

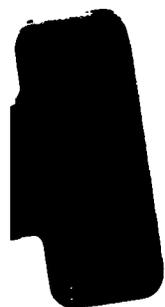


Data Priorities for Population and Health in Developing Countries

Summary of a Workshop

COMMITTEE ON POPULATION

NATIONAL RESEARCH COUNCIL



Data Priorities for Population and Health in Developing Countries

Summary of a Workshop

Cheryl E. Malanick and Anne R. Pebley, editors

Committee on Population
Commission on Behavioral and Social Sciences
and Education
National Research Council

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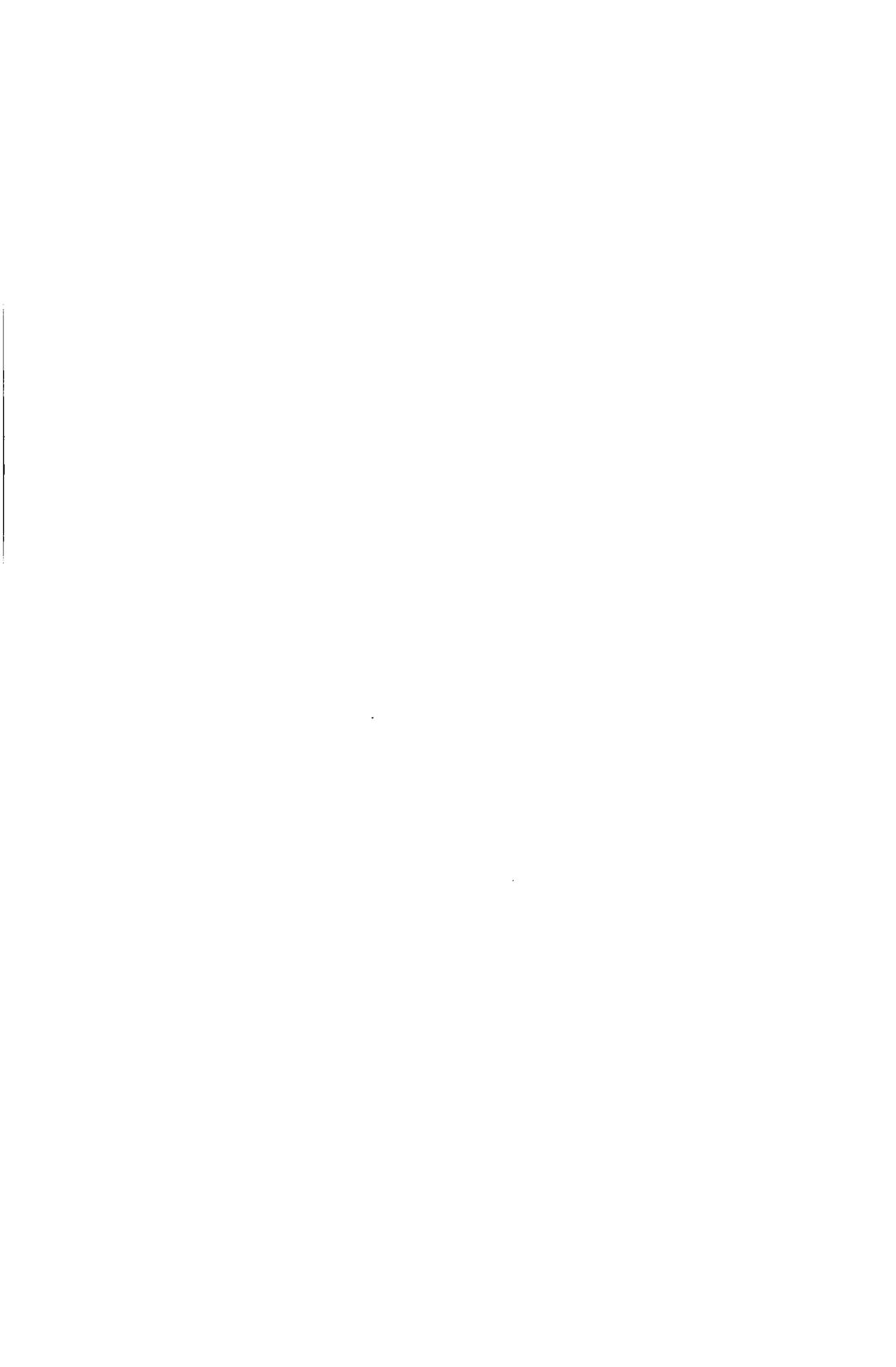
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Data Priorities for Population and Health in Developing Countries: Summary of a Workshop

INTRODUCTION

This report is a summary of a workshop organized by the Committee on Population to discuss data collection priorities for the design, monitoring, and evaluation of population and health programs in developing countries. The workshop was held September 14-15, 1995, at the National Academy of Sciences in Washington, D.C. The main purpose of the workshop was to assist the U.S. Agency for International Development (USAID) in considering its information needs to support its population and health programs.

The workshop was timed to coincide with the preparation of USAID's new strategic plan for population, health, and nutrition and the early stages of design of a new "results package" for data collection and evaluation to support the strategic plan. Nevertheless, the agenda was designed to strike a balance between addressing USAID's immediate concerns and addressing more general issues related to measuring the effectiveness of population and health programs in developing countries. The workshop participants explored current and future information needs for population and health programs, examined various widely used methods of data collection, and considered a number of innovative ideas for obtaining data to strengthen program design and monitoring. The report should be of interest to government officials in both developed and developing countries, officials of other international agencies and donors, and researchers studying public health, nutrition, and population policies.

Several participants at the workshop gave presentations based on short papers that they had prepared. This report provides a summary of the background

papers and oral presentations, the comments of the discussants, and the general discussion at the meeting. For clarity of presentation, some of the material has been reordered so that points now appear under particular subject headings and not merely in the chronological order in which they were raised at the meeting. The intention of the workshop was not to produce a consensus or a set of recommendations, but to stimulate critical discussion of a wide range of possibilities by a multidisciplinary group of experts. Hence, not all participants can be assumed to have agreed with all the statements reported here. All attendees participated as individuals and not as representatives of their institutions. Full paper titles and contact addresses of the authors can be found in the Appendix; copies of the papers can be requested directly from the authors.

The next four sections of the report summarize the proceedings from the four main sessions of the workshop. In the first session, participants discussed USAID's new strategic plan and the agency's changing population health information needs. In the second session, participants discussed the strengths and limitations of the survey approach for monitoring, evaluating, and planning purposes. In the third session, participants examined data needs for evaluating the impact and performance of population and health programs. In the fourth session, participants discussed ways to improve capacity building for data collection and analysis in developing countries. A final section of the report summarizes some of the main themes that emerged at the workshop.

