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WESTINGHOUSE ELECTRIC CORPORATION  
PUBLIC APPLIED SYSTEMS

HEALTH DATA NEEDS:  
PROCEEDINGS OF AN EXPERT PANEL DISCUSSION  
APRIL 8-9, 1985

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## SUMMARY

These are the proceedings of the discussion by a panel of experts at a meeting on Health Data Needs, April 8-9, 1985. This meeting was organized by Westinghouse Public Applied Systems, with funding from the Agency for International Development. The panelists, individuals who specialize in international health and health data, included several representatives of international donor agencies, U.S. governmental agencies involved in international health, and universities.

The discussion of health data needs began with the panel identifying the purposes for which data are collected and analyzed. Topics addressed included the differences between and uses for impact and process data, and the need for data at national, regional, and local levels. The panel also discussed the differing data needs of program managers, planners, policy makers, and evaluators. Based on this discussion, the panel was able to group the data according to why data are needed, by whom and for what purpose will they be utilized. In addition discussions focussed on how these data can be collected.

In discussing the types of data needed, the panel concluded that a large amount of data is already being collected, but there remains a need for certain types of epidemiological data. Future data efforts should be aimed at collecting and analyzing data to answer specific priority questions. The panel discussed several methods of collecting desired data, including surveys, observation, focus groups, sentinel systems, routine surveillance, laboratory diagnosis, and formal reviews.

The panel raised and discussed a number of issues:

- o Health information systems; the flow of data and its uses at the various levels.
- o Priority setting in data collection; establishing priorities among the data that are collected and to simplifying existing data systems.
- o The need to emphasize data analysis; instead of adding more data to what has already been collected, putting more emphasis on tabulating and analyzing existing data.
- o In-country capacity building; the need to train personnel in LDCs to collect, process, and use data to answer specific questions.
- o Training; a way of building capacity in LDCs.
- o Interorganizational coordination; coordination of data collection/analysis activities and being cautious about expanding data collection/analysis efforts.
- o Data quality; expect LDCs to meet the same quality standards as developed countries, realizing and accepting that data of lesser precision may be the best that can be obtained given the level of expertise and conditions in some LDCs.

Other issues discussed included the need for control groups, cost-effectiveness, replicability (scaling-up), the use of microcomputers, and the role of operations research.

The panel looked at gaps in current activities and discussed several needs to explore the relationship between process indicators and impact; to strengthen data collection at the local level; to achieve better linkages between universities and governmental groups; to undertake research in several areas, including causes of neonatal, infant, and child mortality, low birth weight, and the effects of Vitamin A therapy on mortality and morbidity in selected populations.

The panel concluded its work by developing recommendations on the amounts and types of data needed, the use of existing mechanisms, data analysis and use, and coordination and research needs. These recommendations are summarized below.

#### Amount and Type of Data

- o AID should be cautious about supporting any new data-collection efforts. However, there are many existing health data activities that AID could usefully support.
- o Efforts are needed to define a few key indicators of child survival for monitoring the situation of children in general and for serving specific program purposes.
- o AID's support for health data activities should focus on meeting in-country needs, including the needs of local and regional decision makers. These needs are likely to concern the qualitative assessment of health service delivery, as well as outcome and impact variables.
- o AID should collaborate with other groups in preparing now for the international health community's data needs of the 1990s.

#### Use of Existing Mechanisms

- o AID should identify and support opportunities for health data collection, tabulation, and analysis as an adjunct to activities intended primarily to serve other purposes. (An example is the DHS, which is supported by the AID Office of Health.)

#### Data Analysis and Use

- o AID should continue to make contributions to meeting health data needs. In doing so, AID should emphasize support for data analysis and the use of data for decision making, encouraging countries to see health as a desirable objective, worthy of support by political authorities. The areas of greatest need are the following:
  - The analysis of data that are collected with the support of others

- Efforts to analyze data for specific topics, carried out by universities and other institutions.
  - Analyses for policy purposes
  - Technical assistance to developing country data-collection and analysis efforts
  - Training of developing country personnel in the analysis and use of health data
- o As new health sector projects are developed and existing projects renewed, AID should consider adding components that will result in improved data analysis and greater use of health data for decision making.
  - o AID should endorse and support the concept of country-specific "data situation analyses." These analyses would assist a given country to use its data for decision making and to help identify important gaps.
  - o When specific gaps in data-collection activities are identified at the country level, AID should consider providing resources to fill those gaps.
  - o AID should consider the development of a program similar to Resources for the Awareness of Population Impacts on Development (RAPID) that would focus attention on health issues among policy makers.
  - o More attention should be paid to financial concerns, in particular, cost data and the relationships between costs and service utilization.

#### Coordination

- o AID should encourage, support, and participate in efforts to coordinate health data activities at the national and international levels, as well as within the agency itself.
- o AID should work to strengthen university/government relationships in-country.
- o AID should encourage the exchange of ideas among those involved in health data through the continued support of workshops, meetings, and publications.

## Research Needs

- o AID should also support technically sound research activities that address key unanswered health questions, including methods for developing indirect estimation techniques to be applied with incomplete and inadequate data, methods for determining cause of death among infants and young children, research into the relationships between health interventions and morbidity and mortality, research into methods for determining health costs, and research designed to identify health data needs in the future.

## HEALTH DATA NEEDS: PROCEEDINGS OF AN EXPERT PANEL DISCUSSION

April 8-9, 1985

### Introduction

The expert panel discussion on Health Data Needs took place on April 8-9, 1985, at the National Academy of Sciences, Washington, D.C. A list of those attending is included as Attachment A. The purpose of this meeting, organized by Westinghouse Public Applied Systems at the request of the AID Office of Health, was to review, discuss, and make recommendations on health data needs. Given the attention now directed by many organizations to the improvement of health conditions worldwide, including new initiatives such as The Child Survival Action Program and Child Survival and Development, it is appropriate that a group of experts consider ways to meet most efficiently the data needs of program managers, policy makers, donor agencies, and epidemiologists, as well as other researchers seeking solutions to health problems. These concerns are particularly relevant given the limited resources available for health data collection, processing, and analysis, and unresolved methodological and health information problems.

The proceedings of the meeting are summarized below, including opening remarks and discussion, an overview of current health data activities, the purposes of health data collection and analysis, the types of health data needed, methods of data collection, issues to be addressed, and gaps in current activities. A final section of these proceedings presents the panel's recommendations for health data collection and analysis as well as research activities.

## I. OPENING REMARKS AND DISCUSSION

Following welcoming remarks by Lillian Gibbons, Director, Westinghouse Health Systems, and Robert Black, Chair for the meeting, Ann Van Dusen, Acting Director of the Office of Health, Agency for International Development (AID), summarized the purpose of the meeting. She noted that a recent increase in funding of \$85 million, directed at improving child survival through expanded primary health care, has prompted the Office of Health to define health data needs more clearly. In particular, guidance is needed on how to measure the number of deaths averted as a result of the additional funding, and on how to target and track programs, as well as make a case for them. To this end, it will be important to define first what we would like to know, and second the subset of this information that we need to know. More specifically, there are two broad questions to be addressed:

- o Can we identify the minimal data sets needed for design, management, and evaluation in primary health care programs?
- o How close are we to having that information? Do we simply need to develop better mechanisms for coordinating the data now being collected, or are there important gaps?

In the discussion following Dr. Van Dusen's remarks, some questions were raised which helped to clarify the purpose of the meeting. First, the meeting was intended to focus not just on AID's health data needs, but on the needs of the international health service delivery community. Similarly, the focus of the meeting was not to be on the Demographic and Health Surveys (DHS), although that project will certainly make use of the findings and recommendations resulting from the meeting. Also in the opening discussion, a number of issues were raised as topics for further discussion. These included the need for impact vs. process data, levels (national/regional/local) at which the data are needed, and the importance of in-country capacity building. Discussion on these and other topics is summarized below.

