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FINAL REPORT

CENTER FOR INTERNATIONAL HEALTH INFORMATION
APRIL 1988 - JANUARY 1994



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The Center for International Health Information (CIHI), a Division of International Science and Technology Institute (ISTI), operates the USAID Health Information System under the Child Survival Action Program support project #930-591113, contract number DPE-951-2000-3004-00 with the Office of Health, Bureau for Research and Development, U.S. Agency for International Development (USAID).

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Center for International Health Information



A USAID Resource

Initially conceived as a project to serve the specific needs of the United States Agency for International Development (USAID), the Center for International Health Information (CIHI) has evolved into an internationally recognized source of high quality and timely health information. The initial focus of CIHI's predecessor project was to design and implement an automated system to help monitor USAID's diverse portfolio in health, including its work in child survival, nutrition, and, more recently, HIV/AIDS prevention. The maintenance of that system as well as its ongoing modification in response to changes in the structure and/or procedures employed by USAID has remained a principal focus throughout the CIHI project while major progress has been made to diversify the functions of the Center in the areas of collection, analysis, and dissemination of other forms of health information.

Perhaps the best evidence of the successful evolution of the Center is USAID's commitment, in the form of a new five-year project, to continue to support the Center and to encourage it to grow as an international resource for health information.

HISTORICAL PERSPECTIVE

CIHI is the follow-on to a three-phased activity sponsored by USAID's Office of Health in the Bureau for Science and Technology (now known as the Health, Population, and Nutrition Cluster of the Bureau for Global Programs, Field Support and Research). Through this activity, USAID hoped to centralize the management and evaluation of data on all its health and child survival programs. The International Science and Technology Institute (ISTI) was the contractor for all three phases of the activity.

The first phase, which began in February 1984, involved setting up a health information system for USAID. It focussed on building a computerized inventory of USAID health and health-related projects. In the second and third phases (initiated February 1985 and August 1986, respectively), the inventory was gradually expanded to include information needed to monitor the health impacts of USAID's child survival initiatives, and

linkages were established with organizations involved in the generation of primary international health data, including the World Health Organization (WHO), the United Nations Children's Fund (UNICEF), the USAID-supported Demographic and Health Surveys (DHS), the Center for Development Information and Evaluation (CDIE) of USAID's Bureau for Program and Policy Coordination, the U.S. Bureau of the Census, and the U.S. Centers for Disease Control and Prevention.

In December 1987, just prior to the scheduled completion of phase three in August 1988, work done under the contract was evaluated by a team of experts who recommended that the Office of Health continue to support the health information system to enable it to expand its scope of work, as well as its base of information users. Accordingly, a proposal was written for a new five-year \$6 million project, and the contract was awarded to ISTI in April 1988.

GOALS AND OBJECTIVES OF CIHI

CIHI -- the name agreed upon by ISTI and USAID for the new project -- had the following broad objectives:

- To develop and maintain computerized databases pertaining to USAID health and child survival programs.
- To improve the quality and availability of data on key indicators and programmatic information for health and child survival.
- To provide USAID program managers and their counterparts with the information they need for planning, managing, and evaluating health and child survival programs.

The scope of work governing CIHI's activities mentioned a number of deliverables in fairly specific terms, but at the same time offered CIHI the leeway to undertake new initiatives in the pursuit of the above stated objectives. This report demonstrates the fulfillment of the contractual requirements of the project, describes selected activities in greater depth and discusses related issues and lessons learned.

One aspect of CIHI's operations deserves special attention at the outset. In achieving the third goal listed above, CIHI did not simply provide information in regular reports and publications, it also functioned as an information "service bureau" for USAID. In this capacity, the Center responded to the hundreds of requests for information that came in from USAID's central and regional bureaus and, on occasion, from USAID field missions. Frequently the routine work of the Center had to be relegated to second priority so that these requests could be met. In recounting CIHI's performance in this retrospective "snapshot," the importance of the dynamic, timely responsiveness to requests from USAID staff needs to be recognized.

EVALUATIONS OF CIHI

CIHI was evaluated both at mid-term and near its originally scheduled termination date. Teams of evaluators, assembled by Statistica, Inc., at the request of USAID's Office of Health, carried out both evaluations.

The mid-term evaluation, submitted in January 1991, summed up the project's accomplishments by stating that CIHI had established a "quality program of health information" and that its information service was "much used" and its yearly Child Survival Report to Congress "highly praised." Other accomplishments noted were CIHI's timely assistance to USAID's Bureau for Planning and Policy Coordination in setting up the Activity Codes/Special Interest (AC/SI) system, its great flexibility and care in improving the Child Survival Questionnaire as a useful tool, and its success in preparing the AIDS/HIV Report to Congress in 1990.

As a result of this favorable evaluation, the funding for the project, which had been greatly reduced in fiscal year 1990, was restored to its original level so that CIHI could fulfill its original mandate.

The final evaluation, submitted in July 1992, was also highly favorable. Special mention was made of CIHI's continued assistance to USAID in developing the AC/SI budget planning system and in supporting the Program Performance Information for Strategic Management (PRISM) system, of its production -- in record time -- of fifteen country profiles describing the health situation in each state of the former Soviet Union, of its creativity in presenting data in diversified reports and wall charts, of its steady improvement of the Child Survival Report to Congress, and of its flexibility, responsiveness, and cooperativeness.

One issue raised by the final evaluation team remains central to the continuing operation of the Center. As noted above, the staff of the Center has purposefully accepted its role as an on-line information service bureau for USAID. The final evaluation team, while praising CIHI for its responsiveness, suggested that it could produce better analyses and more useful reports if its activities were planned more carefully in advance and if the amount of time devoted to responding to ad hoc requests was reduced. Striking a proper balance between responding rapidly to rush requests and developing innovative, useful reports and presentations continues to be a central issue in the management of the project. This issue will be discussed further in Chapter 6: Lessons and Issues.

EVOLUTION OF CIHI

By 1988, the three predecessor activities had established the health information system as the premier source of accurate, up-to-date information about the USAID health and child survival portfolio. When CIHI began, it continued to expand the health statistics database that had been established under the predecessor activities and gradually began to consider alternative vehicles for disseminating the data and information at its disposal.

By the close of 1993, following a brief extension of the project to facilitate the transition to a follow-on activity, which will also be known as CIHI, the project had maintained its reputation as the primary source of information about USAID's health programs while greatly expanding its role in preparing the Reports to Congress on Child Survival, in distributing information to key audiences on the health situation both globally and in individual countries, and in assisting the agency to develop and understand indicators for monitoring health projects and programs. CIHI had grown in its ability to produce high-quality presentations and reports from the information in its archives and had begun to serve an international audience as well as its primary "client," USAID.

ORGANIZATION OF THIS REPORT

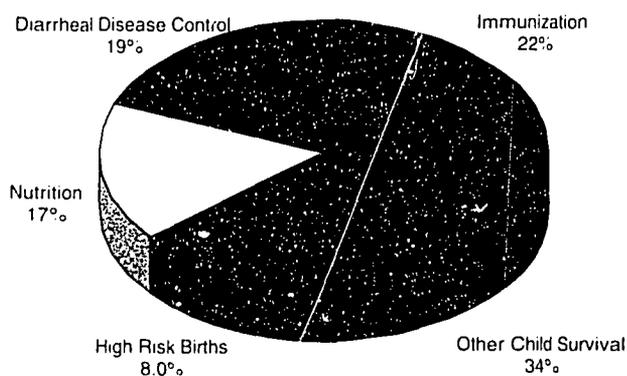
Following this chapter, which provides a short history of the project and points to some of its key accomplishments and unresolved issues, are five chapters offering more detail about the primary activities of CIHI starting, in Chapter 2 and 3, with the two databases the Center has been charged with maintaining and expanding. Chapter 4 discusses the dissemination of information provided by the two databases; Chapter 5, special studies and technical assistance. The final chapter delves into some of the lessons learned and issues raised during the current contract that should be addressed during the follow-on project.



The original *raison d'etre* of the CIHI project, the Health Projects Database (HPD) serves as a dynamic record of the evolution of USAID-supported health projects throughout the world. The information stored within the HPD, most of which has been gathered through an annual Health and Child Survival Project Questionnaire, is used to support USAID in planning its portfolio of health projects, in reporting on various aspects of that portfolio, and in monitoring the allocation of funds to the activities comprising USAID's health and child survival programs.

THE HEALTH PROJECTS DATABASE: This pie graph illustrates one of the HPD's most important applications: monitoring funding trends for health and child survival programs.

USAID CHILD SURVIVAL FUNDING BY INTERVENTION: 1985 - 1992
Total funding for the seven year period - \$1.56 Billion



This last use of the HPD, the monitoring of funding trends, has proven to be the most important application of the HPD throughout the project. Throughout the first four years of the project, CIHI reported on the funding for child survival, HIV/AIDS, and other health by project and, within a project, by intervention or by funding account.¹ Towards the end of CIHI contract, USAID moved away from the account system, and, as will be described later, CIHI modified its system to accommodate the Agency's revised approach to budget preparation.

HEALTH AND CHILD SURVIVAL PROJECT QUESTIONNAIRE

The desire to monitor funding by intervention prompted the design of a mechanism to apportion the funds for a project among different interventions. In brief, that mechanism begins with estimates (called attributions) of the proportions of project funds used in support of specific interventions within a project. These attributions are multiplied by the total funding given to each project to determine the dollar amounts of funds for each intervention. The total

¹At the time when CIHI began, the U.S. Congress made funds available to USAID for specific purposes. A separate "funding account" was established to be used in pursuit of each stated purpose, say child survival or family planning. The need to report back to the Congress on the disposition of these funding accounts guided the original design of the HPD.

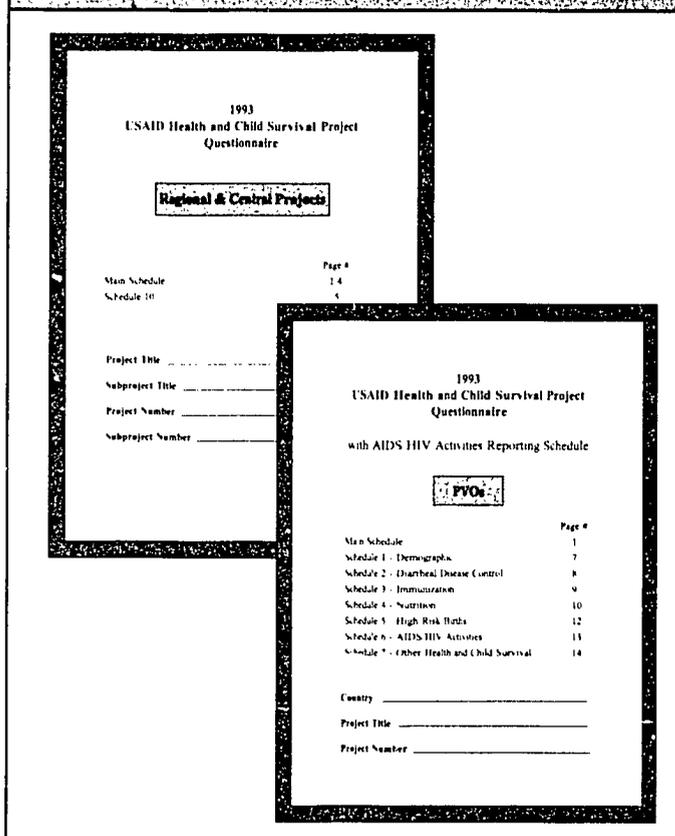
funding for each project is, in turn, reported in a number of different official USAID documents including the Annual Budget Submission (ABS) and the Congressional Presentation (CP). In order to gather the attributions, an agency-wide survey of all USAID-supported health and child survival projects was conceived. The survey, in the form of an annual Health and Child Survival Project Questionnaire, was administered first in fiscal year 1985.

Developed initially by a working group of USAID's Child Survival Task Force and administered for USAID by CIHI, the Child Survival Questionnaire is a self-reporting instrument designed to obtain up-to-date information about USAID-supported health projects. For reporting purposes, the responses to the questionnaire are sought at the conclusion of each U.S. government fiscal year. The survey has become the principal mechanism for capturing information about a variety of program interventions (including the aforementioned attributions): diarrheal disease control, immunization, nutrition, birth spacing, disease control, water and sanitation, AIDS, and the treatment of acute respiratory infections.

Since 1985, questionnaires have been distributed to USAID project managers in all USAID-assisted countries with health and child survival programs; to private and voluntary organizations funded for child survival and vitamin A activities; and to the managers of centrally-funded projects. Over the years the questionnaire has been improved and refined in many ways -- with particular attention paid to making it easier to fill out. In 1988 and 1989, the questionnaire was reviewed by the Survey Research Center of the University of Michigan for both its technical content and format.

In fiscal year 1986, a separate questionnaire was instituted to identify country-specific activities performed by centrally funded projects. In fiscal year 1987, the questionnaire was translated into French and Spanish. In fiscal year 1989, an HIV/AIDS Activities Reporting Schedule was added to the survey document. Working closely with the HIV/AIDS Division of the Office of Health, CIHI modified this schedule several times until a format which served the needs of both CIHI and that division was found. Also in 1989, a Mission Response Form designed to facilitate USAID mission review of the timeliness and completeness of the child

GATHERING DATA FOR THE HSD: To capture funding data by intervention and obtain the most current information about project activities, CIHI developed a set of annual questionnaires which are distributed to all ongoing projects in the USAID health portfolio.



survival indicator data (stored in the HSD) was sent with the questionnaire to all missions. By 1990, there were three versions of the questionnaire: one for bilateral projects, a second for centrally funded PVO grants, and a third for central and regional projects.

Each fiscal year, CIHI's role began with the redesign of the survey instrument to reflect changes in the information needs and/or the program priorities of the Agency. It handled the distribution of the questionnaire to all ongoing projects in the USAID health portfolio. CIHI was also responsible for the data entry and analysis of the data as well as the presentation of the findings through the annual Report to Congress on Child Survival, standard reports, and country health profiles. And, when funding and policy considerations necessitated more detailed analysis of the responses, CIHI was called upon to provide the information requested.

Each year, the data collected in the questionnaires were entered into a distinct questionnaire database. The relevant data for the HPD (and, later, the HSD) were transferred to the appropriate data files as necessary to simplify using the questionnaire data in conjunction with the other information stored within CIHI's databases.