SESSION I: NEW INFORMATION NEEDS

Changing Population and Health Information Needs

Duff Gillespie, director of the Center for Population, Health, and Nutrition (PHNC) of the U.S. Agency for International Development (USAID), described some of the new challenges facing population and health policy makers and their needs for demographic and health information. Since 1972, household surveys have been widely used and respected as reliable sources for key population and health indicators in developing countries. USAID has been a prime sponsor of these surveys for decades, beginning with the World Fertility Surveys and the Contraceptive Prevalence Surveys and continuing with three successive phases of the Demographic and Health Surveys (DHS), as well as surveys conducted with assistance from the Centers for Disease Control (CDC). For many countries, these surveys have provided reasonably accurate estimates of fertility rates and infant and child mortality rates, as well as contraceptive prevalence and method mix over time. Increasingly, the DHS surveys have also provided rich detail on maternal and child health practices, suitable for use in monitoring the outcomes of health programs. While these measures remain at the nucleus of all population and health information needs, more and different information is also needed. For example, information on subgroups and special populations has become increasingly important as greater emphasis has been placed on understanding behaviors and social networks that influence decisions and actions. Thus, survey items and qualitative techniques have been developed to meet a growing need for management information about attitudes and perceptions.

USAID's New Strategic Plan

In an overview of the strategic plan for USAID's Center for Population, Health, and Nutrition, Dawn Liberi discussed the agency-wide process of "reengineering." In the future, USAID plans to be more oriented toward results and to delegate more authority to managers who will be held accountable for achieving results. The new approach is designed to entail collection of appropriate data, improved management, and improved collaboration with development partners.

The agency has four strategic objectives:

- (1) reduce unintended pregnancies;
- (2) reduce maternal mortality;
- (3) reduce infant and child mortality; and,
- (4) reduce sexually transmitted disease (STD) transmission with a focus on human immunodeficiency virus (HIV).

Related to these strategic objectives are program outcomes that emphasize improved quality and accessibility of services and the adoption of positive behaviors by households and communities. In order to assess the effective use of resources at a reasonable cost, USAID staff have identified a set of performance indicators that they consider valid, reliable, and manageable. Liberi asked workshop participants for their ideas on cost-effective approaches for performance indicators, evaluation, and research, and ways to increase sustainability and build greater data collection capacity in developing countries.

In the discussion following Liberi's presentation, several participants distinguished information needs for the design and development of programs from needs for monitoring performance. Although USAID sponsors some of the research needed for the former task—for example, through the operations research projects—some participants said that the agency lacks a systematic mechanism for considering and funding data collection and analysis that would contribute to program design; they also expressed concerns that the reengineering would focus all attention on the monitoring of routine indicators. More broadly, however, many of the workshop participants applauded the USAID strategic plan for its emphasis on greater accountability for program outcomes, though there were also concerns about the potential divergence between strategic objectives developed for USAID and the needs of host countries.

**SESSION II:
ALTERNATIVE DATA COLLECTION STRATEGIES FOR
MONITORING, EVALUATING, AND PLANNING PURPOSES**

The questions addressed in this session included: What are the major advantages and limitations of relying on a household survey based methodology, and how might household surveys be modified to provide better answers to key policy questions? Are there other data collection techniques that could provide quick and relatively inexpensive estimates of key demographic variables with reasonable confidence?

Cross-Sectional Household Surveys

In separate presentations, Julie DaVanzo and Leo Morris discussed the relative merits of household surveys for providing population and health information for monitoring, evaluation, and planning purposes. In the absence of reliable vital registration data, household surveys have been used extensively to provide information for calculating key population and health indicators such as fertility, infant and child mortality, and contraceptive prevalence rates on a representative sample of the population. Increasingly, household surveys have provided rich detail on maternal and child health practices, suitable for use in monitoring the outcomes of health programs. By taking advantage of probability sampling techniques, household surveys can be designed to provide statistics on the general population from a very small percentage of the population of interest. Hence, one of the principal advantages of household surveys is that they can provide reasonably accurate information quickly and relatively cheaply on both users and non-users of services.

Of the four strategic objectives identified by USAID above, household surveys have been most useful for estimating the prevalence of unintended pregnancies and prevailing levels of infant and child mortality. Historically, household surveys have tended to be much less important for producing strategic or management information related to USAID's other two strategic objectives, namely, reducing maternal mortality and reducing the prevalence and incidence of sexually transmitted diseases (STD) including human immunodeficiency virus (HIV).

Maternal mortality is an increasingly important indicator as reproductive health programs are implemented, and several participants discussed the difficulty in getting accurate estimates. DaVanzo noted that the DHS in some countries is in the process of evaluating the worthiness of the sisterhood method (in which women and sometimes men are asked about the number of their sisters who have died in adulthood) to produce indirect estimates of maternal mortality rates. These can be very useful for baseline measurement, but they are not designed to measure short-term changes due to interventions. For direct esti-

mates of maternal mortality rates, DaVanzo noted, large sample sizes and longitudinal or panel designs are needed.

Increased program emphasis is also needed for the development of credible population-based indicators on STDs. In DaVanzo's view, ideal sample household surveys would include both men and women, in a broad age range, rather than only women of reproductive age, who form the sample for most surveys primarily concerned with contraception and fertility. Morris, in his presentation, added that efficient measurement of the impact of programs aimed at reducing the transmission of STDs/HIV will require oversampling of special population groups. When men are needed as respondents for these topics, it may not be useful to select only the husbands of the women in the DHS sample; an independent sampling of men would be needed to get a representative sample of sexually active men for data on topics like condom use. The Young Adult Reproductive Health Surveys (YARHS), for example, have been implemented by CDC to collect data on sexual activity from young people ages 15-24 (Morris, 1993).

Besides self-reports, the collection of biological markers from population-based samples was considered as a possible source of data on STD prevalence. Marge Koblinsky reported that John Snow, Inc., is developing a filter paper test to identify both syphilis and anemia in postpartum women that could be added to a DHS survey. In Ethiopia, DHS staff are providing assistance for a special study of STD prevalence using blood and urine from respondents. Kate Stewart noted that this experimental survey is designed only for baseline measurement and not for monitoring change over time. With biological markers, the participants agreed that practical, logistical, and ethical issues need to be explored, including the costly and complicated logistics of collecting blood and urine samples, the responsibility to treat those identified with an illness, and considerations for protection of privacy.

In her presentation, DaVanzo considered some of the uses of survey data beyond estimation of rates, for example, for studying effects of programs on behavior and health outcomes. One of the chief problems with using cross-sectional survey data to evaluate interventions is that it is often difficult to attribute observed changes in the indicators of interest to particular interventions. Familial, cultural, and environmental factors influence both individual behaviors and program participation and must be accounted for when collecting and analyzing survey data. For example, non-coresident kin (e.g., migrant husbands, grandparents, brothers, etc.) may make important contributions to household income and have a direct impact on fertility and health decisions, which would be overlooked if one focused exclusively on co-resident household members. Thus, to assess the effects of those influences, surveys must collect information on behaviors and characteristics of women and their families and communities, as well as relevant program dimensions. The DHS and similar surveys typically collect only a limited amount of information on family members and socioeconomic characteristics.

Several multipurpose surveys designed by RAND have attempted to provide a better understanding of the myriad of factors that influence demographic and health decisions. DaVanzo suggested that some of the features of the RAND surveys, such as the Malaysian and Indonesian Family Life Surveys (FLS), be considered for other situations. For example, the FLS in Malaysia collected information on:

- health and mortality of all children;
- community and family characteristics;
- household members' earnings and other income;
- migration histories, including dates and locations;
- housing histories, including dates, locations, and water supply and sanitation information about each previous dwelling; and,
- community-level data on family planning and health care facilities.