## II. OVERVIEW OF CURRENT HEALTH DATA ACTIVITIES

During the meeting, the current health data activities of a number of donors and other organizations were described. In addition, details on these activities were submitted in writing by a number of the participants. These are provided as attachments where indicated, or incorporated into the text in the case of short statements.

### A. AID

In addition to the Primary Health Care Operations Research Project (PRICOR), AID's primary population-based health data collection effort is contained in the DHS (discussed below). Another major AID effort, the Demographic Data for Development (DDD) project, may have important potential application to the health field since it deals with existing data sets; this project is described in Attachment B. Other data collection efforts are associated with specific AID projects.

The DHS, a five-year effort initiated in September 1984, is a follow-on activity to the World Fertility Survey (WFS) and Contraceptive Prevalence Surveys (CPS) undertaken since 1973 and 1977, respectively. This project is funded by AID and is being implemented by Westinghouse Public Applied Systems (WPAS) in collaboration with The Population Council, a prime subcontractor. The project will provide financial and technical assistance for 35 surveys in Africa, Asia, and Latin America, as well as for 25 further-analysis studies of DHS and related survey data.

The project objectives may be summarized as follows:

- o To provide decision makers in the survey countries with a data base and analysis useful for informed policy choices.
- o To expand the international data base for national and international development, health, and population planners, with a focus on conditions during the last half of the 1980s.

- o To make significant advances in methods and procedures for conducting surveys.
- o To support the institutionalization of in-country abilities to undertake demographic and health surveys that meet the technical standards of the international scientific communities.

The project includes four components, one for implementation primarily during the first project year, and the remaining three throughout the project:

- o Develop and test new survey methods and procedures.
- o Conduct 35 surveys (31 of the WFS/CPS type, four in-depth).
- o Disseminate findings (including a new section in Studies in Family Planning to include project results).
- o Conduct further analyses of the survey data.

The core questionnaire will address a number of health topics, including diarrhea treatment, immunization, and anthropometry for children, among others (see Attachment C). In addition to the core questionnaire, the DHS will offer a number of modules that countries can adopt as needed, including one on health.

#### B. World Health Organization (WHO)

WHO has recently developed a set of global indicators of "health for all", but these are broader in scope than AID's concerns. A number of other WHO health data activities may be more directly related to the needs explored by the expert panel. These activities are shown on Attachment D. The WHO programs of particular interest for child health are the Diarrheal Disease Control Programme and the Expanded Programme on Immunizations.

C. Pan American Health Organization (PAHO)

PAHO has undertaken a number of activities designed to address both management/process data and data on health problems of the population. In particular, two seminars, one in the early 70's and the other more recently, focused on epidemiological surveillance. The findings from these seminars indicate that, while the health profile of the population has changed significantly since the first seminar was held, programs have not undergone a similar change. The flow of health data between local and higher levels of health ministries and other service-delivery structures remains a weakness. The more recent seminar concluded that the data are collected at the local level, compiled at higher levels, and returned to the local level, where they are little used. Both seminars also noted an unnecessary multiplicity of reporting forms, as well as a need to expand the focus of surveillance programs beyond infectious diseases.

A primary PAHO goal is to examine data already collected, see that they are put in usable form, and then identify any gaps to be addressed by further data collection efforts. Thus PAHO is cutting back on data collection (e.g., on morbidity), though mortality, socioeconomic status (SES), and demographic data will continue to be gathered.

D. U.N. Statistical Office

The National Household Survey Capability Programme (NHSCP) is addressing the incorporation of health surveys into national household survey programs in developing countries. This effort is described in Attachment E. Several aspects of the NHSCP might be emphasized. First, an attempt is being made to examine experience with anthropometry, with the goal of developing highly focused household modules that can be carried out by personnel of a country's national statistical office; later efforts will focus on health and morbidity modules. Second, there is an emphasis in the NHSCP on developing in-country capabilities, and,

therefore, on training. While the emphasis of the NHSCP is on data collection, attempts will be made to strengthen capabilities in data analysis and use as well. In efforts to help design 5-year programs within countries, some consultant resources can be used for analysis capabilities, and some training funds might also be designated for that purpose. Finally, it was noted that the program is supported by a number of agencies, and that the U.N. Statistical Office welcomes collaboration and assistance.

E. United Nations Children's Fund (UNICEF)

As part of its work on Child Survival and Development, UNICEF funds activities in a number of countries aimed at improving their health information systems and their capacity to undertake population-based surveys on nutritional status and health.

UNICEF is experimenting with the idea of using non-random samples of the population where a sampling frame is not readily available. Health-related indicators are collected from field offices and U.N. organizations, and are published twice a year for the State of the World's Children Report and the Country profiles for the UNICEF Executive Board.

These activities are undertaken in collaboration with WHO and the U.N. Statistical Office.

F. World Bank

Health data compiled from several sources are used in the World Bank for three major purposes: project or program design, sectoral analysis, and statistical reports, e.g., the World Development Report (WDR). These data are used by the borrowers for project monitoring and evaluation, for health statistics, and for research purposes.

The Bank's experiences with health data relate mainly to data used for appraisal and evaluation, and those used for project/program monitoring.

G. U.S. Bureau of the Census

The U.S. Bureau of the Census focuses its health data activities on long-term U.S. training, in-country workshops, and short-term and long-term technical assistance. These and other activities are described in more detail in Attachment F.

H. National Academy of Sciences

Activities of two Academy groups--the Committee on Population and the Board on Science and Technology for International Development (BOSTID)--relate to health data and were discussed briefly at the meeting.

The Committee on Population is interested in a project that would assess the scope and reliability of health indicators. This possibility will be explored during the next few months with a focus on indirect estimation techniques that may be appropriately applied to health data. The Committee will carry out a preliminary project in collaboration with the Institute of Medicine, The Commission on Life Sciences, and BOSTID. This project is the latest in a series that since 1977 has included demographic estimates of fertility and mortality levels and trends, methodology, fertility determinants, relationships between population growth and economic development, and family planning effectiveness.

Among its varied projects in several scientific fields BOSTID health data activities include rapid epidemiological assessment designed to develop methods and procedures for more quickly providing information and feedback on epidemiological questions. BOSTID operates a Research Grants Program that supports research carried out by developing country

institutions in areas important for economic development. Grants are made for specific research projects in selected areas. Grants of a general support nature are not considered. The Committee on Research Grants (CRG) determines project areas and approves grants.

Grant awards are available in the following areas:

1. Grain Amaranth
2. Tropical Trees
3. Biological Nitrogen Fixation
4. Mosquito Vector Field Studies
5. Rapid Epidemiologic Assessment for Health Planning and Decision Making
6. Causes of Acute Respiratory Infections in Children

The total amount of most grants range from \$50,000 to \$150,000 for a period of 2, 3, or 4 years. Research activities may involve basic research, as well as pilot projects and field testing.

In addition, the Institute of Medicine has an effort underway to establish priorities for new vaccine development, based in part on existing data on disease burdens in LDCs.

### III. PURPOSES OF HEALTH DATA COLLECTION/ANALYSIS

The meeting participants agreed that to define health data needs it is necessary first to identify the purposes for which those data are being collected and analyzed. Before turning to the identification of specific purposes, the discussion on this subject focused on two broad concerns, process vs. impact data and variations in needs according to the level (national/regional/local) involved.