Using the data reported on the Health and Child Survival Questionnaire, CIHI helped USAID develop the capacity to report on activities related to specific interventions within a project and to monitor overall trends in funding related to Agency goals and congressional earmarks. The success of this effort for the health sector prompted USAID to develop an Agency-wide system used for budget planning in all sectors. This system, known as the Activity Code/Special Interest system (AC/SI), is now the official Agency budget planning system. CIHI was called upon to help the Agency with the design of this system and has continued to coordinate both the reporting and analysis of funding information with the Agency office responsible for maintaining that system.

EVOLUTION OF THE HPD

The HPD began as a single data file that tracked basic project, sub-project and "sub-sub-project" (country-level reporting for central projects) information, such as project number and title, general descriptive coding for health activities implemented under the project, and percentage attributions for specific health interventions as reported through the Health and Child Survival Project Questionnaire. The original structure was created to make it possible to monitor the obligation² of funds to projects by appropriation or funding account, so that funding information could be reported to Congress in the form that it requested.

When it was first created during CIHI's predecessor projects, the HPD was constructed on an APPLE computer (the computer in use at that time in USAID's overseas missions) using a computer software program called CONDOR. As the needs of the database changed and as

²The term "obligation" in USAID refers to the act of making funds available for expenditure by the implementer of an activity, a cooperating agency, a contractor, or a host government. The term should not be confused with the term "authorization" which refers to the act of enabling the implementer to receive obligations for subsequent use or with the term "expenditure" which refers to the act of using the money obligated to implement planned activities.

USAID changed its preferred hardware and software, the HPD was converted to a PC computer and DBASE software. The intention was to restructure the database to take full advantage of the relational database capacity of the DBASE program while remaining compatible with the Agency's switch to the IBM PC computer.

This restructuring is an ongoing process because the database must be modified from time to time in response to changes in USAID procedures and practices. Now, as the project is drawing to a close, the HPD consists of several data files which can be combined and manipulated to facilitate different types of analysis and the preparation of a wide variety of reports. A series of computer programs is under development to simplify the linkage of files and to standardize the production of more commonly used reports.

The most significant procedural modification introduced by USAID during the CIHI project was the introduction of the AC/SI system mentioned above. Two years after the start-up of the AC/SI system, the Office of Health agreed that CIHI would report funding data based on the attributions in the AC/SI system. This system was predicated on the assumption that funding accounts would be eliminated (whereas the HPD had been structured specifically to track obligations by funding account). And, the AC/SI system chose to track funding at the project level (whereas the HPD had tracked funding down to the sub-project level). As a result, the original HPD structure became too cumbersome and was rendered obsolete. In the final months of the CIHI project, a number of essential changes were made in the structure of the HPD so as to facilitate its operation with data retrieved from both the Health and Child Survival Project Questionnaire and the Agency AC/SI System.

To forge the linkage with the Agency system, CIHI has had to develop the computer programs to convert data received from a "download" of the AC/SI system from the USAID mainframe computer to a form usable by the restructured HPD. In principle, CIHI could also download other budget data in the Agency's financial management system and link them to the HPD. If desired, CIHI could also merge data from the Health and Child Survival Project Questionnaire data files to the downloaded AC/SI files for comparison purposes.

As modified in 1990, the Health and Child Survival Questionnaire included a new table to track annual expenditures³ for centrally funded health and nutrition projects at country level. CIHI will be incorporating these data into the new structure, a task that will be continued under the follow-on contract authorizing the continuation of CIHI.

SOURCES OF DATA

The sources of data about projects for the HPD have varied over time. The consistent sources have been USAID annual budget submissions, congressional presentations, project abstracts/descriptions from the USAID library, and cables (for updates in project assistance completion

³*Expenditures should not be confused with obligations. The HPD was established to track obligations -- funds committed annually to implement the project. When those funds are spent for Technical Assistance, Commodities, training, etc., they become expenditures. The lag time between obligations and expenditures can be as short as a few days or as long as several years.*

dates, evaluation dates, and project activities throughout the year). A project is included in the HPD if USAID program officers specify in the AC/SI system that it plans to be engaged in health, child survival, or HIV/AIDS activities. Or, if a project is described in any of the other sources listed above as working in the health arena, it will be included in the database. Early in the contract, project specific documents -- project papers, project identification documents (PIDs), and project implementation reports -- were used as source material routinely, but over time these documents have become less available. The annual Health and Child Survival Questionnaire has also provided much of these data and is invariably the major source of data on organizations that implement project activities.

ENTERING DATA

Entering data into the HPD is a labor-intensive task, since the source material is not necessarily in a form that lends itself to computerization. Source material must be searched manually for relevant information, interpreted as to its relevance to and role in the HPD, and, only then, entered into the database. For example, the date of a bilateral project evaluation might be found by perusing a cable describing the writing assignments and in-country travel schedule of an evaluation team fielded by some centrally funded project. Even required USAID documents, which provide useful data for the HPD, may include tables or formats that vary markedly from region to region and country to country. Each unique document must be reviewed carefully to determine if it provides useful and up-to-date information for the HPD.

Data are entered by research assistants or information analysts who review documentation regularly for entry and research discrepancies from different sources. Data are not entered into the HPD unless they have been reviewed and "interpreted" by these analysts.

Project Information					Fiscal Year															
Project #	Project Name	Life-of-Project	Begin FY	PACD	Pre 88	88	89	90	91	92	93	94	95	96	97	98	99	2000	2001	
517-0229	Family Planning Services Expansion	\$8,650,000	1986	1992		■	■	■	■	■	■	■	■	■						
517-0235	Vector Control	\$1,500,000	1986	1990		■	■	■	■											
517-0216	Development Training (Nutrition and Population)	\$15,000,000	1988	1991		■	■	■	■											
517-0242	Accelerated Immunization Program	\$705,000	1987	1991		■	■	■	■											
517-0239	Child Survival	\$5,472,000	1987	1993		■	■	■	■	■	■	■	■							
517-0256	AIDS Support	\$2,800,000	1988	1992			■	■	■	■	■	■	■							
517-0247	PVO Co-Financing OPG (Health and Nutrition)	\$9,500,000	1989	1995**				■	■	■	■	■	■	■	■					
938-PLAN	Child Survival Grant to Foster Parents Plan	\$550,000	1989	1992				■	■	■	■									
938-WVRD	FY91 Child Survival Grant to World Vision Relief & Dev	\$225,000	1991	1994				■	■	■	■									
517-0259	Family Planning and Health	\$30,000,000	1993	2001										■	■	■	■	■	■	

THE MANY USES OF THE HPD
 The HPD tracks funding data essential to producing items such as annual reports to Congress and country profiles, and to responding to ad hoc requests. HPD data was used to create this timeline, a chronological summary of health and population projects in a given country.

Special care has been taken over the entry of attribution data and data on obligations as it is these data that enable CIHI to report funding information. During the early years of the project when attribution data came primarily from the annual questionnaires, each new set of attributions was reviewed by the staff for consistency with prior sets and with the staff knowledge of the substantive work of the projects. When "odd" attributions were reported, CIHI requested verification and explanation of the oddities before using the data in preparing funding reports. This careful review contributed to the growth of CIHI's reputation for accuracy and completeness in reporting funding information. Since the advent of the AC/SI system, CIHI's role in reviewing attributions has diminished somewhat for two reasons: the data in the mainframe computer does not become final in a time frame enabling detailed review of the coding for individual projects and no mechanism exists to facilitate changes in that coding as a result of CIHI's analysis.

USES OF THE HPD

The HPD was developed to track and report funding for child survival interventions by funding account for annual reporting to Congress, as well as to fulfill ad hoc requests for information on USAID funding of all health-related activities. Currently, standard reports are produced annually presenting actual funding trends for budget analyses beginning with FY 85 and extending through FY 92. In addition, estimated funding for future years is included for planning and programming purposes. (See Chapter 4: Dissemination of Information.)

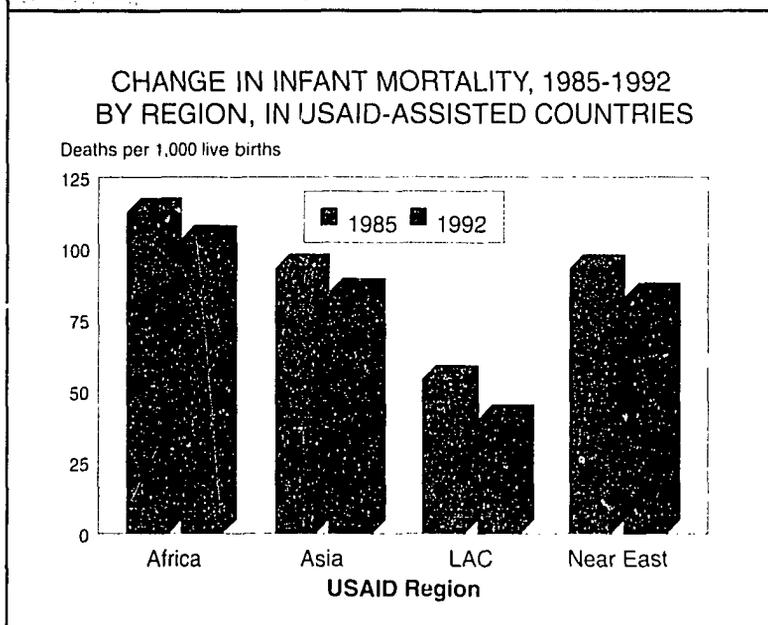
Many times throughout the year, CIHI is called upon to produce reports on ongoing projects funded by USAID, to describe the health, child survival, and AIDS activities of these projects, and to list organizations implementing these projects in all USAID-assisted countries. The HPD remains the only central database that can produce a list of all ongoing projects -- bilateral, regional, and central -- that report health activities funded through USAID. (The AC/SI system reports on projects receiving new obligations for the year in question. Ongoing projects whose activities are supported by obligations received in earlier years and not the current year are not included in the AC/SI system.) And, finally, CIHI remains uniquely situated to analyze and report on funding trends as seen in the context of other indicators of the health status of the people in countries receiving USAID financial support.



HEALTH STATISTICS DATABASE

The Health Statistics Database (HSD) was constructed to facilitate the retrieval of epidemiological and demographic trend data for analysis purposes. Data are entered into the system from a variety of sources, new indicators can be added to the database relatively easily, and simple reports can be generated at a moment's notice.

THE HEALTH STATISTICS DATABASE: Epidemiological and demographic data archived in the HSD by CIHI has numerous applications; USAID bureaus, for example, have relied on HSD data for reporting, formulating policy, and analyzing health issues. The data is presented in many formats, such as the graph below.



CIHI is not the primary source of any of the data currently stored in the database. Rather, CIHI serves as an archive for data, noting the source of every indicator value entered into the system. The primary sources of data include the DHS project, WHO, the United Nations' Population Division, the U.S. Bureau of the Census, other cooperating agencies of USAID, and USAID country missions.

At present, almost all of the values for indicators stored in the system are national in scope; however, the structure of the database is conducive to the addition of values for sub-national geographical ar-

reas if so desired. Data are archived for approximately 190 countries. At first, CIHI gave special attention to the 22 countries designated for emphasis in the child-survival program; now, because the priority assigned to USAID countries has shifted as USAID policy directions have changed, CIHI gives the same attention to all USAID-supported countries. In 1992, 15 additional countries -- the newly independent states of the former Soviet Union -- were added to the HSD.

During the course of the CIHI contract, the data in the HSD have been used by various USAID bureaus in their reporting both within and outside of the agency, in formulating appropriate policy and resource allocation decisions, and in identifying or analyzing particular issues in the health arena.

STRUCTURE AND CONTENT

The HSD consists of a set of data files containing values for a group of related health indicators. The architecture applied in designing most of the data files is similar: one and only one record is reserved for a single value of each indicator. That record contains a number of fields that describe the value: specifically, its time frame, the country (or region within a country) to which it applies, the source from which the value was taken, and one or more necessary qualifiers of the value, such as the age group to which it refers.

The philosophy underlying this choice of architecture is that the HSD should be able to accept multiple, potentially contradictory values for any indicator so long as the source for the value is clearly specified. However, because all sources are not equally reliable and current, one of the fields is reserved to designate the status of the value regarding USAID's willingness to report it. Thus, for example, if a survey generates a value for infant mortality in Kenya, it is possible to include that value in the database along with the estimates produced by the United Nations and/or the Bureau of the Census for the same period. Any of the estimates can be designated as the one to be reported in documents requiring the identification of a single value for an indicator.

Two types of files are constructed in the one-record-per-value-per-indicator manner. The first contains historic as well as current values for the indicators stored within.

This type of data files includes:

- **IMM.DBF** - national vaccination coverage rates (*BCG, DPT 1, DPT 3, Polio 1, Polio 3, Measles, Tetanus 2, DPT Drop Out, and Fully Vaccinated*) over time;
- **ORT.DBF** - national rates for *Diarrhea Episodes, ORS Access Rate, ORS Use Rate, and ORT Use Rate*;
- **CPR.DBF** - national rates for contraceptive prevalence, both for *Modern Methods* and *All Methods*;
- **NUT.DBF** - national rates for a series of nutrition related indicators including, among others, *Adequate Nutritional Status* (the complement of the percent malnourished), *Exclusive Breastfeeding, Complementary Feeding, and Continued Breastfeeding* (during episodes of diarrhea);
- **HIV.DBF** - national rates for *HIV-1 Seroprevalence/Urban* and *HIV-1 Seroprevalence/Rural* based on surveys or studies in low-risk populations;
- **H2O.DBF** - national rates for *Access to Potable Water/Urban, Access to Potable Water/Rural, Access to Sanitation/Urban, and Access to Sanitation/Rural*;

- **MMR.DBF** - Estimates of *Maternal Mortality* and the percentage of deliveries in the presence of a trained birth attendant (*Deliveries/Trained Attendant*).

The second type of data files contains demographic variables received primarily from the United Nations. Each file is specific to a single year. For example, the 1993 values for some 30 demographic indicators, including population, infant and under-five mortality, and total fertility, are contained in a file called WPP93.DBF. Longitudinal data for variables stored in these files can be retrieved only by drawing values for individual years from selected annual files corresponding to the time series desired.