Collaborating with the Institute for Nutrition in Central America and Panama (INCAP), RAND developed a survey in Guatemala that piggy-backed onto another data collection effort. The RAND survey collected demographic and socio-economic data from households that were being surveyed over a period of time as part of a longitudinal health and nutrition survey. DaVanzo pointed out that the use of existing surveys can provide enriched, high-quality data that covers an extended period of time. Opportunities to piggyback DHS surveys onto other nationally representative surveys such as national labor force surveys, warrant consideration.

In his presentation, Morris discussed several issues that need to be considered when devising population-based household surveys, including determining the appropriate sample size and length of interview. The demand for ever larger surveys has become an increasing problem as policy makers and planners request more refined stratification of statistics on population subgroups and as the goal of successive surveys changes from estimating baseline rates to detecting whether any change has occurred in the baseline over the recent past. Morris gave estimates of the approximate sample sizes needed to measure certain population and health indicators with reasonable accuracy. For most purposes, a sample size of 1,000 is needed, in his view, to measure contraceptive prevalence rates. To reliably measure change in the rate, the sample size would have to be increased by 500 in every year. Estimates of infant or maternal mortality rates requires much larger sample sizes, on the order of 5,000-9,000 women.

The length of interviews was perceived by most participants as an increasing problem. There are always great pressures to include additional topics in demographic and health surveys. For evaluation purposes, analysts want data not only on outcome measures and program participation, but also on ever more numerous independent variables, as well as family and personal characteristics. Morris argued that there is a cutoff point of 45 minutes, beyond which data quality

suffers because of the fatigue of both respondent and interviewer; however, some participants noted that there are examples of well-constructed and well-administered questionnaires that are considerably longer than an hour.

Follow-Up Designs, Panel Surveys, and Other Alternatives

Stan Becker discussed the usefulness of a number of refinements and alternatives to nationally representative cross-sectional surveys for collecting information on key population and health indicators including using reinterviews after household surveys as a way to estimate the reliability of estimates of key parameters. Alternatives to cross-sectional surveys include vital registration data, health facility data, panel studies, and quick cluster surveys.

Follow-Up modules

Amy Tsui suggested that follow-up modules could be used more, to allow intensive interviews with subsamples of respondents selected on the basis of characteristics identified in the first interview. These follow-up interviews could collect data on topics particularly relevant to that subsample or on sensitive issues requiring a long sequence of questions. This design would permit case-control studies (Schlesselman, 1982). For example, a study of practices that pose high risk for HIV transmission could select those reporting in the earlier survey that they had multiple sex partners in the past month for an intensive follow-up on attitudes toward condoms and condom use.

The DHS, Martin Vaessen pointed out, has already started the model of two surveys in some countries, one a standard DHS, the second an intensive study of a special topic. In Egypt, for example, an intensive survey on unmet need for family planning is being implemented in two governorates for which estimates of unmet need were unusually high in analyses of the 1992 national DHS. The design of the National Safe Motherhood Survey in the Philippines provides another model. The sample consisted of DHS respondents who had ever had a pregnancy (almost two-thirds of the original DHS sample, which had included never-married women). The Safe Motherhood Survey, fielded three months after the main DHS, focused on a wide variety of reproductive health topics, in greater detail than would have been possible simply with a module added to the DHS. The implications of this design for cost, as well as for data quality, need to be assessed. Vaessen maintained that a large part of the cost of field work consists of finding and getting to the respondent. Once there, the incremental cost of additional items in the survey is fairly small.

John Casterline and others also supported the idea of modules, asked of selected subsets of a full DHS sample. This approach would represent a compromise between the idea of adding to the length of an interview for everyone and the idea of going back with virtually separate survey rounds. Savings could come

at the expense of complexity for the interviewers (who would have to select which respondent get which modules) and for data processing. However, if there is to be any linkage of the data between the first survey and subsequent modules, the gap between data collection efforts should not be too long.

Reinterview Surveys

An alternative to a single, cross-sectional survey is the follow-up survey, in which some or all of the original respondents are reinterviewed some time after the original survey (for reasons other than quality control or studies of validity of the original data). Two of the main reasons for such designs were discussed at the workshop: producing efficient estimates of change in key variables and of the impact of interventions occurring between the two surveys and splitting up what would otherwise be excessively long interviews. Reinterviews are costly (primarily due to the costs of additional fieldwork) and time consuming, but they allow a more comprehensive check on data quality than do studies of internal consistency of data from a single round of interviews. The DHS has undertaken reinterview surveys in Pakistan and Nigeria. In the Pakistan reinterviews, only about one-third of women reported the same age (or only 1 year older) and only three-quarters of the women reported the same number of children ever born (Curtis and Arnold, 1994). The report on the Nigeria reinterview survey was never made public. Another reinterview survey in Liberia found that approximately 17 percent of the child deaths were unreported in the initial survey (Becker et al., 1993). Robert Black and others argued that studies of data quality and of the validity and reliability of indicators have received too little attention in recent years.

A variant of the household panel design is to reinterview in the same primary sampling units as in an earlier survey. This variant saves some of the cost of drawing a new sample, listing, and mapping. If nationally representative estimates are needed, however, a supplemental sample would be needed if the original sampling frame had become outdated. It also allows efficient estimation of effects of interventions implemented at the community level, for example, opening of new clinics or information, education, and communication campaigns. This design is being used for a DHS survey in Morocco, and it has been used for evaluation of program impact in Tanzania.

Panel Studies

Panel studies, in which members of the same households are respondents in a second survey fielded some time after the original one, are an efficient design for measuring changes in outcomes over time. Locating people who have migrated out of an area or matching originally interviewed people can be time consuming and costly but the value of matched data often makes this design

worthwhile. The Second Malaysian Family Life Survey included a panel of women who had first been interviewed 12 years earlier (Haaga et al., 1994), and DaVanzo pointed out that such surveys produce information on changes over time that cannot be generated by cross-sectional surveys.

Ian Diamond argued that longitudinal or panel studies are the most effective means for evaluating programs. A longitudinal study can collect population and health data together with individual-, family-, and community-level data on socioeconomic status, attitudinal information, local-level social and cultural norms, program characteristics, etc. Considering the high costs of such designs, Diamond proposed that pilot studies be explored in order to examine the concept more fully. If successful and feasible, a multilevel longitudinal framework could be used routinely for evaluations in all countries to monitor national or subnational programs as well as social and economic changes.

Further discussion at the workshop dealt with the potential value of panel studies for obtaining data on sensitive topics, such as sexual practices and income. Such topics are often placed near the end of questionnaires in comprehensive surveys, so that some rapport would have built up between interviewers and respondents (and so the damage done by a termination would be minimized). But a second intensive survey, or more qualitative methods, could yield more accurate results. Respect for cultural sensitivities, the adequacy of interviewer training and motivation, and the self-selecting bias of an interviewer must also be considered.