A. Process vs. Impact Data

One of the central issues raised at the meeting was the relative need for process vs. impact data. Process data refer to the activities carried out and the services delivered, for example, the numbers of staff authorized and in place, the types and quantities of preventive and curative services provided to children, and the number of vehicles in operating condition, (and the number not operating). Impact data refer primarily to results such as improved health, a reduction in neonatal tetanus deaths and improved nutritional status of children under age 5. Sometimes data users do not distinguish process and impact data clearly. Although the former are needed primarily by program people, the latter are of interest to policy makers and donors, as well as to program managers. While the meeting's participants varied in the emphasis they would place on each of these broad types of data, they generally agreed that both are needed, depending on the specific purpose to be served. The following additional points were made:

- o. Regarding process, the relationships between the client population and the providers are very important and need emphasis, including both quantitative and qualitative aspects. Also, the relationships between services and providers merit attention. Concerning the providers, process questions include: What do they do? How many field visits are made by various levels of staff? What happens regarding the quality of field visit interaction, for example, between supervisors and field workers? What actually results from field visits, in terms of follow-up activities, referrals, client compliance and so on? One can also consider immunization programs as an example of process: What happens to the vaccines throughout the cold chain? What do clients understand about immunizations? Also on process, one can examine what goes on in clinics and other health service outlets, for example regarding waiting time for services, the procedures carried out, and the ways in which providers treat clients. Do physicians listen to clients? How do people choose among various delivery systems, including modern and traditional?

- o Also regarding process, questions need to be examined concerning the administration of services. Where do breakdowns in systems occur, and what is done about them? Who carries the responsibility for system diagnosis and system maintenance?
- o Process indicators at the local level vary with the type of delivery system involved.
- o It is important to consider how process data will be used at higher levels of the system (See Section VI.A. below).
- o Regarding impact data, it is necessary to distinguish between outcome and impact. In this context, outcome refers more to intermediate results, such as the number of staff added to particular health programs as a result of new training activities, say, a school of nursing; whereas impact refers to improved health status, observed in specified ways, such as a reduction in mortality and various morbidities. (Ed. note: The expert group did not take time to discuss more precise definitions of these terms, which are sometimes used inaccurately in the health field.)
- o At the same time, one can look at the disease, not just the process. Thus, in addition to looking at service coverage and utilization, it is important to examine disease occurrence data, such as incidence and prevalence rates on specific diseases. Also, it is very important to explore the relationship between process indicators and impacts, and how such relationships change over time.
- o The kinds of impact data of interest will depend on local needs and preferences (e.g., a focus on child mortality vs. a focus on adult disease).
- o Coverage data (e.g., number of visits to a clinic for a particular disease in relation to the total number of cases of this disease in the area served by that clinic) can suggest changes in the prevalence of that disease (recognizing that other factors must be examined also, e.g., services available).
- o Timing is significant here. For example, one would not attempt to measure impacts of a new program (e.g., in Africa). On the other hand, one might be very interested in baseline data in such cases. Such data provide a greater understanding of the context in which a program is being developed. In addition, when compared against data collected at a later point in time, baseline data can be used to establish trends, that is, whether change has occurred, although these trend data may not permit estimation of the extent to which any change is attributable to the program.

- o It is very difficult to draw conclusions about causality (see Section VI.G. below). A related important point is that, to measure causality, proper experiments would be necessary. Nevertheless, the measurement of causality merits some attention.

#### B. User Needs at Different Levels

The fact that health data needs vary according to the level involved was emphasized at several points during the meeting. For example, there is greater interest in major patterns of morbidity/mortality at the national level, and greater interest in more specific morbidity data and process measures at the local level. At the same time, it was noted that the locus of decision making varies among countries: some programs are defined from the top, while others are based on more local discretion. In general, program design occurs at the national level, while specific targets are set at the local level. However, it was suggested that one might think of a fluid system, always trying to decentralize to the lowest possible level, and varying widely from country to country.

#### C. Specific Purposes

Given that the specific purposes of health data collection/analysis will determine the types of data needed, the various purposes to be served were outlined by the group. To indicate the traceability from these purposes to the types of data needed, and to the methods of data collection, a chart (Figure 1) was developed. The specific purposes of health data collection/analysis are shown in the column labeled "Why," and the types of data and data collection processes in the "What" and "How" columns, respectively. A second chart (Figure 2) suggests relationships between the "what" and the "how". Note that most types of data can be obtained by various methods, and that each method is useful for the collection of two, three, or several types of data. Also, note the complementarity of data collection methods.

FIGURE 1 CHART OF HEALTH DATA NEEDS

Types of Data:

- Process -- service accessibility/usage/effective usage  
Financial -- cost of services; other aspects of household economics  
Impact -- morbidity/mortality reduction; general indicators (nutritional status)

WHO NEEDS HEALTH DATA?	WHY DO THEY NEED HEALTH DATA?	WHAT HEALTH DATA ARE NEEDED?	HOW SHALL DATA NEEDS BE SATISFIED?
<p><b>PROGRAM MANAGERS</b>                      -Local (L)                      -Regional (R)                      -National (N)</p>	<ol style="list-style-type: none"> <li>1) Establish needs/identify geographic areas and high-risk groups (all levels)</li> <li>2) Design program; includes:                              -Set broad targets (N)                              -Set local targets (L,R)</li> <li>3) Measure performance (all levels)</li> <li>4) Assess performance (all levels)</li> <li>5) Justify use of existing supplies: support advocacy for more money/supplies (all levels)</li> <li>6) Present accounts to next highest level (L,R)</li> <li>7) Alter existing demand (e.g., for preventive services)</li> </ol>	<ol style="list-style-type: none"> <li>a) Process/service indicators; access; usage; effective usage</li> <li>b) Qualitative data on service delivery</li> <li>c) Laboratory results</li> <li>d) Morbidity indicators</li> <li>e) Mortality indicators</li> <li>f) Traditional descriptive statistics re morbidity/symptomatology</li> <li>g) SES/Demography</li> <li>h) Health status over time                              -Nutritional status                              -Infant/child mortality                              -Birth weight                              -Incidence of primary diseases (e.g., diarrhea, malaria)</li> </ol>	<ul style="list-style-type: none"> <li>o Periodic population-based surveys</li> <li>o Observation</li> <li>o Focus groups</li> <li>o Specialized studies</li> <li>o Sentinel systems</li> <li>o Service statistics</li> <li>o Laboratory diagnosis</li> <li>o Census/vital registration</li> <li>o Experiments</li> <li>o Longitudinal or panel studies</li> <li>o Routine surveillance</li> <li>o Formal reviews</li> </ul>
<p><b>PLANNERS/ POLICY MAKERS</b>                      -National                      -International</p>	<ol style="list-style-type: none"> <li>1) Determine need to initiate a new program</li> <li>2) Determine program cost-effectiveness (private vs. public)</li> <li>3) Determine whether program should be continued</li> <li>4) Determine whether program should be expanded/duplicated</li> <li>5) Establish priorities for future R&amp;D</li> </ol>	<ol style="list-style-type: none"> <li>a) Disease burden/impact</li> <li>b) Process/service indicators</li> <li>c) Impact measures                              -mortality reduction                              -morbidity reduction</li> <li>d) Financial data</li> </ol>	<ul style="list-style-type: none"> <li>o Existing data collection efforts (e.g., NHSCP, DHS)</li> <li>o Population-based surveys and special studies (e.g., costs)</li> </ul>
<p><b>DONOR AGENCIES</b></p>	<p>Determine effective allocation of resources (finances)</p>	<ol style="list-style-type: none"> <li>a) Trends in health status</li> <li>b) Basic impact measures (e.g., infant/child mortality)</li> <li>c) Causal impact studies</li> </ol>	<p>Avoid duplication; use existing data efforts</p>

FIGURE 2  
 HEALTH DATA NEEDS OF PROGRAM MANAGERS AND PLANNERS/POLICY MAKERS  
 CLASSIFIED BY METHOD OF OBTAINING THE DATA

DATA NEEDED	METHOD OF OBTAINING THE DATA										
	PERIODIC POPULATION BASED SURVEYS	OBSERVATION	FOCUS GROUPS	SPECIAL STUDIES	SENTINEL SYSTEMS	SERVICE STATISTICS	CENSUS VITAL REGISTRATION	EXPERIMENTS	LONGITUDINAL OR PANEL STUDIES	ROUTINE SURVEILLANCE*	FORMAL** REVIEWS
a. PROCESS/SERVICE INDICATORS		X		X	X	X				X	
b. QUALITATIVE DATA ON SERVICE DELIVERY	X	X	X	X						X	X
c. MORBIDITY INDICATORS	X			X	X	X			X		
d. MORTALITY INDICATORS	X			X		X	X		X		
e. TRADITIONAL DESCRIPTIVE STATISTICS RE MORBIDITY SYMPTOMOLOGY	X					X			X		
f. SES/DEMOGRAPHY	X			X			X		X		
g. HEALTH STATUS OVER TIME	X			X		X	X	X	X		
h. DISEASE BURDEN/IMPACT	X			X				X	X		
i. IMPACT MEASURES MORBIDITY REDUCTION MORTALITY REDUCTION	X			X		X	X	X	X		
j. FINANCIAL DATA			X	X							X

\* Includes laboratory diagnosis  
 \*\* Formal reviews are more oriented to the analysis of existing information.