Finally, there are several files which are *not* organized in the one-record-per-value-per-indicator manner. These contain the longitudinal values for demographic indicators provided by the United Nations via their biannual World Population Prospects data tape. The World Population Prospects provides estimates for selected indicators (for example, infant mortality) for five-year periods, while estimates for other indicators (for example, total population) are for single years. In the HSD, two data files are retained with the time series sequences of these variables, one with the five-year period estimates (WPPLONG1.DBF) and one with the single year estimates (WPPLONG2.DBF). (By interpolating between values in these two files, CIHI creates the starting point for the individual year files described above.) During the final year of the project, an additional longitudinal file was created with estimates of infant and under-five mortality over time. This file (TSMORT.DBF) contains time-series data on mortality from sources other than the World Population Prospects.

One of the attractive features of the structure of the HSD is the ease with which the source of data can be stored and retrieved. One of the fields reserved to describe each value in the one-record-per-value files or the entire time-series in the files for longitudinal data designates the source of the data. Using the codes for this field (SOUR_NUM) and the features of DBASE that make it a relational database, each record of this set of data files can be linked to a separate file (SOURCE.DBF) that contains both a full or an abbreviated citation for the source. By linking the files, reports using a given value can also note the source of that value.

SOURCES AND DATA ENTRY

- *Health Status and Service Statistics*

The health status and/or service statistics, stored in the files that contain current as well as historic values for each indicator, come from a variety of sources. WHO serves as the starting point for data on vaccination coverage rates, diarrheal disease control programs, maternal mortality, and water and sanitation coverage. WHO's Expanded Programme on Immunization (EPI) updates vaccination coverage rates approximately twice a year, and its program for the Control of Diarrheal Diseases and Acute Respiratory Infections (CDD/ARI) updates diarrheal disease control data yearly. WHO data on access to water and sanitation have been released less frequently; maternal mortality data were published only once in an archive of studies done around the world. New nutrition data comes largely from the DHS surveys; historical nutri-

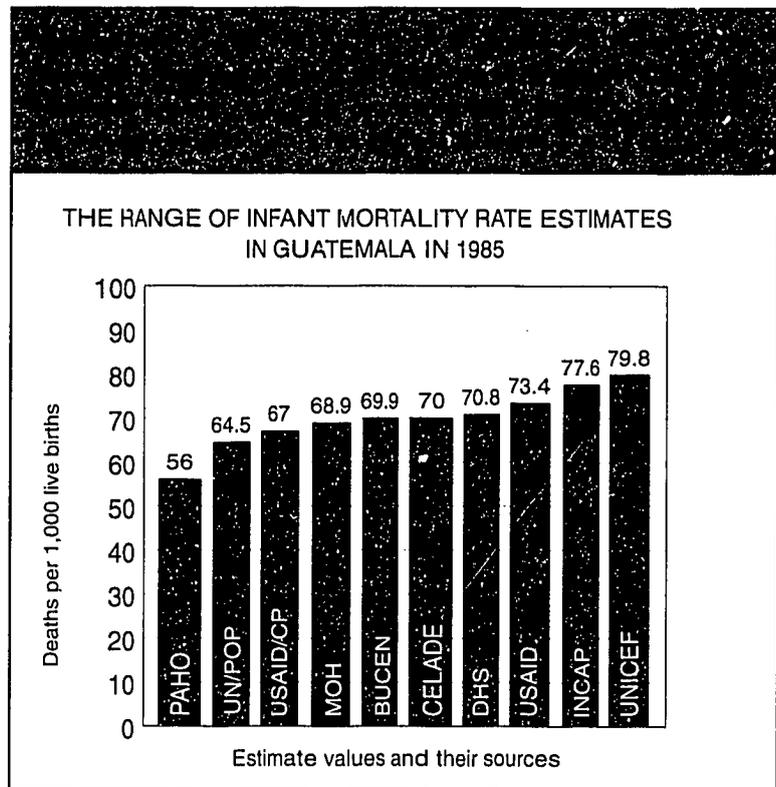
tional status information came from WHO. Similarly, new contraceptive prevalence information comes from the DHS surveys; historical rates were taken from the biannual U.S. Bureau of the Census publications. Data on HIV seroprevalence are issued by the U.S. Bureau of the Census approximately twice a year.

Other values for indicators in all of the data files come to CIHI and are entered into the database as they become available or as CIHI learns of their existence. DHS reports on national surveys are sent to CIHI as they are released. Their arrival, or the arrival of reports

of other survey efforts at national level, triggers the updating of almost all of the files in the HSD. Whenever values are cited in the literature or in cables exchanged between USAID/Washington and country missions, they are entered into the appropriate data files. And, once a year, at the time the annual Health and Child Survival Project Questionnaire is sent to the missions, the Health-Population-Nutrition Officer is given the opportunity to inform CIHI of any known data existing in-country that are more current than the CIHI data or otherwise felt to be more accurate.

The reports or data tapes which come from the U.N., WHO or the Bureau of the Census contain values for all countries of the world for which data are available. CIHI updates the appropriate data files in the HSD by entering all new data in the standard format and comparing each potential new entry with the values marked in the database as those to be used in describing a country's current health situation. In 90% of the cases or more, the newer value is designated to replace the older one as the value of record by receiving a STATUS of "1," while the older value has its STATUS changed to "2". However, in some cases, where the value already in the data file is thought to be more appropriate than the new value, the earlier value is retained as the value to be reported for the country in question.

In general, CIHI will give a "1" STATUS rating to data obtained from survey results rather than administrative estimates (estimates generated from ongoing, field-based health information systems) or indirect estimates generated from models. Generally, newer values are judged most current, and values supported by USAID missions, regional bureaus, or cooperating agencies are chosen over values reported by sources outside of the USAID community. Finally, values that form a consistent and believable pattern with historic values are preferred to values showing highly dramatic shifts in trends over time.



In instances where multiple possible values exist for an indicator and some meet one subset of the criteria while others meet the other subset, a judgement as to which value to report must be made. Whenever possible, CIHI searches for more information about conflicting values for the same indicator and often finds contextual information that might serve to recommend one set of values over the other.

■ *Demographic Data*

Following the guidance of USAID's Child Survival Task Force, CIHI accepted the World Population Prospects as its primary source of demographic data. These data are released every two years. During the early years of the CIHI contract, CIHI arrayed the World Population Prospects data in LOTUS spreadsheets. Regional aggregates for selected variables were calculated and all demographic data were reported using those spreadsheets. When other valid sources emerged for many of the same variables included in the World Population Prospects, CIHI concluded that the spreadsheet format was no longer adequate given the nature of requests received. Therefore, midway through the project, with the publication of the 1990 World Population Prospects data tape, CIHI switched from the LOTUS to the DBASE format for demographic data.

In collaboration with the Economic and Social Data Service (ESDS) of USAID's Center for Development Information and Evaluation (CDIE), CIHI retrieved information from both the 1990 and 1992 World Population Prospects data tapes and "processed" it to put it into the structure described above. This processing included coding the information as it is used in the HSD as well as interpolating single year values from the five-year period estimates on the tape.

As already noted, data from other reputable sources for values of selected demographic indicators reported by the United Nations have become more plentiful, especially given the growth of the USAID supported DHS project. Values from these other sources are entered into the database and coded, as described above, to denote their reporting status.

In the final year of the project, the estimation of mortality rates -- both infant and under-five - received special attention. A new set of estimates for mortality was generated for 82 countries for publication in the World Bank's *World Development Report* for 1993 and in the UNICEF publication entitled *The Progress of Nations*. Based on a curve-fitting model, the methodology applied to generate these new estimates purports to depict trends more accurately than other demographic models because they are based on all available, historic, empirical data for the country in question.

In order to select the mortality values to be reported in the Eighth Report to Congress on the USAID Child Survival Program, a consultative process was initiated involving representatives of USAID's Office of Health in what was then the Bureau for Research and Development (successor to the Bureau for Science and Technology), USAID's regional bureaus, and, in many cases, its country missions. The group determined which source best reflected reality in each country for the current values of infant and under-five mortality and then applied one of a number of computational procedures, depending on the source selected for the current value, to estimate, retrospectively, the historical trends for each rate.

The entry of data into these demographic databases is an ongoing process. A new cycle begins upon receipt of the World Population Prospects data tape. (To avoid the step of "downloading" the data from the tape to diskette, the data could be purchased on diskettes from the United Nations.) New annual files are produced using a series of programs created for that purpose. Then the data from other than United Nations sources have to be appended to the current file and the STATUS field adjusted to assure that one and only one value for each indicator is designated as the "value to be reported by CIHI on behalf of USAID."

When new data are received, either from a DHS survey, a communication from a mission, or some other valid source, the new entries are made in the database using the data entry facilities of DBASE. The most common additions to the data files are new values for mortality rates, population estimates, and total fertility. When either the population estimate, crude birth rate, or infant mortality rate changes, CIHI recalculates values for three or four of the other indicators:

Number Of Births = Total Population X Crude Birth Rate

Annual Infant Deaths = Number Of Births X Infant Mortality Rate

Surviving Infants = Number Of Births - Annual Infant Deaths

Children Under Age 1 = Number of Births X 0.3 + Surviving Infants X 0.7.

Every year, at approximately the time when the current indicators in the database are sent to the USAID country missions for review (when the annual Health and Child Survival Project Questionnaires are forwarded to the missions), the annual file for the upcoming Report to Congress is created using the World Population Prospects as the starting point but including all of the values available from other sources.

■ *Other USAID Data Activities and the HSD*

The HSD is recognized throughout USAID as a reliable source of information on health statistics. During the final year of CIHI, efforts were made to determine the best way to give USAID personnel on-line access to the data through USAID's internal computer network. Technological limitations -- hardware- and software-related -- confined on-line access to display of the data in LOTUS spreadsheets without identification of the sources. The Bureau for Latin America and the Caribbean and, to a limited extent, the other regional bureaus as well, obtained this type of on-line access.

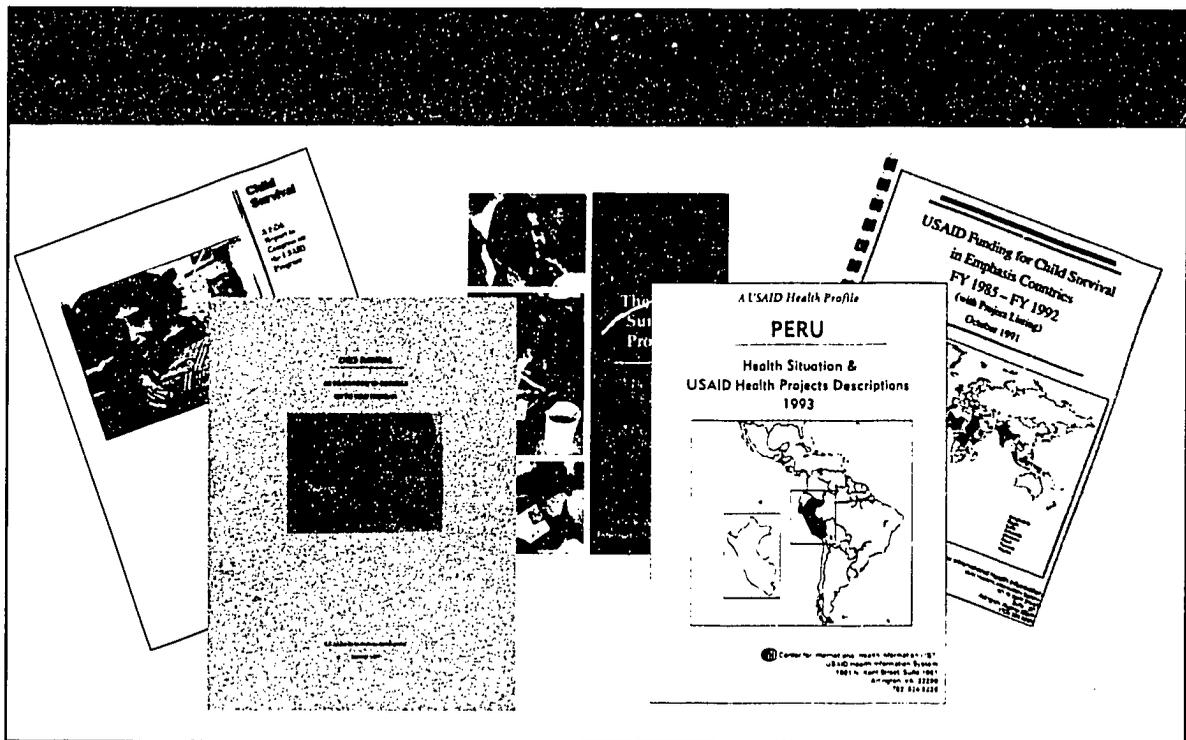
Once the information is made available in this way, CIHI can no longer monitor how it is used. However, many users continue to call CIHI directly for the data in hard copy form as they are aware of the importance of receiving not only the "numbers" but also CIHI's explanations and interpretations of the data. As CIHI draws to a close, the Center is investigating mechanisms

to make the data available through INTERNET. However, many of the same limitations on the presentation of data existing for the USAID network carry over to INTERNET as well.

CIHI has also been called upon to provide data to support the USAID PRISM effort. More important, the Center carried out a technical review of data gathered for PRISM by the USAID field missions. The PRISM system is predicated on the notion that field missions will identify selected performance indicators for their portfolio of projects and monitor trends in those indicators over time. CIHI was asked to review and comment upon mission baseline data and the reporting of trends over time for all health indicators. PRISM has asked the Office of Health to formalize CIHI's role in this process in the future.



Recognizing that the performance of an information center is only as good as the use made of its data, the CIHI staff has made a deliberate and concerted effort to improve the quality and appearance of its reports and graphs while striving to broaden the audience that can access its materials. Most noteworthy, the Center has vastly improved its ability to present information by mastering a variety of graphic presentation skills, improving the content and style of written materials, and, in the last eighteen months of the project, introducing desktop publishing into its routine operations. Consequently, all aspects of dis-



semination have benefited -- from the high quality, professionally printed Child Survival Report to Congress, to a routine print-out in response to an ad hoc request for information. The range of CIHI dissemination tools and the innovations introduced are discussed in the following sections.