Vital Registration Data

In countries in which vital registration coverage levels are reasonably high, a relatively low investment from an outside source could make the national data complete enough for many important uses. In particular, these data could provide useful detailed information for analysis by time period and for local areas. Michael Vlassoff reported that the United Nations Population Fund (UNFPA) has devoted much emphasis to supporting national censuses, vital and civil registrations systems that improve the national statistical knowledge base of developing countries.

Health Facility Data

For quick, relatively inexpensive estimates of infant mortality, Becker suggested that the preceding birth technique could be an effective measurement tool. This technique involves asking women who are at a health facility for a delivery or to have their young children immunized whether or not the child from their preceding birth is still alive. There are sample selection biases associated with this technique, however, because interviewees are already preselected by being at

a health facility. To circumvent this problem, an adjustment has been proposed by some researchers (Hill and Aguirre, 1990).

Quick Cluster Surveys

Finally, for determining contraceptive prevalence and fertility, the cluster survey method developed by the World Health Organization for estimating immunization coverage might be applicable (Henderson and Sundaresan, 1982). These surveys have low costs (since they rely on samples drawn without complete listing of households and enumeration of inhabitants) and provide results that are comparable to DHS results (Boerma et al., 1990). Cluster surveys could also be used to estimate infant mortality, but that would require a larger sample size than is needed to estimate more prevalent events. Becker noted that by using both the preceding birth technique and the quick cluster design, infant mortality, fertility and contraceptive estimates could be obtained without a full-scale DHS-type survey.

Qualitative Methods

Qualitative approaches to the collection of population and health information can be useful in identifying and understanding the behaviors and beliefs of a population. Such techniques could be used to increase program managers' ability to design programs and researchers ability to evaluate them.

There was much discussion at the workshop about the potential for using qualitative studies linked to household surveys. John Knodel argued that qualitative studies can complement surveys in three ways: by confirming survey findings; by explaining answers elicited by standardized questionnaire items; and by providing a more complete understanding of issues not addressed by the standardized surveys. Knodel's comments focused on the relative merits of focus group discussions and intensive one-on-one interviews. Each approach has its uses: focus group discussions can elicit rich information on attitudes, perceptions, and motivations, while in an in-depth interview the respondent's own experiences relating to a topic can be explored. Questions on sensitive behavior, such as sexual practices and issues related to HIV risk, could be covered more easily with an individual in-depth interview than in a group setting.

Kate Stewart reported that the Philippines National Safe Motherhood Survey successfully experimented with combining qualitative and quantitative methods for development and implementation on the basis of insights of women's perceptions about complications during pregnancy. She said that additional research is needed to determine how best to ask questions and how to determine the most effective method for gathering qualitative information.

There has been a growing willingness, particularly in USAID missions, to use both qualitative and quantitative data for program design and program plan-

ning. David Oot discussed an in-depth study of sexual practices in Nepal that was instrumental in the design of an HIV communication program (see Cox, 1993). Oot noted the need to determine which of various data collection methods are most effective and useful. National surveys could be complemented by qualitative studies and allow program managers to gain a better understanding of how to improve programs and services. Although much qualitative work is being done on STD/HIV issues, Susan Hassig indicated that there remains a need to develop a methodology that will establish the degree to which qualitative insights and perspectives can be generalized. Hassig noted that some qualitative studies have structured guidelines for moderators or interviewers so that relatively structured data can be examined.

One problem discussed by participants is that qualitative data are not systematically maintained. Knodel suggested that USAID consider greater efforts to coordinate research on qualitative techniques and begin archiving studies. Workshop participants supported the idea that USAID support efforts to establish more systematic methods for the collection and coordination of qualitative studies and also conduct further research to determine best methods, practices, and potentials for linking qualitative and quantitative methods of data collection.

SESSION III: EVALUATING PROGRAM IMPACT AND PERFORMANCE

In this session participants discussed USAID's data needs for evaluating program performance and program impact. Twenty years of lively debate has yet to finally lay to rest the question of whether family planning programs induce, make important contributions to, or are basically superfluous to fertility declines (see, for example, Freedman and Berelson, 1976; Cutright and Kelly, 1981; Lapham and Mauldin, 1987; Bongaarts et al., 1990; Pritchett, 1994a, 1994b; Bongaarts, 1994). Past research on the effect of family planning on fertility has indicated that little can be concluded from trends in indicators alone. Complex multivariate analyses, panel studies, and experiments are the preferred—but by no means conclusive—evaluation methods.

For monitoring and evaluating USAID strategic objectives, Diamond supported the use of DHS programs for national level reporting on fertility rates and infant and child mortality rates. Self-reported survey data on STD prevalence, especially for women, are not very reliable, although the DHS in Ethiopia is testing the idea of collecting body fluids to estimate STD/HIV prevalence.

A DHS survey, in Diamond's view, is not needed annually for fertility or infant and child mortality rates. For local-level information, he mentioned using quick, rapid assessment-type surveys that target particular localities. Eckhard Kleinau noted that program managers find it difficult to choose the data collection method that work best for program monitoring and that is affordable. Program managers are constantly faced with the dilemma of deciding whether to do a rapid assessment of a program or to undertake a full survey to collect the requisite data for program management.

Workshop participants agreed that maternal mortality rates are not needed for analysis of program impact. Koblinsky noted that a better indicator would focus on complications of delivery, or identify where women with complications actually deliver. Researchers are beginning to look at the postpartum period because many maternal deaths occur during that time. One potentially useful indicator of complications for women during delivery is perinatal mortality, which is highly correlated with maternal mortality, but 10 times more prevalent, and thus easier to measure in feasible samples.

In his presentation, Robert Black distinguished between the needs of international agencies for indicators of impact and the needs of program managers. For international purposes, it is usually sufficient to have a nationally representative estimate for each indicator. For national program management, the usefulness of the one overall indicator of program status is limited. Program managers typically want estimates for subnational areas so they can determine which areas are doing well. They may also want to identify underserved clients, who can be targeted for new efforts, or underperforming health services, so they can be the subject of additional training or managerial attention. Black urged USAID to

take care that its legitimate information needs not get out of balance with the direct information needs for program management. Because programs evolve over time, and new elements, such as integrated management of childhood illnesses, require new or modified indicators, the appropriateness of particular indicators needs continual reevaluation.

Black presented his recommendations for health-related indicators serving two purposes: impact evaluation and program performance evaluation. For the former, he proposed an emphasis on assessing medium-term trends in age-specific child mortality rates, HIV or STD infection rates, and in some settings maternal mortality rates. Given the well-documented relationship of child nutrition with mortality, he expressed surprise that child anthropometry had not been included among the outcome indicators sought by USAID. It would be sufficient, in Black's view, to assess such outcome indicators at a national level every 5 years or so. More detailed studies, to assess how these outcome measures are linked with program performance measures, could be done on a case-study basis in selected countries.

Black listed several criticisms of the program objective indicators listed in USAID's strategic plan. He argued that the proposed set of indicators of program performance is too extensive, more than is needed for USAID accountability or monitoring of national programs. Indicators should be limited in complexity to ensure high quality and feasibility of measurement. Limiting the number of indicators, and their complexity, and dropping the evaluation of outcomes from requirements for routine monitoring could allow samples to be large enough to produce province- or even district-level estimates for a few key performance indicators.