#### IV. TYPES OF HEALTH DATA

As noted above, the various types of health data needed to fulfill the purposes discussed above are shown under the "What" column on Figure 1. It may be noted that these data are needed both to establish baseline information prior to program development and to monitor the progress of a program once established and thus to measure trends. Comments made on these types of data are summarized below.

Service Indicators. These include quantitative data on the availability of health services, their accessibility to the people for whom they are intended, and the number of persons using that service.

Qualitative Data. The emphasis here is not on whether a service/treatment is being used, but how it is being used. The general consensus was that this is best determined by direct observation, generally in the form of supervisory visits.

Supervisory visits do not by themselves always lead to appropriate observation of how a service/treatment is being used. Some supervision takes the form of negative, fault-finding inspection, which may not lead to a critical qualitative assessment and, more importantly, may fail to reveal what might be done to improve the service or treatment.

Morbidity Indicators. The need here varies with the level involved. Generally, the need at the national level is for a broad picture of the health status of the population, and at the regional/local level for more detailed information, depending on particular needs. The need for data among the latter group will also depend on the degree of decision-making autonomy involved. The following additional points were made about morbidity data:

- o There is some question about where the list of diseases of interest ends; there may be some arbitrariness involved.
- o The linkage between service coverage and morbidity indicators itself is an important topic for consideration.
- o As with all health data, the collection and analysis of morbidity data should be governed in part by the practical need for and potential use of the data (see Section VI.A below).

Mortality Indicators. Mortality data are important from a heuristic point of view such as sensitizing senior-level decision makers and getting adequate local resources. Their use may be more questionable for establishing a baseline against which to measure improvements,

although infant and child mortality trends can clearly indicate general changes in health status provided that the data used to measure these trends are collected with a uniform degree of accuracy over time.

Health Status over Time. Several of the expert panelists emphasized the importance of health status information as a backdrop for other health data. In general, data are needed on whether health status is increasing or decreasing, so that the need is for indicators of trends over time. National population-based surveys are sometimes used to obtain information on health status and health facilities utilization. It was observed; however, that in addition to recall and definition problems, two-fifths of the population in developing countries does not use the formal health care system (with wide variation among LDCs); therefore, surveys need to include questions on all health care resources not just formal health systems.

FINANCIAL DATA. Financial or cost data are important for understanding and developing health delivery systems. In addition to overall costs, such as Ministry of Health budgets, costs need to be linked with program activities. Moreover, actual costs per service unit or service activity are needed for proper program management.

#### V. METHODS OF DATA COLLECTION

It was generally agreed that all of the data-collection methods shown under the How column on Figure 1 are important. They meet different needs and are, therefore, complementary; in fact, a combination of methods can often be used. Comments on specific methods are summarized below.

Surveys. Surveys are one of four principal data-collection methods used to collect quantitative information relevant to the health field: census, civil registration, sample survey, and administrative records

(including service statistics). Although one may think more often about the last of these methods, the first two provide, respectively, general information about the population to be served and information about its vital events, including births, marriages, and deaths. The complementarity of these data-collection methods is noteworthy: some methods are intrinsically strong in meeting two or three criteria, but weak or moderate in meeting others; no method is strong on all criteria. This complementarity is indicated by Table 1, adapted from a table in the NAS Committee on Population report Collecting Data for the Estimation of Fertility and Mortality (1981). Note the complementarity of the sample survey and administrative records; for example, on geographic detail, administrative records are strong while the sample survey is weak, but the opposite is true concerning information on the population at risk.

Regarding surveys, it was emphasized that an analysis of the problem(s) should precede the design of a survey. The survey can then properly address the problem(s); moreover, it may be determined that some other data-collection methods might better address the issues involved, and might be used along with or instead of the survey. It was also noted that specially designed provider surveys can yield information about providers and their services; household surveys are a good source of consumer information, including consumer knowledge and attitudes about providers' services. Generally, too, surveys are not a good mechanism for gathering qualitative data. Finally, it was noted that there are several different types of surveys, each useful for a particular purpose. These include panel surveys, coverage surveys (usually at the national or regional level because of resource constraints), knowledge/attitude/ practice (KAP) surveys, mortality surveys, nutrition surveys, and income/expenditure surveys. Panel surveys, in contrast to single-round surveys, can monitor behavior changes one time, while both of these types of surveys permit regional comparisons given adequate sample sizes. Data from panel surveys can be used, cautiously, to draw inferences about causality, and, therefore, they emerge as an important

**TABLE 1: Intrinsic Characteristics of Data Collection Methods in Providing Data Needed to Estimate Fertility and Mortality: A Comparison Using Seven Criteria**

Criteria	Census	Civil Registration	Sample Survey	Administrative Records
Topical detail (richness and diversity of subject matter)	Moderate	Weak	Strong	Moderate
Accuracy	Moderate	Strong	Moderate	Moderate
Precision (absence of sampling errors)	Strong <sup>a</sup>	Strong <sup>a</sup>	Weak	Strong <sup>a</sup>
Timeliness of data	Weak	Strong	Strong	Strong
Geographic detail (subgroups, etc.)	Strong	Strong	Weak	Strong
Obtaining information on population at risk <sup>b</sup>	Strong	<sup>c</sup>	Strong	Weak
Ease of organization in a developing nation	Moderate	Weak	Strong	Moderate

<sup>a</sup>An important qualification must be noted. With respect to arriving at inferences, censuses, CR/VS systems and administrative records are subject to sampling errors. For example, if one has a death rate for a city or country (based on complete registrations and a complete census) or for a specific cause, based on a small sample, and it differs from the death rate in another area (or for another cause), the difference may well be due to the number of observations involved and may not represent any real underlying difference in the cause systems. Thus, when the inference is to a cause system, as is common, census and complete registration results as well as administrative records are subject to sampling errors.

<sup>b</sup>The population "at risk" refers to the group of persons who are subject to the events that are counted, measured, or analyzed. For example, the population at risk for the crude death rate is the entire population in the area under measurement or study. The population at risk for each age-specific fertility rate consists of all women in that age group. The population at risk of infant mortality includes all live-born children during their first year of life. (The infant mortality rate is frequently approximated by dividing the deaths to children under one year of age during a year by the number of births occurring in that year.)

<sup>c</sup>In general, CR/VS systems do not provide information on the population at risk. However, for some measures, such as infant mortality, CR/VS systems do provide data on the population at risk. Also, historical analysis is possible when CR/VS data from earlier periods are available.

approach to consider when the study of causality is desired.. In general, it was agreed that periodic population-based surveys are essential.

Observation. The observation of general health conditions, the health services available, and the ways those services are provided and used by the population can provide valuable information on health status, the use of health services, and the quality of those services. This method is most valuable when the observer is a trained health worker using objective criteria.

Focus Groups. These can also be useful for gathering qualitative information on attitudes, opinions, and behavior patterns. A focus group session is a discussion involving a small number of participants (usually 6 to 12 persons of similar background), under the guidance of a moderator who structures the talk and directs it so as to cover the topics under investigation. Thus, the discussion is informal and the questions open-ended. Focus groups can get at consumer perceptions, utilization of services and suggestions for improvements.