STANDARD REPORTS

■ *Child Survival Reports to Congress*

The single, best-known report that CIHI produces is the annual Report to Congress on USAID's Child Survival Program. Working closely with counterparts in USAID, CIHI staff takes the lead each year in producing the report. The issues to be resolved in getting the report out differ from year to year, but the basic steps are the same: developing the theme; outlining the report;

preparing the initial draft text; incorporating USAID's suggested revisions; preparing graphs, tables, figures, and maps; supervising design, layout, and printing; and, finally, disseminating the report within and outside of USAID. The high quality of the content and the professional appearance of the report have set a standard for other programs in USAID.

The Eighth Report to Congress on USAID's Child Survival Program was issued December 21, 1993, in a White House ceremony. It is the fifth such report produced by CIHI (the first three were produced under the predecessor activities). Like the seven that came before, the Eighth Report provides the information deemed essential by the Congress to document the allocation of USAID funds for child survival, as well as the most current health statistics for individual countries and for the world as a whole, a brief description of USAID-supported projects and programs in the designated child-survival-emphasis countries, and an accompanying narrative text.

Over time, as better national-level data have become available and as the focus of the child survival initiative has broadened, the number of indicators reported for each country has expanded and the amount of missing data has decreased. Between the fourth and the eighth report, data on the following topics were added: exclusive breastfeeding, complementary feeding, continued breastfeeding during episodes of diarrhea, maternal mortality, access to water and sanitation, the percentage of births at which a trained attendant was present, and HIV-1 prevalence.

The narrative section of each report defines its distinctive character. For example, the fourth report provided an overview of USAID's Child Survival Program; the fifth highlighted the role of private voluntary organizations in child survival; the sixth presented a series of one-page, fact-filled progress reports on subjects closely related to child survival such as malaria, water supply and sanitation, vitamin A nutrition, and so on; the seventh analyzed the challenges to child survival in the 1990s for consideration by program planners; and the eighth, which was prepared during a period of transition within USAID, set the stage for closer integration of child survival and the programs falling under the newly conceived Health, Population, and Nutrition Center of Excellence, or Cluster, in USAID's Bureau for Global Programs, Field Support and Research. These narrative sections, particularly the one in the seventh report, have been favorably received by the international health community and have bolstered USAID's leadership role in child health programs.

Eight thousand copies of each report are distributed. Close to half go to USAID missions and bureaus; a fourth to health professionals outside of USAID; and members of Congress and congressional staff account for about 15 percent. The balance is distributed to the press, USAID's Cooperating Agencies and colleges and universities.

COUNTRY PROFILES

As the quantity and quality of information stored within CIHI's databases improved, requests for "all" of CIHI's information on particular countries became more and more frequent. These requests came from evaluation and other short-term consultant teams scheduled to visit a country, newly assigned backstop officers within USAID, and persons or groups outside of USAID with a strong interest in USAID's program in a particular country.

The first group of profiles was prepared during the second year of the project at the request of the Bureau for Latin America and the Caribbean. These were well received and additional profiles were requested and produced. By the end of CIHI, profiles had been written on 88 countries, including, in 1992, the fifteen countries of the Confederation of Independent States (of the former Soviet Union), Georgia, and the Baltic Republics.

Production of the first set of profiles was very labor-intensive, for each graph or table had to be produced individually. Over the years, CIHI simplified and automated aspects of the production process. How far the automation process has progressed may be illustrated by looking at the production of last series of profiles: data stored in the CIHI databases were passed to a set of templates in PAGEMAKER (a desktop publishing package for the PC) which produced the printed version. Partly as a result of this automation, the final group of profiles was more attractive and informative and easier to produce than the earlier versions.

The strategy for updating profiles was modified during the final year of CIHI. Now, a date of publication is printed on each page of all profiles. Selected pages are updated (and given new dates) upon receipt of new information. For example, when new vaccination coverage data is received from WHO, rather than redoing all profiles, CIHI simply updates those pages that had to do with vaccination coverage. Thus, the profiles have become "living" documents that, in principle, can always present the most current information available through the CIHI data files.

The profiles are especially intended for the use of USAID personnel and do not provide a comprehensive description of the total health sector of the country. They are built up essentially with data from the Center's databases, but they contain information from other sources as well. (All data are clearly marked as to source and supplemented with explanatory notes when necessary.) The profiles vary in length depending upon the data available.

Although they provide an invaluable source of information, the country health profiles have not been disseminated widely for lack of project funds. They are sent out to the USAID mission involved and to the appropriate regional bureau as soon as they are issued and thereafter only to those who request them. In fiscal year 1993, for example, 97 requests for country profiles were received.

It is likely that even a modest attempt to "advertise" these profiles would stimulate demand considerably. Five hundred requests were generated in 1992 just by displaying sample profiles at the USAID exhibit at the American Public Health Association meeting. It was esti-

mated that just the duplication costs alone for a wide dissemination of the 88 profiles would total \$10,000. This does not include the cost of mailing.

The contract governing CIHI's operations was not funded at a level permitting it to produce and disseminate information on health and child survival on a regular periodic basis to professionals in the field. Therefore, CIHI has produced the reports, mainly to fulfill its role as a service bureau, but has had to forego wide dissemination.

OTHER STANDARD REPORTS

One of CIHI's first activities was to carry out a study of user needs (see Chapter 5). Based on this study, and on an analysis of information requests made in 1989, CIHI staff decided on the content and format of 14 standardized reports to be issued on an annual basis. In subsequent years, additional standard reports were added to the list. It was not always possible to update these reports annually; however, most were kept reasonably up to date. Because the topics for standardized reports were based on a user needs, the reports facilitated responding to ad hoc requests for information.

Once a year, CIHI sent out a copy of its publications list to all USAID mission Health/Population/Nutrition Officers and to appropriate bureau personnel. Many requests for documents came in as a result of this mailing. In addition, CIHI sent out copies of updated standard reports yearly to about 20 heavy users of the health information system.

CIHI's standard reports fall mainly into two categories: those providing data on USAID funding of health programs and those providing demographic and health statistics. The following reports from the current list, the majority of which cover the fiscal year 1985 to 1993 period, fall into the first category:

■ USAID funding for:

Child Survival

Health, Including Child Survival and AIDS

Child Survival in Emphasis Countries

PVOs for Health, Including Child Survival and AIDS (to FY 91 only)

Health Research

Projects Reporting Nutrition Activities for Child Survival

Acute Respiratory Infection (from FY 89)

Malaria

Water and Sanitation

And USAID projects with . . .

A Health or Child Survival Component, FY 85-87

A Health, Child Survival, or AIDS Component, FY 88-91 and (planned) FY 92-93

- The following fall into the second category: Selected health and demographic statistics in USAID-assisted countries in:

Africa
Latin America and the Caribbean
Asia
Near East

- One standard report does not fall neatly into either category: "Health and Child Survival Research Titles Reported by USAID-Supported Projects," a list of ongoing and completed research activities by title, subject, country, and project number, as reported in FY 1991 by USAID-funded projects. As this report began as a special study, it is described in the next chapter.

POLICY DIALOGUE TOOLS

Almost all of CIHI's products -- formal reports, sets of graphs, or ad hoc responses to one-time inquiries -- were used in the policy dialogue within USAID. However, several of the Center's productions were designed especially to stimulate discussion on health and child survival policies. Four of these are discussed below.

- ***Wall Charts***

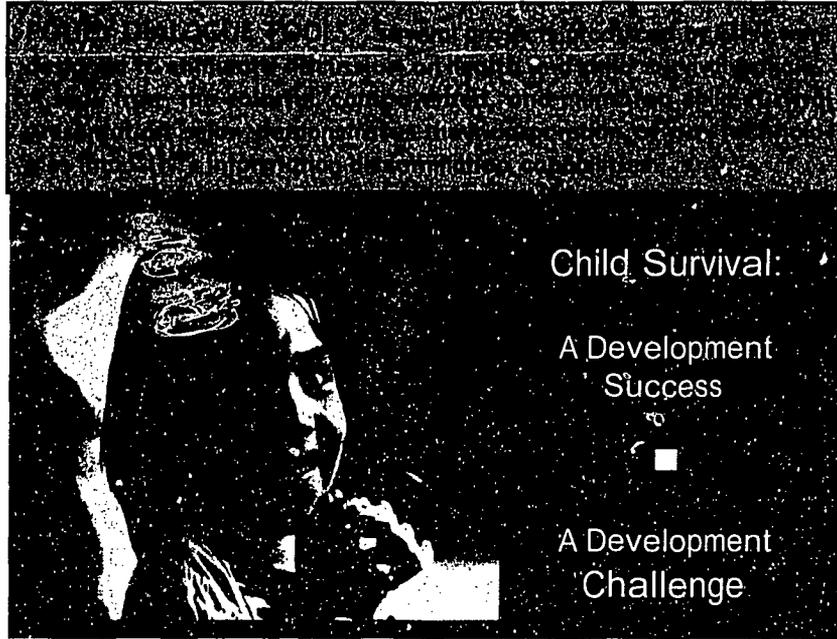
In 1991, CIHI produced a set of four wall charts (one for each of USAID's regions) to supplement the Sixth Report to Congress on Child Survival. These proved to be so popular that they were reprinted and subsequently established as a regular feature of the Child Survival Report. The seventh report had a pocket in the back cover to hold the charts.

In the wall charts produced in 1991 and 1992 for the sixth and seventh Reports to Congress, the demographic structure of each of USAID's regions is shown in a population "pyramid," and a map of the region is color coded to show projected infant mortality for the year 2010. Posted side by side on the wall, these charts provide a viewer with a surprisingly detailed picture of the health and child survival status of the regions and give some indication of what that picture will look like twenty years hence.

In 1993, a single wall chart was produced showing how global efforts have reduced under-five mortality since 1960 -- in both developing and industrialized countries. The shift to a global chart rather than one based on USAID regions reflects the expanding audience for CIHI data, an audience that goes beyond the USAID community.

- ***Child Survival Slide Show Presentation***

During the final year of the CIHI contract, the use of computerized, colored, animated, graphic presentations became a part of the CIHI information dissemination arsenal. Following the



election of 1992, CIHI received an urgent request to develop a briefing presentation on child survival for USAID's new administration. This vague but important request stimulated CIHI to master a number of techniques for data presentation using new technologies. In putting this presentation together, CIHI staff added color, photos, and animation to CIHI's standard black and white

overheads. The end product was available as a regular slide show, a computerized slide show, a large desk-top album, or a small pamphlet. Text slides were generated to guide the presenter.

This presentation was shown to the new senior staff of USAID and to other groups as well. It has been presented at a number of conferences including one in Africa on the lessons learned from the Control of Communicable Diseases Project, which carried out child survival activities in Africa for many years, and the American Public Health Association annual meeting. But the value of this presentation as a policy dialogue tool cannot be measured solely by the number of people who have seen it. The process of writing the presentation and designing the graphic elements, a process which involved many USAID staff members from around the Agency, was itself a policy dialogue tool. The need to reduce complicated issues to one or two simple graphs triggered intense dialogue (and sometimes debate) within USAID, by senior staff, regarding its own policies and programs.

■ *World Development Report Overhead Presentation*

The *1993 World Development Report*, published by the World Bank, focuses on health issues. At a time when resources for health are becoming more and more scarce all over the world, this report represents the best single current document advocating the importance of health programs in development. To provide staff throughout USAID with a way to use the report to stimulate discussion, CIHI prepared a series of overheads combining graphs from the report with original text.

■ ***Spreadsheet Model Depicting the Impact of HIV/AIDS on Mortality***

Working with the HIV/AIDS Division of the Office of Health and the U.S. Bureau of the Census, CIHI helped make operational a simple, spreadsheet model to estimate the impact of the HIV/AIDS virus on infant and child mortality as well as mortality in the working age population. While never formally published, the spreadsheet was displayed in a poster session at the international AIDS conference in 1993, and the estimated higher mortality values for high-prevalence African countries were published in the Seventh Report to Congress on Child Survival.

■ ***Data Reference Service***

In addition to being responsible for maintaining its databases and publishing the data collected in periodic reports of various kinds, CIHI also functioned as an information service bureau for USAID. The Center received several hundred requests for information yearly. Many of these requests could be answered with one or more of CIHI's standard reports; others called for a new configuration of data, a new analysis of existing data, or a new and more illuminating mode of presenting existing data.

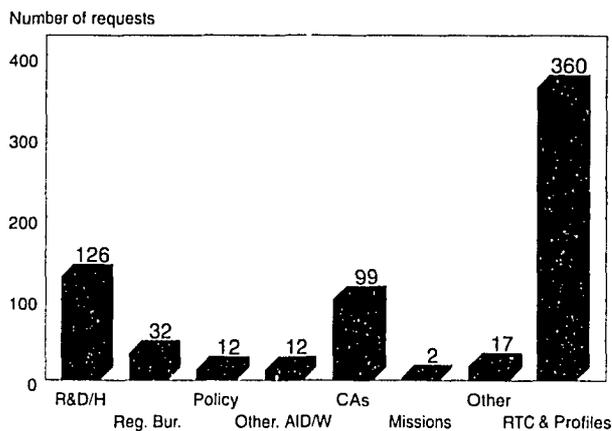
Most requests were logged in on an information request form that captures information about the requestor, the use to which the information is to be put, and the length of time required to fill the request. The request log was known to be imperfect: requests that can be filled very rapidly are sometimes not logged in, and requests that came in "installments" were not treated uniformly in the way they were entered. (Some "installment" requests might be logged in only once when the task was concluded while others were logged in at each installment.) Also, all staff members agree that they probably underestimated the amount of time needed to fill a request, mainly because part of what it takes to answer a request was often considered routine work. For example, if a staff member spent two hours entering data in advance of the scheduled input date to respond to a request, the two hours would not be logged as time spent answering the request.

As mentioned in Chapter 1, the amount of staff time and attention needed to answer requests for information was substantial, so large, in fact, that the team conducting the final evaluation of CIHI concluded that the data reference service was impeding the Center's effort to fulfill its other responsibilities. In an effort to protect the Center from information requests that might not warrant the time spent on them, the Office of Health instituted an approval process for requests estimated to take more than eight hours to fill. However, requests were rarely refused because of the demands on staff time -- long requests tended to be from primary clients and, quite often, involved work which, ultimately, the staff had to do anyway.