Black proposed that USAID sponsor work on development of health facility surveys as well as population-based surveys, because much of the information for performance monitoring should be facility or provider based. He called for greater priority to helping develop national capabilities to produce data and to use data for policy decisions. Lastly, Black proposed that USAID cooperate with other donors to maintain a single database, containing the most current information for all countries on an agreed, limited set of impact and performance indicators. Annual reports could be produced using the most up-to-date information, but this would not require annual measurement of every indicator.

Data on the Accessibility and Quality of Services Provided

In recent years, increased emphasis has been placed on assessing and improving the quality of health and family planning services. Wayne Stinson and Jane Bertrand, in their presentations, argued that quality as well as the availability of services have to be well understood when assessing how and why programs affect health and demographic outcomes in the population. For example, it is misleading to assume that the nearest facility is the one most often used by the

respondent. Understanding and measuring program impact is a critical component of the effective monitoring of programs.

Service Availability Modules

The service availability module (SAM) to the DHS has been used to provide a basis for assessing the relationship between the availability and use of services (Wilkinson et al., 1993). The SAM collects data on family planning services provided to a sample of women who have responded to a DHS interview. Bertrand pointed out that the SAM has been a useful tool for measuring access by measuring time and distance to the nearest service delivery point, and measuring the density or the number of such points per population and geographic area. The SAM collects data on different aspects of facilities (similar to situation analysis discussed below). Data include:

- time and mode of transport to nearest family planning facility;
 - location of facilities offering specific types of family planning and reproductive health services;
 - contraceptive prevalence rates and method by distance to nearest facility;
- and
- percentage of women with an unmet need for family planning who reside near a facility.

The significant benefit of the SAM is that it provides one of the few data sets that link information on facilities with behaviors of populations. Workshop participants favored further research on facility-based information linked to population-based surveys. Use of the modules has been limited due to a number of limitations, such as difficulties in identifying which facility women consider to be the nearest to them and whether or not the data show the actual practices at a facility. A comparison study of SAMs from a facility in Tanzania in 1991 and 1994, however, offers a favorable view of SAM data (Agallba et al., 1994).

The EVALUATION Project is currently considering the use of SAM data in a multilevel panel design to examine the links between family planning programs and increased contraceptive prevalence in clusters at two times. Participants supported the idea of establishing a task force of experts to examine a facility-based survey, especially one using a multilevel panel design.

Situation Analysis

Situation analysis was developed in connection with the Population Council's Africa Operations Research/Technical Assistance Project as an operations research methodology that can rapidly assess the strengths and weaknesses of family planning programs in developing countries (see, for example, Miller et al.,

1991). The demand for situation analysis has increased greatly in recent years as the demand for information on services provided and client perceptions and behaviors has grown. Situation analysis, in Bertrand's view, is useful for describing the ability of programs to provide quality services to clients and for describing and comparing the quality of services actually provided. The core set of procedures for data collection used in situation analysis include:

- examining a representative sampling of facilities within a geographic area;
- taking a complete inventory of equipment and supplies and collecting service statistics over some period;
- interviewing all service providers; and
- observing provider-client interactions and conducting exit interviews of clients.

Andrew Fisher argued that the great appeal of situation analysis is that it identifies problems that managers can address immediately. For example, it can provide extensive information on subsystems at a facility, such as logistics and commodities; staffing issues, including training and experience; supervision and management; data on information, education, and communication (IEC) material and activities; and record keeping. Situation analysis has been an example of a valuable tool that assists researchers in assessing how programs work and why. James Shelton noted that data collection methods such as situation analysis offer a "window to what's going on" at a facility or in determining client preferences.

The limitations of situation analysis include the complexity that has accrued over the years to what was originally thought of as a "quick and clean" analysis. Studies now often have multiple modules and extensive data, requiring complex analysis and evaluation. For example, ensuring that the sample of facilities is a representative sample is not always straightforward. Another limitation is that situation analysis typically does not link service facilities with a specified household population. But there have been several promising examples of studies linking situation analysis data with the DHS information (in Peru, Brazil, and one under way in Tanzania). Fisher and other participants cautioned that the analysis of data from a combined population-based DHS and the facility-based situation analysis is difficult, and more methodological work is needed. Situation analysis is a large and complex instrument, so merging population-based data will require extensive work.

Quality Assurance

Stinson drew a distinction between data needed for monitoring and evaluation and data needed for program management. USAID requires measurements partly for cross-sectional comparisons, while data for program management focuses on utility at the service delivery level that supports local ownership and

responsibility. A comprehensive data management strategy as outlined by Stinson would include:

- quality of service delivery and managerial processes;
- support for problem-solving capacity and routine management;
- effective data use at all levels; and
- encouragement of local level ownership of data and management.

To increase ownership at the program level and improve the quality of services provided, Stinson identified three elements of a health program: quality design, quality monitoring, and quality improvement. Client-focused programs with effective service delivery and management can be assessed through data on clients' needs, social acceptability, and provider preferences. These types of data can be obtained through focus groups and as well as through routine monitoring systems.

Quality control depends on adherence to standard processes by verifying that specific procedures are followed and client needs met. Quality control should include critical managerial and service delivery procedures, but it should concentrate on quality of care and client satisfaction. Exit interviews with fixed questions and rating scales have not generally been useful, in Stinson's view, except where focus groups have previously clarified what clients consider to be the key characteristics of quality. Providers and others in direct contact with clients may gain more useful information (though not quantitative data) by routinely asking empathetic questions and periodically discussing responses with colleagues. Motivating service-level staff and managers to do this may be a critical element for improving service quality. Hassig noted in this regard that the manual for quality assessment of STD/HIV services of the Global Program on AIDS includes in its checklist whether managers have demonstrated an ability to address problems.

Micro-level, client-oriented provider efficient (COPE) methods of data collection may have a major influence on quality assurance at the facility level. However, assessing access and quality of services at a national program level often requires a macro-level approach that includes the use of situation analysis or service availability modules.

In the discussion, Anne Pebley noted that in the area of reproductive health, the role of traditional birth attendants who are located in the village rather than at a health center is often not included in a situation analysis or a SAM. Oot indicated that USAID is seeking to identify a core set of indicators that can serve as useful proxy measures for total service availability and accessibility.

Data collected from survey respondents in households can be linked to data on nearby facilities if the location of both households and facilities can be recorded, either by use of maps or through use of signals from Global Positioning System (GPS) satellites. With some information about local transportation sys-

tems and travel time estimates, these linked data can be used to analyze issues related to physical accessibility of different types of facility and service to different groups of potential users. Ronald Rindfuss discussed the need to monitor infrastructure changes, such as road and transportation changes, to enable programs to better target the placement of facilities. A common problem with facility data used for studies of accessibility, quality of care, and other issues is that they rely on the assumption that clients use the facility of a given type nearest their homes. Amy Tsui described an alternate procedure, used in the PERFORM surveys in India, in which facilities are selected for inclusion in the study based on household respondents' reports of which facilities they actually use.