Sentinel Systems. Sentinel systems involve the use of persons stationed in a health facility specifically for purposes of recording information on patients and diseases treated and services rendered. This method can be used to gather information on trends over time. While it works well for gathering detailed information within the health facility setting, it is often expensive. In addition, it can only reflect trends among persons using the health facility, and, therefore, may miss broader events among the general population.

Laboratory Diagnosis. To develop new interventions for reducing morbidity and mortality, or to select priorities among existing possibilities, it is essential to know specifically what makes people ill or kills them. This necessitates laboratory diagnosis linked with other

methods of collecting information. For certain purposes, only pathogen-specific information is of any use; however, it need not necessarily be collected by the expensive epidemiologic/surveillance methods used in the U.S.

Formal Reviews. A formal review of a program is an assessment of existing information by a group of experts brought together for this purpose; a report with recommendations is prepared. An essential additional feature is periodic follow-up designed to assess progress. Formal reviews are useful because they provide an opportunity for program managers to get away from day-to-day preoccupations and, with a few outsiders, to take an objective look at a program.

## VI. ISSUES

In the discussion, a number of issues relating to health data collection and analysis were raised. Primary among these are the need to consider the total information system, including the flow and use of the data within-country and externally, the need to emphasize data analysis, the importance of both in-country capacity building and training, the need for interorganizational coordination, the concern for data quality, and the difficulties involved in ascertaining causality. Other issues raised included the need for a control/comparison group in experimental situations, cost-effectiveness, replicability/scaling up, the use of microcomputers, and the role of operations research. Discussion on these issues is summarized below.

### A. The Information System

One of the major issues raised by the panelists was the need to consider the total information system, in particular the flow of information once it has been collected. It was emphasized that much existing data remain unused by those who formulate policy, whether

because the data do not reach them, because the data are not in usable form, or because policy makers do not know how to use the data collected. This lack of use generates a number of concerns. First, it was noted that priorities for data collection should be determined by the potential use of the data; it is important to start by examining a problem, not a data-collection system. Further, it was observed that people collecting the data are likely not to be motivated unless they believe the data will be used; this is especially the case for health systems personnel in clinics, outposts, etc.

A number of approaches to this issue were suggested. It was emphasized that data collection should be considered as part of the total health information system. Thus there should be attention to the flow of the data from points of collection, both to policy makers in-country and, as appropriate, to donor agencies, with feedback to local points as needed. It was noted that there is often reluctance to release information up and down the ladder of the system. An effective flow of information requires that the data once collected be translated into usable form. More attention should be paid to data tabulation and analysis, both in emphasizing the analysis of existing data, and in incorporating analysis into any new data-collection efforts. (This issue is discussed in detail below.)

Second, in addition to a need for selected training in data analysis, policy makers need to be trained in utilizing the information once it is in usable form. This includes educating policy makers about the power of information as a tool in arguing for policy positions. (The issue of training is also discussed in detail below.) In general, it was suggested that funding for analysis and training activities should be built explicitly into data-collection efforts. Funding should also be used to support policy-development programs.

Finally, the issue of timeliness was raised. There is a keen interest in the reasonably quick tabulation and use of health data by program managers at various levels with feedback to the service units in the case of service statistics information. Thus records that are more than 6-8 months old may lose some of their immediacy, although in many settings, annual data are extremely useful and timely. Therefore, quick turn-around on data tabulation is a worthwhile objective. In addition, health data, particularly data of good quality, have long-term utility when the interest is in trend measures, as is often the case. For example, program managers want to know how health service delivery systems and morbidity patterns are changing over time. Therefore, depending on the purpose involved, given sets of health data can be useful in both the shorter and longer terms.

B. Setting Priorities in Data Collection

The panelists discussed the need to set priorities in data collection. It was generally agreed that a great deal of data is already collected; however, much of that data is unused. New data-collection systems often do not replace but are added to old systems, thereby creating a burden on personnel charged with collecting and processing the data. While greater efforts need to be applied to processing existing data and to simplifying existing systems, there remains a need for epidemiological data, such as disease incidence/prevalence and distribution. In general, there should be parsimony in data collection, for example, by reducing the number of forms and the content involved.

The panelists agreed that the emphasis should be on the entire data process. New efforts in the collection and analysis of data should be based on the need for answers to specific questions; further, priorities among questions, and therefore among the data to be collected, must be set.

### C. Need to Emphasize Data Analysis

As noted above, the panelists generally stressed the importance of analyzing the collected data: data collection should not be an end in itself. Thus, much greater emphasis should be placed on tabulating in useful form and analyzing existing data, and on simplifying the existing data base, rather than on collecting more data (although some needs for epidemiological data remain). This emphasis on analysis in turn raises the funding and training issues noted above. It was observed that one cannot assume that money put into collecting data will be used also for analysis. For one thing, the institutions involved in these activities may be different: certain types of data collection, such as vital statistics, are generally the responsibility of statistical offices, while analytical capabilities may exist, for example, within research universities. Thus a better linkage between these institutions is an important concern, as is a better linkage between statistical offices and other government groups that might appropriately be involved in the analysis and use of the data. Again, funding and training should be explicitly provided for both analysis and use of the data.

As an example of the kinds of support that might be provided, PAHO has a program under which national teams in nine countries have been formed to gather existing data from national groups, put these data on the table, and try to extract from them a health profile of the population. These teams are now being given critical feedback on the resulting documentation.

Two issues emerge here: 1) how best to use existing information, and 2) how to merge the complementary skills of national officials and international donor agency personnel. Another point made in the discussion is that, in competitive research programs, it is often only private institutions that can compete for funds; thus, these institutions may need to coordinate with the appropriate government groups.

#### D. In-Country Capacity Building

The need for building in-country capabilities to collect and analyze the data was emphasized by a number of the panelists. If data collection and analysis activities are institutionalized within-country, a number of benefits result: the activities can be sustained over time, their results will have greater applicability to the needs and programs of the country, and there will be more will to participate among the in-country people involved. These points were emphasized in particular in connection with the NHSCP, which has national capacity development as a primary goal, for example, in building on national household survey programs as a source of information and cooperation. Of course, a key element in capacity building is training, discussed below, and the NHSCP programs organized by central statistical offices must collaborate with relevant ministries such as the Ministry of Health.

#### E. Training

Training is a critical element in the issues of the flow/use of data, data analysis, and in-country capacity building discussed above. It was generally agreed that funding should be directed at a number of training activities. First, regarding service delivery, if inadequacies are found, training should be viewed as a way of resolving them. Second, it is important to provide training in data input/analysis at the level of data collection. This gives the people involved a stake in the collection effort, motivates them, and encourages them to facilitate the flow of the data to higher levels. Third, as noted above, training in tabulation and analysis is also important for those at levels above the collection point. Finally, those at the level of policy making should be trained in using the data for policy purposes--both in advocacy for resources and in decision making on the allocation of resources.

#### F. Interorganizational Coordination

It was suggested that in most areas of health data collection/analysis, someone is doing something, and that there exists a need for better coordination of existing activities. Such coordination would make the best use of scarce resources, particularly those in-country; reduce duplication in data collection and analysis; and maximize the use of existing instruments. Thus, for example, it is important to look at existing data banks to establish trends, and to help improve those data banks if necessary. There was some discussion of whether the coordination of health data activities should be the responsibility of the countries or the donors. In general, it was felt that the responsibility should be shared and that countries should coordinate activities to avoid duplication of effort. For larger-level coordination issues, however, the donors should be responsible. An example of the latter issues is the development of common terminology to permit a linkage between different health data activities. In all of this, the primary goal of in-country data development activities should be recognized.

#### G. Data Quality

In general, the need for quality/precision in the data will be determined by its intended use. A distinction was made between "management quality" and "research quality" data. The former, which might include, for example, rough morbidity or service coverage data, are generally adequate for management-level decision making. The latter would be needed to establish trends or to ascertain causality (see the next section below). There are clear tradeoffs of timeliness and costs involved. Managers need data for decision making promptly. It is also important that the cost of the data collection not exceed the potential utility of the data. Two cautions were noted, however. First, one must be careful of misinterpretation based on imprecise data. Second, it is

important to apply in LDCs the same scientific standards as are accepted in MDCs, given available resources. In this connection, it was emphasized that the issue of the reliability and validity of the data cuts across all of the areas of concern shown on Figure 1, and that the emphasis should be not on creating new data banks, but on increasing the reliability of what now exists.

