation and Program Planning* 19 (3): 219–24.

ROBERT T. TROTTER, II, is an Arizona Regent's professor in the Department of Anthropology at Northern Arizona University. His primary research interests are in HIV/AIDS prevention and intervention studies, cross-cultural health research and policy development, and ethnographic research methods.

RICHARD H. NEEDLE is a senior policy analyst in the Office of HIV/AIDS Policy in the U.S. Department of Health and Human Services and has served as program and division director in the National Institute on Drug Abuse. His primary research interests are in the area of HIV/AIDS risk (needle exchange, drug abuse prevention, sexual activities), prevention, and research methods.

ERIC GOOSBY is director of the Office of HIV/AIDS policy in the U.S. Department of Health and Human Services. He is a physician with extensive experience in research and treatment of HIV/AIDS in minority populations in the United States.

CHRISTOPHER BATES is a senior health policy analyst in the Office of HIV/AIDS policy in the U.S. Department of Health and Human Services. His expertise in the area of community organization and community involvement was critical to the success of the RARE project.

MERRILL SINGER is a medical anthropologist, chief of research at the Hispanic Health Council (Hartford, CT), and a research associate at Yale University. He has been involved in AIDS prevention research with inner-city populations for fifteen years. In addition to many journal articles and book chapters, his publications include Rethinking AIDS Prevention (Gordon and Breach, 1992), Critical Medical Anthropology (Baywood, 1995), and Medical Anthropology and the World System (Bergin & Garvey, 1997).