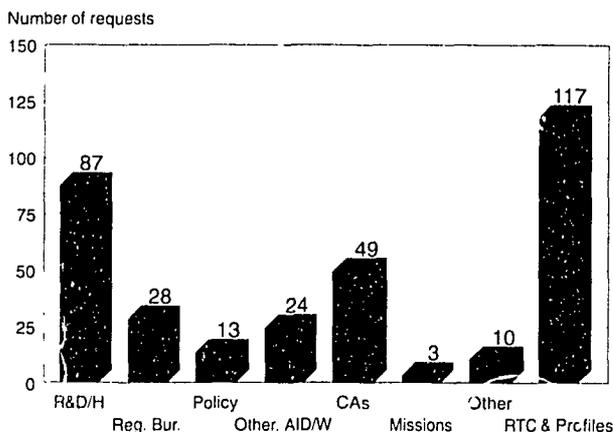
The statistics about the origin of requests are not as revealing as they appear. The official policy regarding requests is that all requests should be transmitted to CIHI through its USAID Cognizant Technical Officer (CTO). In practice, this was frequently not done because the time required to process a request through the CTO could exceed the interval between request and desired delivery of the product, especially at times when the CTO was involved in meetings

ORIGINS OF REQUESTS: In its role as an information service, CIHI has responded to several hundred requests annually, as illustrated in the figures below.

DISTRIBUTION OF REQUESTS - 1992



DISTRIBUTION OF REQUESTS -- 1993



and other activities out of the office. Nevertheless, many requests were submitted according to prescribed procedures, and, therefore, the number of requests apparently originating in the Office of Health is inflated, for many of these actually originate elsewhere, inside or outside of the Agency. The Office of Health has certainly been the prime client, but CIHI has also provided a significant service to the agency as a whole.

The figures on the left show the origins of all requests logged into the CIHI tracking system in 1992 and 1993. The decline in the absolute number of requests processed in 1993 is due, in part, to the late release of the Eighth Report to Congress on Child Survival. Also, the decline in the number of requests from other Cooperating Agencies (CAs) may be due to the fact that a number of major projects were in the process of closing down and/or bidding on follow-on contracts in 1993.

Three examples of information requests follow below to give something of the flavor of CIHI's data reference bureau work. (Appendix B contains copies of the corresponding information request forms and response memos.)

Example #1

Origin:	POL/SP
Request:	An analysis of the relationship between the infant mortality rate, life expectancy, and GNP per capita
Date received:	November 11, 1992
Date filled:	November 16, 1992
Time spent:	One hour
Nature of response:	A two-page typed memo and two computer printouts
Remarks:	The requester had posed the same question to CDIE/ESDS a few days earlier. CIHI's response was coordinated with that prepared by CDIE.

Example # 2

Origin:	CDIE/PRISM
Request:	Title series data from 1980 to the present on population, average annual growth, infant mortality, child feeding practices, DPT immunization, and contraceptive prevalence
Date received:	November 8, 1993
Date filled:	November 15, 1993
Time spent:	Eight hours
Nature of response:	A two-page typed memo and a diskette containing LOTUS files with the data requested (the print-out of these files totalled 90 pages)
Remarks:	This request was one of a series received over time from the PRISM system. The CIHI database has been used to supplement and/or validate data submitted by the missions as part of their program monitoring activities

Example # 3

Origin:	IMPACT on behalf of R&D/N
Request:	Time series data on funding for nutrition activities supported by USAID, 1985-1992
Date received:	September 10, 1993
Date filled:	September 17, 1993
Time spent:	Four hours
Nature of response:	The nutrition standard report was provided with several additional tables and listings required to supplement and update the information in the standard report
Remarks:	This request was submitted to enable R&D/N to respond to inquiries about the USAID nutrition program at an international conference. The response included a memo of almost two pages to explain the contents and limitations of each table and listing in the response

■ ***Dissemination Plan***

In January 1990, CIHI prepared a dissemination plan for approval by the CTO. The plan covered dissemination of standard reports, custom responses to requests for information, and the computerized tracking system for requests. The detailed policies and procedures that were laid down in the plan, including the make-up of the mailing list, were followed throughout the Project.

■ ***Health Information System Library***

CIHI maintained a library of non-computerized information to complement the computerized data stored in the HPD and the HSD on USAID-supported projects and programs, technical issues for USAID supported interventions, and the international effort to improve the health of the world's population. Project/program information, stored by country, focused on countries

receiving USAID support for health activities. Technical documents, stored by subject, served as valuable references and often provided a starting point from which a more detailed search for information on key subjects could be launched.

Other USAID documents were stored by country designation or subject as appropriate. Approved project papers, evaluations, surveys, special studies, technical updates, trip reports, project descriptions, fact sheets, etc. yield information that enhanced CIHI's ability to help USAID monitor its specific goals and targets and to report effectively on the achievements of its program.

CIHI made no attempt to duplicate the functions of the larger USAID library maintained by CDIE. Instead, the Center utilized the resources of the library and limited its collection to those documents that enabled it to meet the unique needs of the project in responding to requests and in preparing standard reports and country profiles.

SPECIAL ACTIVITIES

■ *Exhibits*

CIHI maintained and displayed an exhibit on behalf of USAID at major conferences in the international health field and for special Congressional presentations on Capitol Hill. Each year, at the very least, the USAID exhibit was presented at the American Public Health Association (APHA) meeting and the National Council for International Health. The APHA conference is attended regularly by over 10,000 health professionals. By exhibiting at these conferences, USAID disseminates information about its health program to the broader international health community and, in periods of Agency expansion, as a forum for recruiting the best available health professionals to work for the Agency.

EXHIBITS: CIHI manages exhibits on behalf of USAID at major international health conferences and disseminates information about USAID's health program to the broad international health community.



In 1991, at the request of the Director of the Office of Health, CIHI redesigned the exhibit using more easily transportable and more flexible display units. The exhibit stand folds down into two small portable containers; yet, when expanded, occupies two of the larger conference exhibit spaces. A smaller desk top display is contained in a single portable container. The graphic materials for the exhibit can be updated or changed easily as the photos, maps, etc. adhere to the felt backing with a velcro material.

■ *Presentations for R&D staff*

CIHI prepared graphic materials and text slides for use by R&D staff who might be called upon to make presentations both inside and outside of USAID. Presentations prepared by CIHI included one to introduce "new hires" to the operations of the Agency, another for regional Health/Population/Nutrition Officers' meetings, and others for use at conferences or other meetings. In addition, CIHI presentation materials were included in annual briefings for USAID senior staff and in the preparation of congressional testimony. Several times a year, R&D staff use slides and hard copy materials available from CIHI to make their own presentations.

CONCLUSION

This chapter has covered the major outlets for disseminating information collected in the two major databases maintained by CIHI. The next chapter will look at technical assistance provided by the Center and special studies it has carried out in compliance with its contract.



CHAPTER 5: Special Studies and Activities

One of CIHI's major objectives was to improve the quality and availability of health information. The contract provided CIHI with an opportunity to carry out special studies and pilot projects as a means of exploring new avenues for analyzing and disseminating information. Three studies were mandated in the contract -- one analyzing user requirements, another evaluating the quality of CIHI data, and still another on hardware and software needs. In addition, eight case studies on health and child survival topics of interest as well as three to six pilot projects were to be completed during the project.

ANALYSIS OF USER REQUIREMENTS

CIHI completed an analysis of user requirements in July 1989. The methodology to be employed in this study called for interviews of current and potential users in the Washington, D.C., area and in USAID field missions. CIHI staff interviewed personnel at nine missions, seventeen USAID bureaus and offices, and at two centrally funded USAID projects (WASH and PRITECH), using a structured questionnaire that encouraged open-ended responses to questions designed to probe for user needs beyond those already met by the Center's activities. CIHI staff also held in-depth discussions of user needs with personnel at the USAID mission in Guatemala and obtained feedback from private voluntary organizations during a meeting of USAID-supported PVOs. Many of the interviews were recorded on tape and later transcribed for more detailed analysis.

Overall, the study found that the services provided up until then by CIHI and its predecessor projects had been appreciated and highly regarded overall by the majority of users. More specific findings were as follows:

- Potential users requested better documentation about the capabilities of the health information system.
- Users requested more graphs and charts, with sources and explanations clearly displayed.
- Users praised the timeliness of responses to inquiries.
- Users recommended that CIHI take a more active posture through standard reports and analyses disseminated on a routine basis.
- Respondents expressed a need for more information about what USAID child survival projects are doing "on the ground" (e.g., success stories, lessons learned, verification of impact, etc.).

- Many users expressed the need for better information about activities supported by other donors in the health field.
- Almost all respondents indicated that USAID's current demands on them for reporting were so heavy that additional demands should be avoided.

On the basis of these findings, CIHI strengthened its capacity to produce graphic materials, expanded the range of its standard reports, modified the annually administered Health and Child Survival Project Questionnaire to solicit better descriptive material while eliminating questions which required labor-intensive development of responses by field personnel.

DATA QUALITY STUDY

In February 1990, Community Systems Foundation of Ann Arbor, Michigan, working on contract, completed a study of the quality of data collected and processed by CIHI. The study addressed quite distinct data quality issues pertaining to the Health and Child Survival Project Questionnaire, the HPD, and the HSD.

Regarding the questionnaire, the study concluded that most of the questions were of a workable length and provided a suitable range of possible responses; however, some of the response categories were inadequately defined. As for the HPD, the study found that in some instances subjective judgements by the CIHI staff or by respondents to the questionnaire reduced the perceived quality of the data for some users. Mentioned in this regard were judgements about which projects were to be included in the database and which were to be set aside as well as how project funds were attributed to health interventions. Regarding the HSD, the study found the lack of "completeness" -- i.e., values for all indicators for all countries were not recorded in the database -- as the biggest drawback to the database at the time of the study.

Where actions by CIHI could successfully eliminate data quality problems, CIHI responded to the recommendations of the study. However, a number of the major issues highlighted went beyond the purview of CIHI: for example, the subjective judgements regarding the attribution of USAID funding to health activities and the lack of completeness of the HSD. These issues will be discussed further in Chapter 6: Issues and Lessons.

HARDWARE AND SOFTWARE STUDY

In September 1988, CIHI commissioned a study to assess its hardware and software requirements and to develop short- and long-term strategies for upgrading CIHI's computer capabilities. The study observed that, while CIHI's office operations and database activities could be carried out effectively with the computer systems in use at that time, its presentation activities could benefit dramatically from improved computer facilities, specifically desktop publishing equipment. The study recommended purchase of Mac II personal computers for presentation activities and IBM compatibles with common software packages for other staff.

The recommended package of hardware and software was purchased in 1989. Since then, however, rapid changes in hardware and software prompted two major upgrades in equipment. The advent of the "386" PCs triggered the first upgrade, and, in the final year of the project, a decision was taken to upgrade to "486" PCs and to operate all systems from a WINDOWS platform. A "top-of-the line" Tektronics color printer, improved black and white laser printers, and a scanner were added to the hardware inventory. Also, the project adopted the WINDOWS versions of WORDPERFECT, LOTUS and HARVARD GRAPHICS and DBASE IV for most routine work as standard software and added PAGEMAKER V, DESIGNER, and FREELANCE GRAPHICS to facilitate desktop publishing tasks. The MAC II computers were phased out as it was felt that the software for PCs had improved to the point where CIHI could perform all of its tasks on one type of computer.

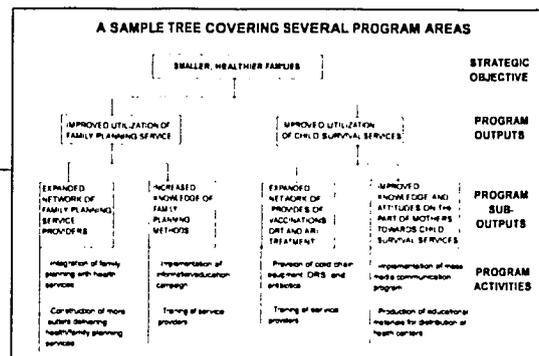
CASE STUDIES AND PILOT PROJECTS

During the course of CIHI, eight case studies on health and child survival topics were completed, as shown in Box 1 on the following page. Several of these were carried out with mission or regional bureau support.

In its early years, CIHI completed several USAID field- and Washington-based pilot activities. The stated goal of such activities was to find ways to increase the utility of the health information system; however, in practice, the goals for pilot projects were broadened considerably. Boxes 2 and 3 on the following pages list those that meet the contractual requirement for three field and three Washington pilots; however, several additional pilot studies were carried out; namely, a literature review of the status of health information system development at the national level and an effort to develop a child-at-risk index to be used as an indicator of the national need for child survival services.