#### H. Difficulties in Ascertaining Causality

A number of the panelists emphasized the need for caution in identifying causal linkages. To epidemiologists, a causal relationship can be established only when a factor must be both a necessary and a sufficient condition for the occurrence of a disease. This relationship is quite difficult to establish in many cases, particularly for mortality in LDCs. As noted earlier, it was suggested that a distinction be made between outcomes and impacts; for easy determination of the latter, there are frequently too many uncontrollable variables involved. Thus, it is generally best to limit conclusions to the measurement of change, not the reasons for that change. It was suggested that donors in particular should be cautious in making claims about the impacts of programs on mortality levels.

#### I. Other Issues

In addition to the major issues summarized above, there was brief discussion on a number of other issues, as described below.

##### 1. Need for Control/Comparison Group

In general, it was agreed that in assessing interventions, it is important to utilize control areas. At the same time, there are some pitfalls involved. For example, in some cases the study must be done within a relatively short time frame so that the control is not lost. If

experiments are long-term, particular care is necessary to maintain independence between the intervention area and the control area(s). Similarly, in assessing a treatment, one must be sure that treatment is restricted, as is generally not the case, for example, with ORT. Also, the size of the study areas is important: interventions in small areas may not work the same way in larger areas. A water study in Malawi and the Philippines was noted in which a case-control method is being field tested; although it has not yet been assessed, this method may offer insights that would be useful elsewhere.

## 2. Cost-effectiveness

This issue was raised generally in connection with the issue of quality/precision of data discussed above. Cost data, especially expenditure data, are often difficult to obtain, although sometimes there are data in places other than the Ministry of Health. The consensus of the panelists was that there is a tradeoff here, and that it is important to be sure that "the juice is worth the squeeze."

## 3. Replicability (scaling up)

It was suggested that conclusions reached on the basis of local studies need to be examined under normal administrative circumstances before being applied at the national level. In particular, it is important to study how implementation in progressively larger areas occurs. Thus, there should be an intermediate-level implementation. The issue of replicability in this "scaling-up" sense merits special attention on questions such as staff availability, training, administrative structure, supervision, logistics, worker performance, and other aspects of program operations.

#### 4. Use of microcomputers

This issue was raised in connection with the issues of training and national capacity building discussed above. In general, it was observed that the use of microcomputers can provide a great yield for a relatively small investment. Although LDC personnel often require training and technical assistance, the new microcomputers and some available software are easy to use and relatively inexpensive. These machines not only can facilitate more timely tabulation and analysis of the data, but also can serve to encourage Health ministry personnel in LDCs to process and use their existing data.

#### 5. Role of operations research

The question was raised of which mechanism should be used for operations research--the funding of research projects, or institution-strengthening activities. Although there are many possible mechanisms, the emphasis is on the latter, given AID's goal of national capacity building (discussed above). A key AID-funded activity has been the PRICOR project, which provides assistance for small-scale operations research efforts in developing countries; the contractor also makes available technical assistance in all aspects of operations research.

### VII. GAPS IN CURRENT ACTIVITIES

Toward the close of the meeting, the panelists were asked to identify gaps in current health data collection/analysis activities. The following suggestions were made:

- o Regarding the relationships between process/service indicators and impacts, little is known about the relationship between the two. For example, one might explore whether the former can serve as proxy measures for the latter.

- o There is a need to strengthen data collection at the local level, given the fact that all programs are based on what happens at the periphery. It is important to study the behavior of the health delivery system, not just outcomes.
- o There should be a greater linkage between universities and government groups. It was suggested that U.S. agricultural extension universities might serve as a model for such an effort. The creation of linkages between universities and government groups is not easy in many developing nations, and, therefore, merits attention by the donor community.
- o A number of gaps in research activities were identified, including the following:
  - Causes of infant/child mortality
  - Effect of vitamin A therapy on mortality and morbidity
- o There is a need for much more use of health data for policy purposes.

It was also suggested that there should be some study of ongoing national programs--not just the negative experiences, but also the successes. Such a study might address, for example, what makes some health personnel work better than others, or the relationship between the amount and type of supervision and the performance of workers.

#### VIII. CONCLUSIONS AND RECOMMENDATIONS

The conclusions and recommendations of the expert panel on health data needs are summarized below. It is important to note that this list of conclusions and recommendations does not in every case reflect unanimity among the panel members.

##### A. Conclusions

###### Amount of data

- o Although plenty of data are being collected and there are enough data to meet many needs, quality varies, and users often do not possess the skills needed to tabulate and assess

their quality. Also, in many places there is a need for a national overview of the health status of the population, as well as improved data for the health information system at all levels. Thus, there is the combined task of paring down the amount of data collected and collated, and selectively adding needed data (for example on costs) toward the objective of making available more useful data for managers and analysts.

- o In developing nations, there is a great scarcity of population-based data concerning the health status and morbidity of the populations. This is the case at all levels--national, regional, and local. Also, in many places, there is a dearth of current, reliable information on neonatal, infant and child mortality. Many of these countries have deficient civil registration systems, a situation that will exist for many more years.
- o Multiple data sources are valuable, and coordination reduces duplication and encourages standardization.

#### Types of Data

- o Process indicators are needed by program managers.
- o Information on trends over time is needed.
- o Selected impact indicators are needed, but causality is extremely complex to establish and may be worth the effort only in selected situations.
- o Information about the correct use of health interventions is a necessary adjunct to undifferentiated or more general information about use per se.
- o Financial data are needed.

#### Methods of Data Collection

- o Complementarity among data sources should be recognized, given the varying strengths and weaknesses of each data-collection system.
- o Data-collection methods are not always the most efficient and may not result in accurate data. Thus, attention to quality and technical standards should be stressed.
- o Population-based surveys, while useful, meet only certain health data needs.

- o The marginal utility of sophisticated, time-consuming data-collection activities should be weighed against quicker, less thorough approaches. The data-collection activity should be closely associated with the purpose for which the data are needed.
- o Too often, changes in reporting systems add to the burden of collecting data rather than reducing it.

#### Use of Existing Mechanisms

- o Data collection and analysis efforts designed for other purposes may appear to be capable of serving as vehicles for health data purposes. However, piggybacking is not sufficient nor is it always the most appropriate approach; indeed, in some circumstances, piggybacking is dangerous.

#### Data Analysis

- o The analysis of health data does not always yield the most timely, accurate, or complete findings. Here again, attention to quality and technical standards should be stressed.
- o There are seldom enough Ministry of Health personnel who can work with data. Thus, training is important.

#### Use of Data

- o Much of the information being collected does not reflect the information needs of health system decision makers. Technical assistance providers should consider this fact.
- o Findings from health data analysis could be more useful to health program decision makers and policy makers; ways are needed to make findings more clear, timely, accessible, useful, and used.
- o Health data findings could be a powerful political and resource allocation tool if better understood by decision makers, who would find that knowledge about health status and activities would enhance their task of obtaining additional resources.
- o Program managers need information systems that help them manage better, but existing health data systems do not necessarily do this.
- o Access to health data may be limited. The data may therefore, not be available to managers or analysts who could use them.

- o Universities in developing countries can be useful resources if their health data activities are geared towards practical purposes.

#### Data Quality

- o Data are better when personnel responsible have incentives to collect, analyze, and use the data correctly.
- o In general, the quality of the data is correlated positively with the socioeconomic condition of a country.
- o Estimating the denominator is a recurrent problem for health data activities. The complementarity of data-collection methods should be considered as a partial solution.

#### Resource/Financial Considerations

- o Input data are generally better than unit cost data, for example, the number of personnel trained or the number of staff in place.
- o The recurrent costs of data-collection efforts may be a burden to poor countries.