Data on Costs and Expenditures

Although some estimates exist at global levels, there is relatively little information at the country level about how much programs cost or about household expenditures for particular services. It is very rare to have usable information on costs at the level of an individual facility.

Barbara Janowitz commented that determining the costs of providing family planning services at a macro level, such as a national family planning program, involves a review of financial records and aggregate budgets. But because most developing countries do not allocate expenditures on salaries, facilities, and other shared inputs among the various purposes (such as family planning or maternal and child health services), it is difficult to disaggregate costs for these services. One way of allocating costs of shared resources among family planning and health services is by the proportion of visits that are for each purpose. The EVALUATION project is currently supporting a study using this method to determine family planning costs in three countries.

Janowitz recommended greater effort be devoted to collecting family planning cost data at individual service delivery points: that is, using a "bottom-up" approach rather than the more common method of estimating expenditures at the macro level and allocating them among services. Family Health International has developed methods to collect and analyze cost data on different types of visits. Information such as the number of visits to service delivery sites and continuation rates can be expressed in common terms (for example, costs per couple-year of protection) and compared across contraceptive methods or among regions.

Diamond and Susan Hassig suggested that in allocating costs of staff time, it is important to include an estimate of the time spent by providers on consultations for a particular service, rather than relying only on counts of the numbers of visits. Consultations for STD/HIV prevention, for example, could be more intensive than consultations for continuing contraceptive users.

Time-and-motion studies, patient flow analyses, or client and provider interviews can be used to collect information on how staff time is divided among seeing clients, performing administrative duties, and waiting for clients (or

unallocated time). A high percentage of unallocated staff time may be an indicator of low demand or low quality of services provided. Information on staff allocation ultimately helps identify areas for improvement that could reduce program costs.

For child survival programs, Kleinau noted that there is a need to understand the implications of staff time allocation, especially as integrated case management for health services is being promoted. Time-and-motion analyses would help determine to what extent health workers could take on added service responsibilities. Family Health International is working with a project in Latin America (INOPAL III) to test less costly and nonintrusive means of collecting data on allocation of staff time. Methods under review include patient-flow analysis, staff interviews, use of time sheets, and a combination of these.

Peter Berman proposed greater investments in building capacity at the national level of host countries to monitor costs and expenditures, and he suggested priorities for data collection and analysis. Periodic assessments of total annual national expenditures for services would allow program managers to identify priority program areas and use expenditures as indicators of program outcomes. Analysis of factors influencing change in expenditures is critical for adequate interpretation. With a "sources and uses" matrix, a comprehensive picture of the resource allocation for each program, such as family planning, child survival, HIV prevention, can be examined at the country, district, or local levels and by source of funding (government, nongovernmental organization, donor, user fees).

Program budgets can be used to monitor national expenditures disaggregated within categories, such as outreach for STD education or diarrheal treatment centers. Budget tracking systems are currently being implemented in Egypt through the Data for Decision Making Project (Research Triangle Institute, 1995). Berman suggested that the data could be drawn from some of the information mentioned by Janowitz on costs of services provided.

Berman suggested that new health sector technologies for USAID-supported programs should be subject to cost-effective tests prior to use. Current gaps in information include: cost-effectiveness estimates for certain interventions; bias toward estimates from clinical trials rather than population-based services; lack of estimates for groups of services (in contrast to isolated interventions); lack of comparisons between existing programs. Several participants agreed that much more research is needed in the area of cost-effectiveness.

Rodney Knight questioned whether data on expenditures could be collected without an exceptionally long survey instrument. There was some discussion about fixed costs associated with any survey and even higher costs for follow-up studies, so the length of a survey is not necessarily a negative factor. However, many of the workshop participants seemed more inclined to support a second round of surveys rather than trying to load every item and special topic into an initial survey. Attempting to collect comprehensive information about disease prevalence and incidence, facility utilization, and health expenditures would be a

difficult task. Not only would additional questions be needed, but also a different interview approach, particularly if information such as on expenditures on traditional providers is desired. Several participants mentioned that the household expenditure module developed for the DHS in Indonesia might be worth exploiting further.

There was much discussion about the advantages of using existing data from national household consumption surveys (NHCS) or other surveys to examine expenditure information. Some participants agreed that making better use of large surveys such as the NHCS should be considered, but others noted that surveys such as the NHCS provide only aggregate information on health care expenditures at the household level, rather than attributing expenditures to particular programs or activities.

SESSION IV: INSTITUTIONALIZING DATA COLLECTION IN HOST COUNTRIES

Workshop participants agreed that more efforts are needed to increase the ability of institutions in developing countries to collect, analyze, and report on health and population data. Support for additional training for participating countries' personnel, including development of curricula dealing with survey research and qualitative methods, would help promote such an effort.

Building Local Capacity

Jeremiah Sullivan discussed the efforts of the DHS program to increase the institutional capability of host countries to conduct demographic and health surveys. The DHS program has encouraged institutionalization through on-the-job training, formal training for data processing systems, the provision of equipment, workshops in data analysis, and sponsoring of fellowships and grants.

Enhanced data processing capabilities are an essential aspect of building capacity in developing countries. Sullivan reported that more than 150 people from developing countries have received training in the use of the DHS micro-computer data processing software. Another 120 are scheduled to receive the training by 1997. Furthermore, the DHS has developed mechanisms to assist with further analysis of data to aid policy development and program evaluation. DHS offers short-term technical assistance and analysis workshops for host country staff, along with fellowships and grants. In conjunction with other donors, DHS has established a small grants program for the analysis of DHS data, and, to date, 52 researchers from developing countries have been involved in this program. Workshop participants suggested that summer training programs with United Nations or USAID funding be established to teach statistics and qualitative study methods.

Morris noted that turnover rates of trained host country survey staff often inhibit progress in capacity building. Robert Bush argued that many donor programs subvert the host country statistical offices and systems, essentially displacing them from data collection activities and the decision-making process. He suggested that current DHS projects do not receive adequate funds to support institutionalization in host countries and that effective capacity building to train and use local statistical offices would double the costs of the data collection efforts. However, greater use of local capacity is possible in certain countries, such as Indonesia or the Philippines, both of which have accumulated a substantial reservoir of trained statistical staff because for the last decade they had been sending 10-20 people per year for practical statistical training and graduate education. However, Hermalin noted that as data collection becomes more complex, it may prove to be much more difficult to transfer the requisite knowledge abroad.

Improving Coordination Among Donors

Participants agreed that there is much need to coordinate the services and activities of donor organizations working in developing countries. Establishing standard tools or data systems among donors would greatly enhance host countries' ability to sustain aid projects.

Michael Vlassoff described the work of the UNFPA in supporting censuses, vital statistics systems, and civil registrations, which enhance the statistical knowledge base of developing countries. UNFPA has set up large training activities at national, regional, and global levels and has provided many fellowship and training programs, such as the African Census Training Program. National statistical offices and population planning units have participated in these efforts. UNFPA and other U.N. offices have sponsored the Household Survey Capability Program, which was a global initiative that supported more than 90 surveys undertaken by the countries themselves.