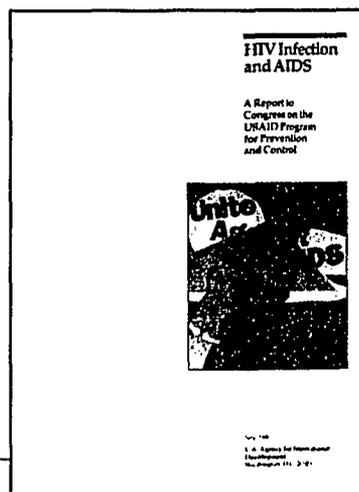
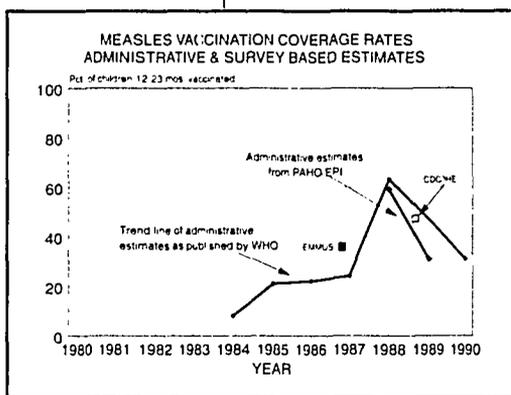
Box 1: Case Studies on Health and Child Survival

Title/Date	Description	Impact
Food and Nutrition in the 1990s: A Framework for Assistance (April 15, 1990)	A nutrition strategy for the Africa region with an accompanying database describing USAID-supported nutrition activities in the region	Helped guide the AFR Bureau to develop its nutrition portfolio, although never given the official stamp of approval by AFR due to internal issues regarding agricultural aspects of the strategy
Central American Initiative: Trends in Selected Health and Nutrition Indicators: 1980-1987 (February 1990)	A review of values of indicators from multiple in-country and external sources for countries participating in the Central American Initiative, plus individual reports for Guatemala, Honduras, and El Salvador	Led CIHI to investigate the sources of variation in reported values and to document and explain that variation
ICORT-III Supplement to the Third Report to Congress on the USAID Child Survival Program: Projects Supported by USAID for Diarrheal Disease Control (December 1988)	A description of all on-going USAID-supported activities in the area of diarrheal disease control	Distributed at the 1988 ICORT conference
Analysis of Age Patterns on Immunizations (October 1988)	An analysis of vaccination coverage rates reported in 8 early DHS projects showing that rates were not generally higher among younger as compared to older children (i.e., that vaccination programs were not successfully reaching out to the younger cohorts) and that children in urban settings born to more highly educated mothers were most likely to be vaccinated	Presented at the Annual Meeting of the APHA in Boston, November 13-17, 1988
Health Profiles of the Newly Independent States of the Former Soviet Union (1992)	Profiles of 15 newly independent states of the former Soviet Union using new data sources	Virtually the first publications on the health status of the new states, these profiles were distributed at a meeting in Geneva, Switzerland of the ministers of health of the new states in May 1991, and broadly distributed outside the immediate USAID community
Health and Child Survival Research Titles Reported by USAID-Supported Projects (1992)	A database and coded guide to research being supported by USAID derived from the Health and Child Survival Project Questionnaire	Led to a review of the definition of research within S&T/H
Health Care Financing Study (September 1990)	A study of the indicators used to monitor health care financing trends in USAID-supported projects	Used as a starting point by a PRISM task force assembled to assist missions to monitor initiatives to change the way health care is paid for
Review of Plans for 10 Missions in Latin America and the Caribbean (January 1994)	A review of mission plans submitted in the form of "objective trees" at the request of an Indicator Working Group in the LAC Bureau which commented on the internal logic of the objective tree and the appropriateness of the indicators selected	Assisted the missions to improve their plans using the format identified by the PRISM system



Box 1: Field Missions Pilot Projects

Title/Date	Description	Impact
Health Information System for the USAID Pakistan Mission (November 1989)	Assistance to USAID/Pakistan to develop an information system to monitor its health and population portfolio at the request of the ANE Bureau	Worked with mission staff on-site to review all projects in the portfolio, articulate objectives, and identify indicators to monitor performance
Haiti: Selected Trends in Health and Nutrition Indicators in the 1980s (1991)	A gathering and interpretation of all available data on child survival indicators in Haiti, at the request of the LAC Bureau and USAID/Haiti in anticipation of a review of the child survival program in Haiti	Report of the study presented at the 1991 meeting of the American Public Health Association and shared with a team of evaluators at the Center for Development Information and Evaluation
Togo PRISM Exercise (1992)	At the request of the AFR Bureau and USAID/Togo, two technical support visits were made to USAID/Togo to develop a health and population objective tree, and work with a local firm to gather the necessary performance indicators	Political events in Togo cut short the Togo program



Box 3: USAID/Washington Pilot Projects

Title/Date	Description	Impact
Project Management System for the Office of Health, Bureau of Science and Technology (May 1992)	Designed and developed a project management system for the Office of Health, including development of the necessary computer software	Strengthened the capability of the Office of Health to manage and report on the flow of funds through its own projects
AIDS/HIV Report to Congress (June 1990)	Working with the HIV/AIDS Division of the Office of Health, Bureau of Science and Technology, prepared the second Report to Congress on USAID's HIV/AIDS Program	Report of the study presented at the 1991 meeting of the American Public Health Association and shared with a team of evaluators at the Center for Development Information and Evaluation
Study of the Relationship Between the HPD and the AC/SI System (March 1990)	A study of the differences in the two systems following the introduction of the AC/SI system for use in planning the USAID portfolio in all sectors	The two systems were brought into harmony

OTHER ACTIVITIES

■ *Expert Advisory Group on Infant and Under-Five Mortality Rates*

CIHI convened a meeting in February 1993, under the auspices of the Office of Health, for a group of experts in the field of demography. The main purpose of the meeting was to determine the best sources for infant and under five mortality data for use in the Eighth Report to Congress on Child Survival and in the accompanying wall chart. Participants represented USAID's Office of Health and regional bureaus, the Population Reference Bureau, Johns Hopkins University, the World Bank, the U.S. Bureau of the Census, and the Demographic and Health Studies project. The meeting featured a review of the methods currently in vogue for determining infant and under-five mortality rates, including the new curve-fitting approach mentioned in Chapter 3. The participants in the meeting agreed that, in the future, an independent organization should maintain a library of survey and census data to be made available to any and all groups interested in making their own mortality estimates. Also, discussion was held about the need for a more in-depth technical review of the available methods for estimating mortality but no conclusion was reached regarding how to implement such a review.

■ *Expert Advisory Groups for the Sixth Report to Congress on Child Survival*

Three technical advisory groups were convened to guide CIHI in its coverage of key intervention areas in the Sixth Report to Congress on Child Survival: one on trends in mortality, one on immunization programs, and one on diarrheal disease control. The progress to-date in each area was discussed as were the problems to be overcome to insure continued success.

■ *Expert Advisory Group on the Expanded Program for Immunization*

An expert advisory group met in January 1990 to discuss discrepancies in vaccination coverage rates reported in different sources available at that time. Convened jointly by the REACH project and CIHI, the meeting was attended by representatives of WHO, UNICEF, the DHS project, the U.S. Bureau of the Census, and the Centers for Disease Control. The knowledge vested in the group about the details of the various surveys or administrative procedures in countries was so good that most discrepancies were explained and sound advice was given to CIHI about the "best" estimates for publication in the Fifth Report to Congress on Child Survival.

SCIENTIFIC PAPERS AND PRESENTATIONS

A number of the papers produced during the CIHI project have been presented in major conferences of the health profession:

APHA, 1988: Analysis of Age Patterns on Immunization

APHA, 1991: Haiti, Selected Trends in Health and Nutrition Indicators in the 1980s

APHA, 1993: The Child-At-Risk Index, Work In Progress.

NCIH, 1991: Chaired a Session On Health Information System Development

CIHI AS A TECHNICAL RESOURCE

In its capacity as the keeper of the health information system for the Office of Health, CIHI served as a technical resource for the following working groups in USAID: the Child Survival Task Force, the PRISM Indicators Working Group, and the Latin America and Caribbean Bureau Working Group to Review the Missions' Strategic Objectives. It also worked routinely with each of the USAID Regional Bureaus in matters concerning indicator development and health data collection.



This final report on the operation of the Center for International Health Information has special significance. As a new contract has been awarded by USAID to enable the continuation of the Center, this report can be more than a summary of past achievements. It can also be a benchmark and starting point for the next stages in the evolution of CIHI. Towards that end, it is useful to review the lessons learned during the last five years and to highlight and discuss a few of the issues which will continue to need special attention if the Center is to continue to develop and mature.

LESSONS LEARNED

In considering the next phase in the evolution of CIHI, three of the lessons learned during the past five years merit special attention.

■ *Integrity*

One factor contributing to the success of CIHI has been its reputation as a Center of integrity; that is, as a provider of information that is accurate and fair. Information is power. CIHI has been able to succeed in an environment where policies are formed and decisions are made based on information because it has shared its information with everyone and fought to avoid the manipulation of its data to serve the special interests of any of its primary clients.

■ *Responsiveness*

The final evaluation of the CIHI project stimulated discussion of the merits of being responsive to ad hoc requests with a short lead time relative to being committed to longer-term, better planned activities. While supportive of the notion of increasing CIHI's involvement in more carefully designed activities, the success of the project has been its ability to respond to all sorts of requests promptly -- according to the needs and priorities of the user rather than the needs and priorities of the staff.

■ *Presentation*

Information is power; information presented well is power in action. Throughout its five years, CIHI has invested heavily in the development of its presentation skills. While these skills include better graphics, more attractive layout of documents, the use of color where appropriate, etc., the most important skill is the ability to summarize complex and comprehensive information so that the user can understand it and apply it to the problem at hand. CIHI's investment in its presentation skills has been a major factor in strengthening the Center's role as source of health information.

■ *Issues Surrounding the Maintenance and Use of the HSD*

The mechanics of maintaining and updating the Health Statistics Database (HSD) are relatively straightforward, but issues concerning data quality, selection of the best data, scope of the database, and the role of data in program planning, monitoring, and evaluation remain unresolved.

■ *Quality*

Creators of an archival data bank of the genre of the HSD must be concerned with the quality of the data that are stored within and, subsequently, reported out to others. Some of the data currently stored in the database are quite good; for example, the estimation of vaccination rates from a well-conducted survey employing accepted sampling methods. Some are quite poor; for example, certain maternal mortality rate estimates from ineffective civil registration systems or unrepresentative hospital-based surveys.

CIHI attempts to learn as much as possible about the more common methods of generating each type of data archived in the HSD and, where possible, about the diligence with which those methods are applied in the field. This "subjective" knowledge is not systematically recorded in the data files except, occasionally, through a brief note in a comment field. Frequently, when users of the data ask for a subset of the database, such as the under-five mortality rates for countries in sub-Saharan Africa, the "list of numbers" is accompanied by the sources for each number and a memo clarifying pitfalls frequently encountered by casual users in trying to interpret the numbers.

These procedures leave several questions still unanswered. Should CIHI report a particular value for an indicator when the quality of the study was poor? Should CIHI verify that the potential user understands how reliable and valid the data is before releasing it? This latter point is particularly important when data is disseminated to time-pressed policy makers lacking the contextual background (and, in some cases, the technical training) required to interpret the data correctly.

■ *Selection*

Early in the development of the HSD, the greatest problem confronting CIHI was finding even one value for the key indicators for monitoring the Child Survival Program. Over time, the problem shifted -- for many indicators, multiple sources were reporting values for equivalent or overlapping time periods. Thus, CIHI had to develop criteria for selecting one value rather than another in reports, like the Report to Congress on Child Survival, that require the presentation of only one value.

The criteria, which are discussed in Chapter 3, do not cover all eventualities; nor are they rigidly applied. What is needed is a consistent set of criteria for value selection, agreed upon within USAID, that minimizes the subjectivity involved in the selection process. Such criteria will be difficult to develop. And, even after they are developed, researching useful contextual

information to clarify the accuracy and timeliness of possible values where alternatives exist will probably require a high level of effort. Is it worth the money? Can USAID afford it?

■ **Scope**

The scope (range of indicators included within) the HSD has steadily increased throughout the course of the project. For example, the HIV/AIDS data file was created during the fourth year of the project as was the data file with maternal mortality information. As the focus of health programs in countries shifts or expands, CIHI has to decide whether or not to include additional indicators into the database, taking into consideration USAID priorities, the availability of data collected systematically by an agreed-upon methodology over time, and the need for that data to help complete a picture of the health situation in developing countries.

The issue of interest for CIHI related to scope is determining the balance between expanding the system and maintaining the quality and timeliness of data already in the system.

■ **Role**

While one would like to believe that decisions based on data tend to be more "objective" than decisions based on other criteria, in practice, the use and abuse of data in the name of informed decision making is fraught, itself, with "subjectivity." As keeper of a data archive, CIHI confronts daily its own decisions regarding how involved it should become in the use of its data. On the one extreme, CIHI could merely play the role of keeper of the data, making it available to whoever wants it, while, on the other, CIHI could hold the data under tight security and release it only when CIHI can guide or, even, control its use. The issue of interest for CIHI is determining its proper role within the two extremes.

These four issues are related. For example, CIHI might choose a different role depending on the quality (as judged by CIHI) of a data set. Or, CIHI might choose to incorporate a new indicator in the database because it complements or helps explain variance in given indicators. As the scope and use of the database grows, better understanding of these issues of interest and their interrelationships are needed to guide its evolution.

THE QUESTIONNAIRE AND OTHER INFORMATION SOURCES

Originally, the Health and Child Survival Project Questionnaire served as the only mechanism to gather the necessary attribution information to enable CIHI to report on USAID's funding for health by interventions. With the advent of the AC/SI system, the questionnaire no longer serves that specific function. Nonetheless, over the years, the questionnaire has been modified to provide a number of other valuable types of information. In particular, CIHI has come to rely on the project descriptions and highlights, the information about subcontractors and project implementers, the research titles, the data on expenditures by country (for centrally-funded projects only) and, less frequently, on the descriptions of strategies undertaken within the various major interventions. The questionnaire has been seen by some field people as a report-

ing burden and has always required a great deal of CIHI staff time for design, distribution, retrieval, data entry, and analysis. Two related issues continue to surface in discussions of the questionnaire.

■ *Usefulness*

It is essential that the usefulness of the questionnaire be great enough to warrant the effort required by the field to complete it as well as the effort and cost borne by CIHI to administer it. Since the introduction of the AC/SI system, the balance between usefulness and effort/cost has, perhaps, tipped unfavorably toward the latter.

■ *Other Sources*

Some of the information retrieved on the questionnaire is reported elsewhere in one or more of USAID's required reporting channels. The regional bureaus receive numerous reports from the field, project papers and evaluations are submitted to CDIE, financial monitoring systems exist, etc.

The questionnaire could be greatly simplified and the burden on field people greatly reduced if CIHI were linked more effectively with information flowing in other Agency reporting channels. As this final report for CIHI is being written, USAID itself is undergoing a major transition. The opportunity is at hand for a more complete review of information flows throughout the Agency with the role of the questionnaire considered within the broader context of that review.

ISSUES ARISING FROM THE LINKAGE BETWEEN CIHI AND THE AC/SI SYSTEM

The concept of an Agency-wide budget planning system such as the AC/SI system is sound. It is only through an Agency-wide system that reports can be produced describing the Agency budget -- not just the health budget -- without funds being double counted by potentially overlapping programs. Nevertheless, the implementation of that system and, in particular, the nature of CIHI's linkage to it have complicated the work of the project in a number of ways. In order to retrieve the information stored within the system, a cumbersome procedure of "downloading" the data from USAID's mainframe computer must be executed. Since the decision was made to report funding for health from the AC/SI system, CIHI has been less responsive to requests for funding information due to the delays in accessing the system and, more importantly, has been less able to monitor the consistency and appropriateness of the attributions entered into the system by program officers throughout the Agency.