#### Coordination

- o There is a need for better coordination among national and international groups involved in health data collection/analysis, and also among university and government groups in-country.

#### In-Country Capacity Building

- o In-country capacity building is an important goal of health data activities.

#### Future Data Needs

- o There is a need to prepare now for the health data needs of the 1990s so that we will be able to answer the questions that will arise early in that decade. What information will be wanted then that requires attention, e.g., data collection via surveys, during the last half of the 1980s? What new programs are likely to start for which baseline data will be important?

## Research Needs

- o There are a number of health areas requiring research, including causes of infant/child mortality, the relationship between health interventions and mortality/morbidity, methodologies for determining health costs, and ways to determine future health needs. In addition, research is needed on indirect estimation techniques for cases where the health data are incomplete or inadequate.

## B. Recommendations

### Amount and Type of Data

- o AID should be cautious about supporting any new data-collection efforts. However, there are many existing health data activities that AID could usefully support.
- o Efforts are needed to define a few key indicators of child survival for monitoring the situation of children in general and for serving specific program purposes.
- o AID's support for health data activities should focus on meeting in-country needs, including the needs of local and regional decision makers. These needs are likely to concern the qualitative assessment of health service delivery, as well as outcome and impact variables.
- o AID should collaborate with other groups in preparing now for the international health community's data needs of the 1990s.

### Use of Existing Mechanisms

- o AID should identify and support opportunities for health data collection, tabulation, and analysis as an adjunct to activities intended primarily to serve other purposes. (An example is the DHS, which is supported by the AID Office of Health.)

### Data Analysis and Use

- o AID should continue to make contributions to meeting health data needs. In doing so, AID should emphasize support for data analysis and the use of data for decision making, encouraging countries to see health as a desirable objective, worthy of support by political authorities. The areas of greatest need are the following:
  - The analysis of data that are collected with the support of others

- Efforts to analyze data for specific topics, carried out by universities and other institutions.
  - Analyses for policy purposes
  - Technical assistance to developing country data-collection and analysis efforts
  - Training of developing country personnel in the analysis and use of health data
- o As new health sector projects are developed and existing projects renewed, AID should consider adding components that will result in improved data analysis and greater use of health data for decision making.
  - o AID should endorse and support the concept of country-specific "data situation analyses." These analyses would assist a given country to use its data for decision making and to help identify important gaps.
  - o When specific gaps in data-collection activities are identified at the country level, AID should consider providing resources to fill those gaps.
  - o AID should consider the development of a program similar to Resources for the Awareness of Population Impacts on Development (RAPID) that would focus attention on health issues among policy makers.
  - o More attention should be paid to financial concerns, in particular, cost data and the relationships between costs and service utilization.

#### Coordination

- o AID should encourage, support, and participate in efforts to coordinate health data activities at the national and international levels, as well as within the agency itself.
- o AID should work to strengthen university/government relationships in-country.
- o AID should encourage the exchange of ideas among those involved in health data through the continued support of workshops, meetings, and publications.

## Research Needs

- o AID should also support technically sound research activities that address key unanswered health questions, including methods for developing indirect estimation techniques to be applied with incomplete and inadequate data, methods for determining cause of death among infants and young children, research into the relationships between health interventions and morbidity and mortality, research into methods for determining health costs, and research designed to identify health data needs in the future.

**Attachment A**  
**List of Attendees**

April 4 1985

EXPERT PANEL REPORT ON HEALTH DATA NEEDS

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**Attachment B**  
**Demographic Data For Development**

## DEMOGRAPHIC DATA FOR DEVELOPMENT

The Demographic Data for Development project (DDD) at Westinghouse is a world wide 5 year project (October 1982 to September 1987) funded by the Policy Division of the Office of Population, USAID/Washington. The underlying premise for the DDD project is that although good quality population and family planning data are often scarce and sometimes absent in developing countries, it is also true that there is a tremendous amount of existing data that is not utilized. The basic goal of the project is to take unutilized or underutilized population and family planning data and develop the information into understandable and useful formats for policy makers and planners. This is accomplished in a number of ways: (1) providing technical assistance; (2) developing a demographic and family planning data bank; (3) developing population policy briefs; (4) providing reports; and (5) transferring microcomputer technology. In the following paragraphs the preceding activities are commented upon briefly in order to invite consideration of their potential application for the area of health.

### Providing Technical Assistance

DDD staff, working with colleagues from developing countries and USAID, identify existing data in specific countries and provide technical assistance that includes assistance in processing, analyzing and disseminating information. In some countries DDD is working to help maximize the use of census data by planners and policy makers, and in other countries DDD is working to help process, analyze, and disseminate information from population, family planning and health surveys. Surveys where due to data processing problems, termination of donor funded assistance, or other reasons, information from the surveys has never been utilized. As much as possible, DDD works with colleagues within their own countries in carrying out the preceding activities.

### Developing a Demographic and Family Planning Data Bank

DDD has developed an international demographic, family planning and population policy data bank that is maintained on USAID/Washington's computer. DDD also accesses a network of other data banks in order to provide USAID and developing country institutions with readily retrievable information. Information is provided by DDD within a few hours to a few days, depending on the request. Some requests are for easy to retrieve comparative or trend information and others require analysis. A description of DDD's data bank is contained in the attached grey brochure. For persons who are frequent users of the data bank DDD has developed a very easy to use Index that describes all of the demographic, family planning and policy data in the bank. The Index is referred to in the last panel of the grey brochure and is available on request.

Health Data: Because many of the variables of interest to demographers are also of interest to persons in the health field, the DDD data bank contains much health related information. In addition, other Washington, D.C. data banks accessed by DDD contain international nutrition and health data assembled by WHO, FAO and other organizations. Some of these data are trend data stretching over a period of up to 12 years or more.

## Developing Population Policy Briefs

DDD has assembled from the United Nations, International Planned Parenthood Federation and other sources, country specific information on stated population policies. The text for these policy briefs are on microcomputer diskettes and are updated annually. Country specific briefs for 70 countries will be developed by DDD. Briefs are presently mailed to approximately 500 institutions and individuals.

## Providing Reports

DDD through discussion with USAID and other professional colleagues proposes and develops focused reports. Eight reports will be developed by DDD. Here again, the objective is to maximize the use of existing information in population and family planning. One report uses African World Fertility Survey data to demonstrate in a non-technical way the risk factors for infant and child mortality associated with child spacing. A second report draws heavily from Contraceptive Prevalence Surveys and takes an analytical look at what we know, don't know, and need to know about natural family planning. Two other reports in process focus on the use of microcomputers in demography and family planning in developing countries and the use of population data in planning.

## Transferring Microcomputer Technology

The use of microcomputers has been mentioned in preceding paragraphs. Microcomputers are frequently used in helping colleagues in developing countries process and analyze existing data. Emphasis is given by DDD to training colleagues and processing data within in the developing country. DDD has adapted mainframe computer packages for demographic analysis and provides training in using this and other software. The DDD project has both provided microcomputer systems and worked with systems provided by other organizations, e.g., WHO, IBRD, ILO and other USAID funded projects. A basic objective of all these efforts is to ensure that the colleagues in developing countries, with whom DDD staff members work, can and do continue to apply microcomputer technology after DDD involvement in a country has ceased.

## Summary

DDD focuses specifically on population and family planning information. A major objective is to make better and greater use of and disseminate existing information in a format useable by persons that do not have technical training in demography or family planning. Besides the production of information to be used in planning and developing policy, there is another important result that needs mentioning. Colleagues in developing countries are made much more aware of the problems and limitations of their own data. This occurs as they, rather than a separate computer staff, make use of microcomputers to evaluate and analyze their own data. Because the substantive areas of demography and family planning overlap the substantive area of health, some DDD activities lap into the area of health. General DDD activities have been outlined in these brief paragraphs to invite consideration of parallels that may exist between DDD activities and activities that could focus on using health data for development.