Following the 1994 International Conference on Population and Development in Cairo, UNFPA assessed its own strategic priorities, much as USAID has done. While the change will be gradual, UNFPA envisages that it will focus less on the support of vital registration systems and population censuses and more on linking existing data systems from different sources (e.g., linking administrative data from social sector ministries with census data) and encouraging appropriate geographic and health information systems for management, monitoring, and evaluation activities. Because population and housing censuses have been used to develop sampling frames for DHS and other surveys, Vlassoff suggested USAID consider assuming partial responsibility for their support.

UNFPA is also undertaking the International Reproductive Health Family Planning Survey Research Program to develop new methods and indicators for population and health programs. It is envisioned that an integral part of the project will be improving and expanding management information systems and other health information systems. Two UNFPA data dissemination services are currently available: POPIN is a U.N.-sponsored internet resource network for population information; POPMAP is a software package designed to make practical geographic information systems available in developing countries.

David Daniels reported that the United Kingdom's Overseas Development Administration (ODA) is trying to examine quantitative and qualitative measurements of program outcomes in an effort to develop benchmarks to allow comparisons among programs. Daniels supported ideas of collaborative efforts, especially in establishing a standard set of indicators; Mark Pearson noted that ODA currently uses indicators developed by the EVALUATION Project. Laura Shrestha mentioned an evaluation of the World Bank's population, health, and nutrition projects that were implemented in the 1980s, which revealed that 30

percent of the projects had no indicators and many of those that had input indicators did not have outcome indicators. Last year the World Bank produced a report identifying 10 key family planning indicators as a guide for internal use. A similar guide for reproductive health projects has been produced.

CONCLUSION

In concluding remarks John Casterline outlined a framework for a future model survey instrument based on the workshop discussion. The framework consisted of a survey design similar to a DHS survey but with a refined core questionnaire. An essential feature would be a set of follow-up data collection activities, such as panel and longitudinal activities. The follow-up activities would gather detailed information from special populations or subgroups regarding specific topics or sensitive issues, such as STD/HIV. The timing of follow-up activities could vary between shortly after the initial survey to as much as 3 years later. A firm commitment of funding for targeting, design, and analysis of the data would be required. Proposed sample sizes for the initial survey would be larger than in previous surveys, and the frequency of the data collection of histories would not exceed 5 years, with possible intermediate surveys to assess contraceptive prevalence rates and other standard indicators as needed.

Further research would be needed to ensure that the components of the model adequately suffice for evaluating program outcomes and assessing program impact. Challenges of controlling for certain influential variables would need to be examined. The model framework would impose greater organizational challenges due to the complexities involved with conducting separate interviews with a subset of respondents. Casterline noted that although the organizational capacity to carry out these approaches exists at the international level, it may not within a particular country.

Several other themes were raised throughout the workshop:

- The demand for qualitative techniques has been rising as the need to collect information on behaviors and attitudes increases. Currently, there is limited agreement in the research community as to the best qualitative methods and techniques in a given situation. Further research was suggested, including a systematic assessment of the role and contribution of qualitative data collection and analysis. Participants proposed a separate meeting to specifically address qualitative methods and issues.
- The value of data relating to the quality of services was acknowledged throughout the workshop. It was suggested that further research is needed to examine a combination of situation analysis and service availability modules with longitudinal designs at the areal level, if not at the individual household level.
- Many participants noted that indicators of program outcomes should reflect the needs of program managers in developing countries, including their interest in having data for local, provincial, or regional populations.
- Additional research was suggested on cost and expenditure data for monitoring and evaluating purposes. Increased emphasis on host countries to develop and maintain expenditure data was suggested.

- Suggestions were made for improved capacity building in developing countries. Improved training and fellowship programs were proposed, as well as greater use of existing expertise and facilities within countries.

Throughout the workshop there was much discussion about the invaluable contribution that household survey programs—the World Fertility Surveys, the Contraceptive Prevalence Surveys, and the Demographic and Health Surveys—have made in establishing parameters and baseline estimates for basic demographic information in developing countries. Household surveys have provided quality survey designs that have been a standard source for documenting key indicators. As programs strive to address the needs of their targeted populations, more information is desired about people's attitudes, perceptions, and behaviors, as well as the quality of services. Influential factors that motivate individuals to use or not use the services provided are intertwined in family and community norms and cultures and socioeconomic factors, as well as perceptions and realities of the availability, accessibility, and quality of services. Measurement of all these factors has become an ever-increasing challenge.

REFERENCES

- Agallba, S., P. Bardsley, D. Guilkey, R. Riphahn, and EVALUATION Project Staff
1994 *The Family Planning Service Environment in Tanzania: A Report Based on the 1991-1994 DHS Service Availability Modules*. An EVALUATION Project Paper. Chapel Hill, NC: Carolina Population Center.
- Becker, S.R., F. Diop, and J.N. Thornton
1993 Infant and child mortality in two counties of Liberia: Results of a survey in 1988 and trends since 1984. *International Journal of Epidemiology* 22(5 Supplement 1):S56-S63.
- Boerma, J.T., A.E. Somerfelt, S.O. Rustein, and G. Rojas
1990 *Immunization: Levels, Trends and Differentials*. Comparative Studies No. 1. Columbia, MD.: Institute for Resource Development.
- Bongaarts, J.
1994 The impact of population policies: Comment. *Population and Development Review* 20(3):1994.
- Bongaarts, J., W.P. Mauldin, and J.F. Phillips
1990 The demographic impact of family planning programs. *Studies in Family Planning* 21(6):299-310.
- Cox, T.
1993 The Commercial Sex Industry and Potential AIDS Prevention Interventions in Five Urban Areas in Terai Nepal: An Assessment. Valley Research Group of Katmandu, Nepal, for AIDSCAP/Asia. Katmandu, Nepal.
- Curtis S.L., and F. Arnold
1994 *An Evaluation of the Pakistan DHS Survey Based on the Reinterview Survey*. Occasional Papers Number 1. Calverton, MD: Macro International.
- Cutright, P., and Kelly, W.R.
1981 The role of family planning programs in fertility declines in less developed countries, 1958-1977. *International Family Planning Perspectives* 7(4):145-151.
- Freedman, R., and B. Berelson
1976 The record of family planning programs. *Studies in Family Planning* 7(1):1-40.
- Haaga, J., J. DaVanzo, C. Peterson, and N.P. Tey
1994 Twelve year follow-up of respondents in a sample survey in peninsular Malaysia. *Asia-Pacific Population Journal* 9:61-72.
- Henderson, R.H., and T. Sundaresan
1982 Cluster sampling to assess immunization coverage: A review of experience with a simplified sampling method. *Bulletin of the World Health Organization* 60(2):253-260.
- Hill, A.G., and A. Aguirre
1990 Childhood mortality estimates using the preceding birth technique: Some applications and extensions. *Population Studies* 44(2):317-340.
- Lapham, R.J., and W.P. Mauldin
1987 The effects of family planning on fertility: Research findings. Pp. 647-680 in R.J. Lapham and G.B. Simmons, eds., *Organizing for Effective Family Planning Programs*. Working Group on Family Planning Effectiveness, Committee on Population. Washington, DC: National Academy Press.
- Miller, R.A., L. Ndlovu, M.M. Gachara, and A.A. Fisher
1991 The situation analysis study of the family planning program in Kenya. *Studies in Family Planning* 22(3):131-143.