■ *Efficiency of Access*

If CIHI is to regain its ability to be responsive to funding requests, the "download" procedure should be either simplified or eliminated. Currently, CIHI "downloads" the AC/SI data only

when the administrator of the system assures us that the Agency is not involved in frequent updates. Otherwise, by the time CIHI could process the data, it would be out-of-date. One of two solutions might be sought: a) streamlining the "download" procedure to give CIHI greater ease of access, or b) allowing CIHI to develop reporting formats for the mainframe computer so that the relevant reports could be generated directly from that mainframe.

■ *CIHI's Role in Monitoring Attribution Data*

In order to strengthen CIHI's role in monitoring attributions submitted to the AC/SI system, CIHI must first solve the problem of access described above. However, this alone will not enable CIHI to play a strong role in monitoring attributions. Early in the project, CIHI worked as secretariat to the Child Survival Task Force, an Agency-wide committee responsible for assuring that levels of funding for child survival established by Congress were met. Since the Task Force stopped meeting, CIHI has had no routine, formal mechanism for providing feedback on its observations regarding the data in the AC/SI system. Without such a mechanism, CIHI can influence decisions regarding attributions only through ad hoc communications with program officers and/or technical officers throughout the Agency.

ISSUES TIED TO THE USAID REORGANIZATION

The transition from this first CIHI project to a follow-on project is underway as USAID itself is undergoing fundamental change. Although the USAID transition is not yet final, the plans under discussion suggest that a greater coordination is anticipated among the population, health and nutrition programs in the Agency. In Mission level programs, this coordination has already begun through the creation of single projects with health, population and nutrition components where separate projects had existed before.

■ *The Scope of the HPD*

Throughout the CIHI contract, the population (family planning) program of the Agency operated under funds kept distinct from those provided for health activities. CIHI included some projects in the population portfolio in the HPD, particularly those with a component to combat high risk births (recognized as part of the child survival program); however, reporting on the population program has always been done separately from the reporting on the health program. If these programs are going to be coordinated more closely within the Agency, the role of CIHI as the health information system might have to be redefined in light of the closer linkages between health, population and nutrition programs.

■ *The Role of the HSD As an Agency System*

Similarly, CIHI has become recognized throughout the Agency as a source of statistics describing the health situation in countries. However, some of the indicators used to describe the health situation are also indicators used to describe progress in family planning programs; for

example, infant and under five mortality. The closer coordination of health, population and nutrition programs makes it even more important than ever to report the same values for key indicators in considering both the health, population and nutrition programs in countries. Again, the role of CIHI in serving the Agency as a resource for health and demographic data should be reviewed in light of the closer linkage between health, population and nutrition programs.



APPENDIX A: List of Deliverables Under the Contract

INITIAL STUDIES TO GUIDE DATABASE DEVELOPMENT

- Roy I. Miller and Beth Ann Plowman. "A Report Of A User Needs Study For The USAID Health Information System." July 13, 1989.
- A series of papers comprising the Data Quality Study:
 - ♦ Cathy Antonakos, Frank D. Zinn, and William D. Drake, "Defintions and Dimensions of Data Quality." Report No. 1. Ann Arbor, Michigan: Community Systems Foundation, November 15, 1988.
 - ♦ Frank D. Zinn, Cathy Antonakos, Bettina Schwethelm, and Willam D. Drake. "Methodology for Measuring Data Quality." Report No. 2. Ann Arbor, Michigan: Community Systems Foundation, January 9, 1989.
 - ♦ Frank D. Zinn, Cathy Antonakos, and William D. Drake. "Application of Data Quality Methodology." Report No. 3. Ann Arbor, Michigan: Community Systems Foundation, January, 1989.
 - ♦ William D. Drake, Frank D. Zinn, and Cathy Antonakos. "Determinants of Data Quality for the Center for International Health Information." Ann Arbor, Michigan: Community Systems Foundation, February, 1990.
- Robert Murray and Michael E. Wilens, "ISTI/HIS Computer Study: Final Report." September 13, 1988.

CASE STUDIES ON HEALTH AND CHILD SURVIVAL

- Tina Sanghvi. "Food and Nutrition In The 1990s: A Framework For Assistance." April 15, 1990. (Includes a Background Paper dated May, 1990).
- A series of papers under the general heading of Cential America Initiative:
 - ♦ Elizabeth Burleigh and Roy Miller. Central America Initiative: Trends In Selected Health and Nutrition Indicators: 1980-1987. February, 1990.
 - ♦ Kevin Wayne, Barton Burkhalter, Elizabeth Burleigh and Roy Miller. Central America Initiative: Honduras: Trends in Health and Nutrition Indicators in the 1980s. October, 1990.

- ♦ Roy Miller, Barton Burkhalter, Elizabeth Burleigh and Kevin Wayne. *Central America Initiative: El Salvador: Trends in Health and Nutrition Indicators in the 1980s*. September, 1990.

- ♦ Roy Miller, Barton Burkhalter and Elizabeth Burleigh. *Central America Initiative: Guatemala: Trends in Health and Nutrition Indicators in the 1980s*. May, 1990.

A revised version of this last paper was issued under a separate title as follows:

- ♦ Barton R. Burkhalter, Roy I. Miller, Leiser Silva and Elizabeth Burleigh. *Multi-source Variation In Guatemala Health and Nutrition Indicators*. July 1992.

- ICORT III Supplement To The Third Report To Congress On The USAID Child Survival Program: Projects Supported By USAID For Diarrheal Disease Control. December, 1988.

- John E. Lawson and Richard M. Cornelius. "Age Patterns Of Immunization In Selected Developing Countries." Presentation given at the Annual Meeting of the American Public Health Association, Boston, November 13-17, 1988.

- Health and Child Survival Research Titles: Reported By USAID-Supported Projects. October 1991.

- Beth Ann Plowman. *New Data Types and Sources: Indicators of Health Care Financing/Expenditures*. September, 1990.

- Roy Miller, Ruth Harvey and Marianne Lown. "Final Report Of An Analytical Review Of FY 1992 LAC Mission Strategic Objectives, Program Outputs, and Performance Indicators In Health Population, and Nutrition." A report submitted to the Health Population and Nutrition Indicators Working Group. January, 1994.

PILOT ACTIVITIES IN 3 TO 6 FIELD MISSIONS

- Roy I. Miller. Trip Report, Islamabad, Pakistan, November 20 through December 5, 1989. December 15, 1989. (Includes the description of the purpose level monitoring system proposed while in Pakistan.)

- Kevin Wayne. "Trends In Health and Nutrition Indicators For Haiti: 1980-1990." March 5, 1991.

- Molly Hageboeck, Jean-Paul Paddack, Allen Eisendrath and Roy I. Miller. "USAID/Togo: Program Performance Objectives and Indicators." July, 1992. (The health population and nutrition section of the report was written by CIHI.)

USAID/WASHINGTON PILOT PROJECTS

- Shawna MacCarthy and Betty Case. "Project Financial Monitoring System: User's Manual." Beltsville Maryland: Creative Computer Solutions, Inc., March 1992. (Accompanied by the computer program comprising the system.)
- HIV Infection and AIDS: A Report to Congress on the USAID Program for Prevention and Control. A Report prepared for the USAID Agency for International Development, July 1990.
- Asia/Near East: Comparative Funding for Child Survival, Other Health and AIDS: FY 91 ABS. July 1989. Notes accompanied with relevant tables.

OTHER PAPERS AND STUDIES

- Jaime Benavente and Elizabeth Burleigh. Evaluation Plan for the Child Survival Action Project, USAID/Peru. December, 1988.
- Julius S. Prince. "An Annotated History of Some A.I.D.-Supported Health Research Activities Worldwide." October 23, 1991.
- Bill Jansen, Beth Ann Plowman and Marcia Rock. "Examining the Unmet Need for Child Survival Services: Development of an Index as a Planning and Policy Dialogue Tool." A paper presented at the 121st annual meeting of the American Public Health Association. October 27, 1993.

POLICY DIALOGUE TOOLS

- Presentation: The Child Survival Program, A Development Success, A Development Challenge, April 1993. Available as a computerized "screenshow", slides and hard copy.
- World Development Report 1993, Investing In Health: A Summary Presentation prepared for USAID. January, 1994.

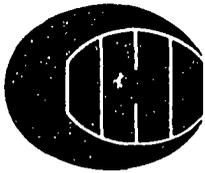
STANDARD REPORTS AND OTHER DELIVERABLES

- Child Survival: A Fourth Report to Congress on the USAID Program. A Report prepared for the USAID Agency for International Development, March, 1989.
- Child Survival: A Fifth Report to Congress on the USAID Program. A Report prepared for the USAID Agency for International Development, April, 1990.

- Child Survival: A Sixth Report to Congress on the USAID Program. A Report prepared for the USAID Agency for International Development, May, 1991.
- Child Survival: A Seventh Report to Congress on the USAID Program. A Report prepared for the USAID Agency for International Development, April, 1992.
- Child Survival: An Eighth Report to Congress on the USAID Program. A Report prepared for the USAID Agency for International Development, December, 1993.
- USAID Health and Child Survival Project Questionnaires. Produced with modifications and additions and administered for FY 1988 through FY 1993 inclusive.
- Standard Reports On USAID Funding (updated annually):
 - ◆ Summary of USAID Funding for Child Survival
 - ◆ Summary of USAID Funding For Health, Including Child Survival and AIDS
 - ◆ USAID Funding for Child Survival In Emphasis Countries
 - ◆ Summary of USAID Funding To Private Voluntary Organizations (PVOs) For Health, Including Child Survival and AIDS
 - ◆ USAID Funding for Health Research
 - ◆ USAID Funded Projects Reporting Nutrition Activities for Child Survival
 - ◆ USAID Funding for Acute Respiratory Infections (ARI)
 - ◆ USAID Funding for Malaria
 - ◆ USAID Funding For Water and Sanitation
 - ◆ List of USAID Projects With A Health Or Child Survival Component FY 85-93
- Standard Reports On Health Statistics (Discontinued after 1992 in favor of a Wall Chart and Country Profiles)
 - ◆ Africa: Selected Health and Demographic Statistics In USAID Assisted Countries
 - ◆ Latin America And The Caribbean: Selected Health and Demographic Statistics In USAID Assisted Countries
 - ◆ Asia: Selected Health and Demographic Statistics In USAID Assisted Countries
 - ◆ Near East: Selected Health and Demographic Statistics In USAID Assisted Countries
- USAID Health and Population Profiles in 84 countries (these are updated periodically)



* THE CONTENTS OF APPENDIX B FOLLOW ON THE NEXT 11 PAGES.



Information Request Form

CENTER FOR
INTERNATIONAL
HEALTH
INFORMATION

A USAID Resource
Managed by

1601 North Kent Street
Suite 1001
Arlington, Virginia 22209
(703) 524-5225
Telex 272785 ISTI UR
FAX (703) 243-4669

Melanie Marlett

Name of Person Requesting Information

11 / 11 / 92

Date Request Submitted

11 / 19 / 92

Date Information Needed (must be filled in with month/day/year. ASAP is not acceptable.)

POL/SP

Office/Affiliation

Address

(202) 647-8595

Phone

FAX (if available)

Describe information request (please be specific): Use back of form if more space is needed

An analysis of the relationship between
Infant Mortality, Life Expectancy and
GNP per capita

Check box if request is continued on attached sheets

Please designate information use: (check appropriate box)

Internal to USAID

Congressional

External to USAID

Other (specify) _____

Note: All information requests for Congressional use, and requests for external use of non-standard reports requiring over eight hours of CIHI staff time to prepare, need USAID/CTO clearance.

CIHI OFFICE USE ONLY

USAID/CTO Clearance _____ Time (hours) 1

Request Number D111141

Date CIHI Received 11/11/92

Person Completing Form Roy

Unit Assigned To HSA

Unit Person Responsible Roy

Final Review Roy

Date Delivered 11/16/92

Copied to Chron File

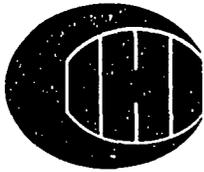
Transmittal Letter Needed

Program/Diskette Location. (See Reverse.)

Done

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FAX (703) 243-4669

M E M O R A N D U M

DATE: November 13, 1992
TO: POL/SP, Melanie Marlett
FROM: CIHI/ISTI, Roy Miller *in Miller*
CDIE/ESDS, David Moore *D Moore*
SUBJECT: IMR and Life Expectancy

There are two aspects to any discussion of the relationship between IMR and Life Expectancy: the empirical and the theoretical. I will start with the theoretical (for which, if it is not comprehensible, I apologize).

For a given country at a point in time, the two quantities -- IMR and Life Expectancy -- are computed from the same basic data: the population at a point in time and the age-specific mortality rates at that same point in time. The age specific death rates are defined as the number of persons of a specific age (or in a specific age category) who die per 1,000 persons of that same age in the population (or in that age category) in a given year. Given the age-specific death rates and the population at a point in time, demographers build "Life Tables" which show the probabilities of surviving from one age (or age category) to any other age (or age category). The IMR is the probability of a newborn surviving to 12 months of age and the under 5 mortality is the probability of a newborn surviving to 60 months of age.