**Attachment C**  
**DHS -- Health Content**

DHS -- Health Content\*

<u>Long Form</u>	<u>Short Form</u>
✓	Environmental sanitation - Toilet facilities and water source
✓	Prenatal care
✓	✓ Assistance at delivery
✓	✓ Tetanus toxoid during pregnancy
✓	✓ Infant and child mortality
✓	✓ Immunization record -- children < 3 or < 5 (Health card/verbal)
✓	✓ Diarrhea last 2 weeks - Treatment - from whom
✓	[For dead children - diarrhea during 3 days before death]
✓	Symptomology for children who died under age 30 days
✓	✓ Food intake (types) yesterday
✓	Age started animal/powdered milk on a regular basis
✓	Age started mushy/solid food on a regular basis
✓	? Height and weight children < 3
✓	✓ + Breastfeeding data for fertility analysis

\*This list indicates the topics included, not the detailed questions. For example, in the long form, there are 31 questions on health, plus several on breastfeeding.

**Attachment D**  
**WHO/CDD Activities Related to Health Data**

## WHO/CDD ACTIVITIES RELATED TO HEALTH DATA

1. Literature review on global diarrhoea morbidity and mortality.
2. Manual "Guidelines for National Programme Managers on Planning and Evaluation of National Diarrhoeal Disease Control Programmes".
  - Chapter 1. Describing the Diarrhoeal Disease Problem and Past Control Efforts
  - Chapter 2. Preparation of a Plan of Operations for a Diarrhoeal Disease Control Programme
  - Chapter 3. Evaluation of a Diarrhoeal Disease Control Programme
  - Chapter 4. Conducting a Comprehensive Programme Review.
3. Community Surveys of Diarrhoea Incidence, treatment used, overall under five mortality, and diarrhoea associated under five mortality. Ninety surveys carried out thus far, methodology recently revised, will be-revised again in 1986.
4. Management Information Systems. An annual report requested of all developing countries, wherein they describe status of their control efforts.
5. Programme Managers Training Course. Includes module on Evaluation. Since 1980 course has been participated in by 1 000 staff from 120 countries.
6. Supervisory Skills Training Course. Includes modules, "Monitoring Performance" and "Monitoring and Evaluating Usage". Since 1983 course has been participated in by 1 500 staff from 40 countries.
7. Ad hoc studies, including study of changes in hospital admission and case fatality rates following introduction of oral therapy.
8. Cost Effectiveness Guidelines. Manual being developed to assist programme managers to measure cost effectiveness of ORT.
9. Comprehensive Programme Reviews. Formal reviews involving both national and expatriate staff, in which programme activities at central, regional, and community levels are assessed, and recommendations made for improvement. 17 reviews have been carried out thus far. Recently, a number of WHO programmes, including CDD, have begun testing a similar method, involving a number of elements of Primary Health Care.

Attachment E

U.N. Statistical Office National Household Survey  
Capability Programme (NHSCP)

NATIONAL HOUSEHOLD SURVEY CAPABILITY PROGRAMME

HEALTH SURVEY PLANS

<u>Country</u>	<u>Survey</u>	<u>Year</u>
Botswana	Primary Health Care Evaluation	1983-1984
Ethiopia	Rural Health and Nutrition Surveys	1982-1983
Jordan	Family Health and Demographic	
Kenya	Third Rural Child Nutritional Survey (Module)	1982
Malawi	Family Health	1986
Morocco	Nutrition and anthropometry as part of 1985-86 Expenditure/Consumption Survey and Survey of Nutritional Status of Children under Four (MDH) (Same sample as expenditure survey plus matched supplementary sample)	1985-1986 1985
Peru	National Nutritional and Health Survey	1984
Thailand	Health Module	1986
Zimbabwe	Nutritional Status of Young Children	Annual

Countries Expected to Join the Programme in 1985

Bangladesh	Nutritional Status of Young Children (Part of national income/expenditure survey)	1985-1986
Pakistan	Nutrition and Health of Women, Children and Youth	1985-1986 1987-1988
	Health	1986-1987

### Work Programme of the UN Statistical Office

The National Household Survey Capability Programme of the United Nations Statistical Office, together with WHO and Unicef, is working with developing countries to implement national health interview surveys as part of national general household survey programmes:-

1. The publication of a technical study on "The Role of the NHSCP in Promoting Health Data in Developing Countries";
2. Implementation by six countries of health/nutrition status surveys or modules (Botswana, Ethiopia, Kenya, Morocco, Peru, Zimbabwe) with seven countries planning to implement health surveys in the future (Malawi, Morocco, Thailand, Zimbabwe, Bangladesh, Pakistan, Sri Lanka);
3. The NHSCP is working with the Unicef to develop monitoring and evaluation systems for the child survival and development strategy;
4. The NHSCP with WHO support is working to strengthen health and nutrition survey methodology;
5. The testing in Botswana of a new classification system for primary health care.

The UN Statistical Office also:-

1. Assists governments with surveys of the disabled and prepares technical documents on the use of household surveys to collect statistics on disability;
2. Provides technical cooperation in civil registration and vital statistics and publishes several technical documents designed to assist countries in improving their civil registration systems and vital statistics;
3. Provides methodological guidelines and technical co-operation in national population and housing censuses, a principal source of population denominators for rates and a base for sampling frames.
4. Provides methodological guidance, handbooks, technical reports, etc. on a number of subjects that are important in the over-all efforts of improving health statistics in developing countries, including, for example, work on economic statistics, including national accounts and balances and work on the integration of social statistics.

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**Attachment F**  
**Summary of Census Bureau Health Data Activities**

## SUMMARY OF CENSUS BUREAU HEALTH DATA ACTIVITIES

### Major Activities and Interests of the Census Bureau

Assisting developing countries in conducting censuses and surveys which can provide useful and accurate health data.

Analysis and publication of existing data on mortality and morbidity.

Exploring statistical methods for analysis of existing data.

Developing useful health data bases.

Monitoring and Evaluation of Health Projects and monitoring of country health programs.

Developing techniques for accurately evaluating the effectiveness and impacts of health project interventions.

Improving existing data collection systems.

### Some Specific Activities

Series of publications produced by the Center of International Research

Training and technical assistance for censuses and surveys

Health Trends Data Base for Africa

The Africa Health Trends Data Base (AHTDB) was developed at the request of the Health and Nutrition Division of the Africa Bureau, U.S. Agency for International Development (AID). The system was developed in order to demonstrate trends in health program funding and health status in more than fifty African and Near East countries.

Initially designed for monitoring the relationship between health assistance from different sources and health status over time and for identifying countries in greatest need of assistance, the inclusion of additional demographic, socioeconomic, health and nutrition indicators allows the exploration of a wide range of related questions. For example, changes in patterns of specific diseases can be compared to patterns of donor and host country funding for health activities.

### Monitoring of Health Projects

- Sudan Blue Nile - monitoring of Schistosomiasis Control Project
- Sri Lanka Water - monitoring of a water supply improvement project
- Liberia PHC - health monitoring of the project
- Jamaica - health monitoring system

### Evaluation of Health Projects

- Provincial Water - project health impact evaluation in the Philippines
- Surakarta Water - project health impact evaluation in Indonesia
- Niger Rural Health Development - impact evaluation of primary health care project
- Mauritania - end-of-project evaluation for rural medical assistance project

### Health Data Problems and Solutions

#### Analysis of Existing National level Data on Mortality and Morbidity

##### Problem:

- Lack of reliable data on mortality, cause of death and morbidity.
- Poorly planned and implemented censuses and surveys
- Infrequent censuses and surveys
- Good censuses and surveys are expensive and require trained personnel.

##### Solutions:

The Census Bureau and other organizations have extensive programs to train and assist developing country data collection agencies in planning, conducting, processing and analyzing censuses and surveys. Improved censuses and surveys will provide improved health data.

Simple, useable systems for data capture, editing, processing, tabulation, and dissemination at national and local levels are needed.