Morris, L.

- 1993 Sexual behavior of young adults in Latin America. Pp. 231-252 in L.J. Severy, ed., *Advances in Population: Psychosocial Perspectives*. Volume II. London, England: Jessica Kingsley Publishers.

Pritchett, L.H.

- 1994a Desired fertility and the impact of population policies. *Population and Development Review* 20(1):1-55.
- 1994b The impact of population policies: Reply. *Population and Development Review* 20(3):621-630.

Research Triangle Institute

- 1995 Egypt: Budget Tracking System Preliminary Report. Data for Decision Making Project, Harvard School of Public Health, Cambridge, MA.

Schlesselman, J.

- 1982 *Case Control Studies*. Cambridge, England: Oxford University Press.

Wilkinson, M.I., W. Njogu, and N. Abderrahim

- 1993 *The Availability of Family Planning and Maternal and Child Health Services*. DHS Comparative Studies No. 3. Columbia, MD: Macro International Inc.

**APPENDIX
AUTHORS AND PAPERS**

JULIE DAVANZO, RAND, 1700 Main Street, Santa Monica, CA 90406-2138

“The Potential Role of Household Surveys for Providing Population and Health Information for Monitoring, Evaluation, and Planning Purposes”

LEO MORRIS, Division of Reproductive Health (MS K-35), Center for Disease Control, Atlanta, GA 30333

“Comments on Household Surveys as a Data Collection Methodology for Population and Health Information in Developing Countries”

STAN BECKER, School of Hygiene and Public Health, Johns Hopkins University, 615 N. Wolfe St., Baltimore, MD 21205

“Thoughts on Alternatives to Nationally Representative Samples”

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“Qualitative Research Techniques for the Collection of Population and Health Information: Some Comments and Suggestions”

WAYNE STINSON, University Research Corp., 7200 Wisconsin Ave., Suite 500, Bethesda, MD 20814-4204

“Data for Quality Management”

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“Data on Services: Experience in the Population Field”

IAN DIAMOND, Department of Social Science, University of Southampton, Highfield, Southampton, S017 1BJ, ENGLAND

“Data Collection Priorities for Evaluation and Monitoring”

ROBERT E. BLACK, Department of International Health, Johns Hopkins University, 615 N. Wolfe St., Baltimore, MD 21205

"Data for Program Evaluation: Performance and Impact"

BARBARA JANOWITZ, Family Health International, P.O. Box 13950, Durham, NC 27709

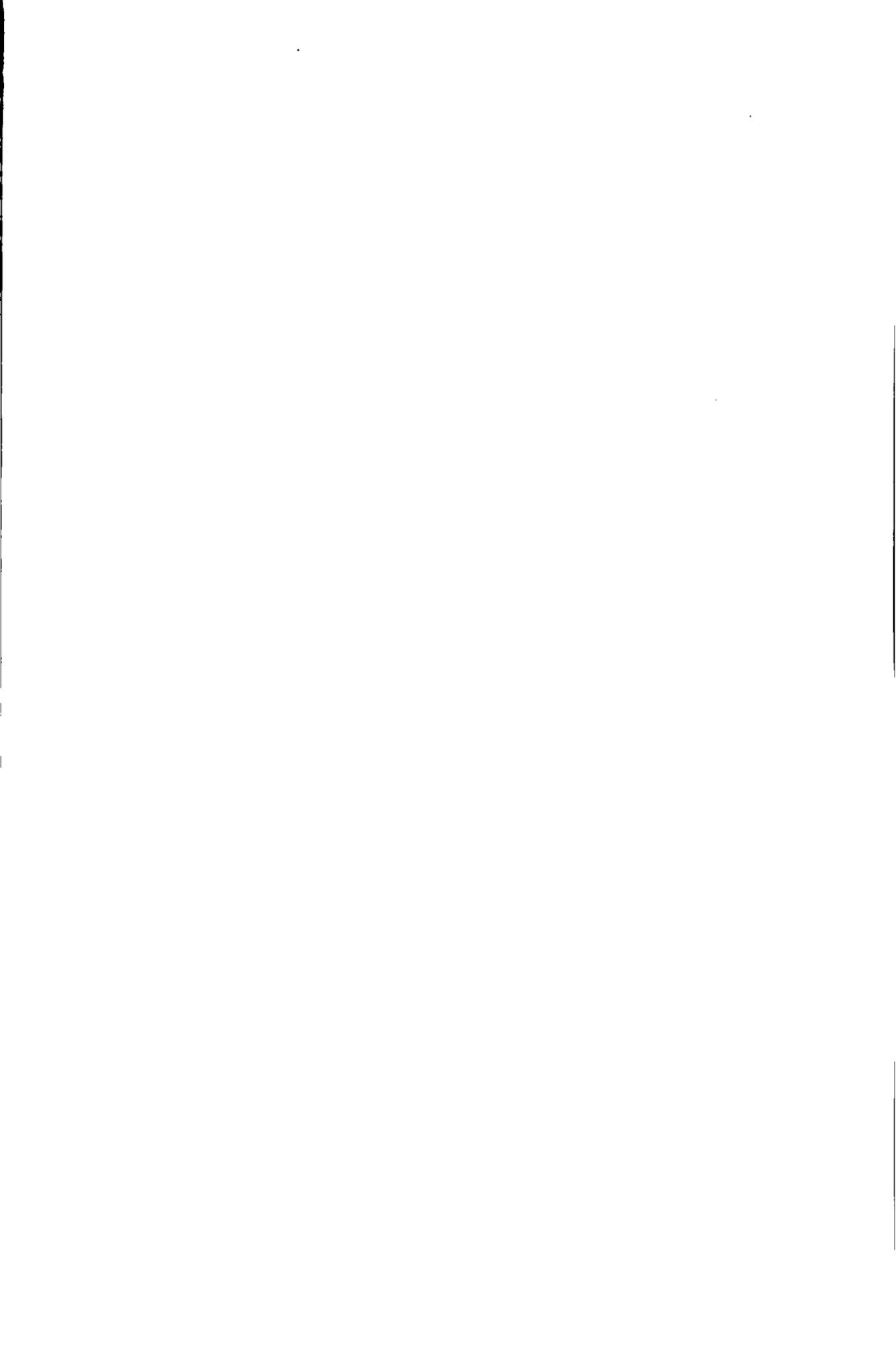
"Data on Costs and Expenditures on Family Planning and Reproductive Health"

PETER BERMAN, Department of Population and International Health, 665 Huntington (Room 1210), Harvard University, Cambridge, MA 02115

"Data Collection Priorities for Data on Costs and Expenditures"

JEREMIAH M. SULLIVAN, Macro International, 11785 Beltsville Drive, Suite 300, Calverton, MD 20705-3119

"DHS Experience with Survey Capacity Building"



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