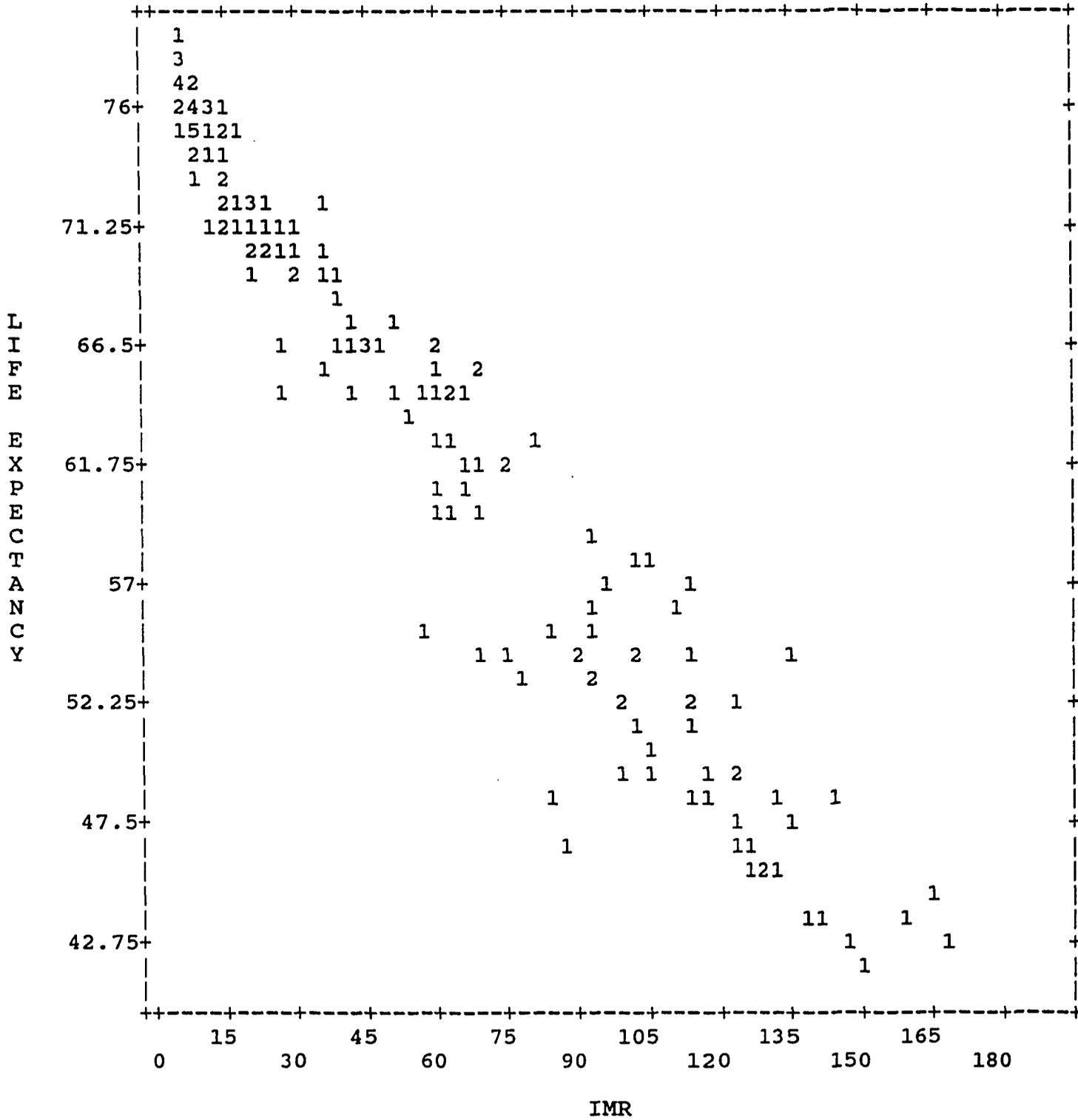
In the developing world, one can rarely find good enough data to build a life table. Frequently, demographers piece together existing bits of data about a country and, using models for different country types developed over the years, construct an estimate of the life table from those models. The U.N. projections of both IMR and Life Expectancy used by CIHI/ISTI (or, the BUCEN projections) are based on these models. Therefore, it is not surprising that the relationship between IMR and Life Expectancy (shown below) is very strong and predictable.

In summary, because both variables are estimated from the same empirical base and/or model, either one can be used with equal confidence to answer a policy questions.

Needless to say, the empirical view of IMR and Life Expectancy shows a strong relationship. CIHI took the 1990 estimates of IMRs and Life Expectancy for 157 countries of population above 300,000 as reported in the U.N. World Population Prospects, 1990. The correlation coefficient relating the two variables is $-.97$. The scatter plot attached shows the "curve". (The "numbers" denote number of countries falling at the coordinates marked by the "numbers". There appears to be a natural dividing line at an IMR of 75 and a Life Expectancy of 60. Only three countries have IMRs higher than 75 with life expectancies higher than 60: Libya (75.2 and 61.8), Morocco (75.2 and 62) and Peru (82 and 63). Seven countries have IMRs below 75 with low life expectancies: Botswana (62.5 and 59.8), Congo (69 and 53.7), Kenya (68 and 59.7), Papua New Guinea (56 and 55) and Zimbabwe (60.4 and 59.56).

When GNP per capita is added to the analysis the results are predictable. High GNP per capita countries are the low IMR/high Life expectancy countries. The correlation coefficient between IMR and GNP per capita is -0.60 while the coefficient between Life Expectancy and GNP per capita is 0.63 . Scanning the data, it appeared that an estimate of GNP per capita of \$900 "divided" the countries into the two groups defined by the cut-off point of IMR = 75 and Life Expectancy = 60. The attached table lists the countries whose GNP per capita are exceptions to the rule that a GNP per capita of \$900 predicts whether the country is a high IMR/low LE country or not.

LIFE EXPECTANCY VS. IMR, 1990



157 cases plotted.

50

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COUNTRIES WITH IMR<=75 AND LE>=60 GNP/PC<900

COUNTRY	LIFE EXPECTANCY		GNP PER CAPITA
	IMR	AT BIRTH	
BURMA	64.650	61.260	210.000
CHINA	29.550	70.140	370.000
DOMINICAN REPUBLIC	61.000	66.675	830.000
EGYPT	61.000	60.325	600.000
GUATEMALA	53.500	63.360	900.000
HONDURAS	63.000	64.865	590.000
INDONESIA	70.000	61.465	570.000
LEBANON	44.300	66.055	250.000
MONGOLIA	64.050	62.460	880.000
NICARAGUA	56.000	64.780	810.000
PHILIPPINES	42.450	64.235	730.000
SRI LANKA	26.000	70.925	470.000

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COUNTRIES WITH IMR > 75 AND LE < 60 GNP/PC >= 900

COUNTRY	LIFE EXPECTANCY		GNP PER CAPITA
	IMR	AT BIRTH	
CAMEROON	90.000	53.740	960.000
GABON	98.500	52.525	3330.000
NAMIBIA	101.500	57.500	1030.000



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FAX (703) 243-4669

Joan Curry (for Karen Horsch)
Name of Person Requesting Information

11 / 8 / 93
Date Request Submitted

11 / 12 / 93
Date Information Needed (must be filled in with month/day/year. ASAP is not acceptable.)

CDIE/ESDS
Office/Affiliation

Address
(703) 812-9770

Phone FAX (if available)

Describe information request (please be specific): Use back of form if more space is needed

Time series data in LOTUS spreadsheets, on diskettes for the following indicators for all USAID assisted countries:

- a) Total Population
- b) Average Annual Growth Rate
- c) Infant Mortality
- d) Exclusive Breastfeeding
- e) Complementary Breastfeeding
- f) Continued Breastfeeding
- g) DPT 3 vaccination coverage
- h) Contraceptive prevalence

Check box if request is continued on attached sheets

Please designate information use: (check appropriate box)

- Internal to USAID Congressional
 External to USAID Other (specify) _____

Note: All information requests for Congressional use, and requests for external use of non-standard reports requiring over eight hours of CIHI staff time to prepare, need USAID/CTO clearance.

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USAID/CTO Clearance _____ Time (hours) 8

Request Number N 111 251

Date CIHI Received 11 / 8 / 93

Unit Assigned To HSA

Final Review Roy

Person Completing Form Roy

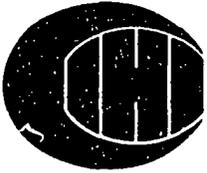
Unit Person Responsible Roy

Date Delivered 11 / 15 / 93

- Copied to Chron File Transmittal Letter Needed Done Program/Diskette Location. (See Reverse.)

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M E M O R A N D U M

DATE: November 15, 1993
TO: ESDS/Joan Curry and POL/CDIE/E, Karen Horsch
FROM: CIHI/ISTI, Roy Miller 
SUBJECT: Request for indicator values made 11/8/93

On the diskette accompanying this memo are a number of lotus files with the data requested on November 8. Except for one file (TSMORT) to be discussed later, all of the files are A.I.D. region specific. The first two characters of the file name designate the region (AF=Africa, AS=Asia, EU=Europe, LA=Latin America and NE=Near East). The third and fourth characters designate the indicator (TP=Total Population, AG=Average Annual Growth Rate, IM=Infant Mortality, EB=Exclusive Breastfeeding, CF=Complementary Feeding, CB=Continued Breastfeeding, MM=Contraceptive Prevalence, Modern Methods and DP=DPT 3 Coverage Rate). Thus, by looking at the first four characters, the contents of the file can be determined. If you need data from a country not in the spreadsheet, let me know. For some countries which we no longer designate as A.I.D. specific (for example, Sudan and Zaire), data does exist in our databases.

The breakdown by region enabled me to use existing programs to provide a list of sources for the feeding indicators and the DPT 3 coverage values. The printed versions of the spreadsheets provide a letter key next to each value. A printout of the sources corresponding to those letter keys follows each spreadsheet. I have not included the source information on the diskette.

Regarding the values for Total Population, the spreadsheets contain interpolations from the estimates provided by the United Nations World Population Prospects for years ending in "0" or "5". In the CIHI database, there are frequently different values for the current Total Population; however, there is no convenient way to project backwards from those current values. For a request for time series data, therefore, we provide the U.N. data.

The same is true of the Annual Average Growth Rates. If one were to apply the annual rates to the population figures, one would quickly realize that the two are calibrated -- if you have one of the time series, you have both of them.

The same is true of infant mortality. However, here I also offer an alternative. The file mentioned above "TSMORT" contains an alternative listing of both

infant and under 5 mortality rates for most -- but not yet all -- countries. The "CM" field gives the calculation method. "KH" stands for Ken Hill's equations, developed for the World Development Report and UNICEF's "The Progress of Nations". "BU" stands for BUCEN. In these cases, the current values of infant and under 5 mortality stored in the CIHI database are those provided by BUCEN last spring. Unfortunately, BUCEN does not project mortality backwards. To get the backwards projections, CIHI did a little sleight of hand. We computed the proportion of the BUCEN estimate for 1992 to the U.N. estimate and applied that ratio to the historical U.N. estimates to get an estimate on the same curve as that suggested by the U.N. but at a level commensurate with the 1992 BUCEN estimate. We intend to do similar "magic calculations" for the countries not included on this list which have a current value in our database from an alternative source altogether. We just have not had the chance to complete the work.

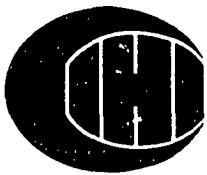
The under 5 estimates on the table are calculated using the Coale-Demeny life table models to compute the "under 5" rate based on the "infant" rate (or in the case of Ken Hill's estimates where he used the "under 5 equation", the reverse was done.)

If the PRISM folks would like to discuss the merits of these various estimates, please give me a call.

Just about all of the child feeding indicators are from DHS surveys. Until now, they have been the only source of data conforming to the definitions recently adopted by WHO, UNICEF and USAID.

The values of Contraceptive Prevalence, Modern Methods may be associated with women 15-44 years old or 15-49 years old. There is no easy way to include that on the spreadsheet. Most of our values are for the 15-44 year age group -- except where that was unavailable.

I hope all of this is not too confusing. As always, I am just a telephone call away if you need something else.



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Bruce Cogill (For RBD/Nutrition)
Name of Person Requesting Information

9/10/93
Date Request Submitted

9/20/93
Date Information Needed (must be filled in with month/day/year. ASAP is not acceptable.)

IMPACT
Office/Affiliation

1616 N. Fort Meigs Drive, Suite 1240
Address

841-1595
Phone

841-1597
FAX (if available)

Describe information request (please be specific): Use back of form if more space is needed

A listing of all projects with activity in nutrition from FY 85 through FY 92, including funding levels

(Please forward to IMPACT consultant
Janet Lowenthal
5807 Deal Place
Chevy Chase, MD 20815
301 656-7666)

Check box if request is continued on attached sheets

Please designate information use: (check appropriate box)

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Congressional

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Request Number 0-0910

Date CIHI Received 9/10/93

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Unit Assigned To HPA

Unit Person Responsible Tara

Final Review Tara

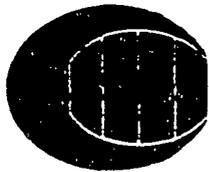
Date Delivered 9/17/93

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Transmittal Letter Needed
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September 16, 1993

Ms. Janet Lowenthal
5807 Deal Place
Chevy Chase, MD 20815

Dear Ms. Lowenthal:

As we discussed in our meeting earlier this week, I am sending you some information on A.I.D. funding for nutrition activities as reported presently through the Activity Code/Special Interest (AC/SI) System, and historically through the annual Health and Child Survival Project Questionnaires. All funding presented in the enclosed documents is based on final obligations as reported annually in Congressional Presentations from fiscal year 1985 through 1992.

The first enclosure is the standard report on nutrition activities attributed to child survival, presenting funding from 1985-92. This reporting is currently based on the five nutrition codes in the AC/SI System, although there have been some modifications on coding definitions since 1985. In 1989, A.I.D. began tracking nutrition activities in addition to what was being attributed to child survival. The following table includes funding which can be added to the standard report totals to describe all funding for nutrition activities.

Funding for the Non-Child Survival Portion of Nutrition Activities				
	FY89	FY90	FY91	FY92
Women's Nutrition	2,655,000	784,000	1,459,000	2,603,000
Nutrition, Mgt, & Planning	0	3,079,000	6,976,000	10,202,000
Other Nutrition	1,543,000	464,000	0	0
TOTAL (\$)	4,198,000	4,327,000	8,435,000	12,805,000

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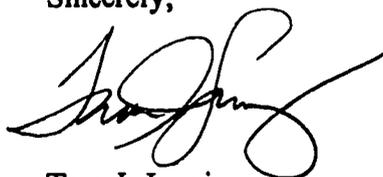
56

Several listings are also included in this package. The next page summarizes FY92 funding for select health activities which you requested on Tuesday. The activities include diarrheal disease control, immunization, acute respiratory infection, women's health, water quality for health, and health systems development. The next two listings provide project level funding for the special interest codes, Nutrition and Food Consumption (NFC), and Food and Nutrition Surveillance and Early Warning (FSE), from the AC/SI System for FY92. Please note this funding is **not additive**, and will overlap in some projects with funding presented in the standard report on Funding for Nutrition for Child Survival. On these two listings, please refer to the last column on the page titled "Total Funding for Specific SI's " to find the funding for the special interest code.

Finally, I have included a listing of ongoing projects during FY93 which report nutrition activities. This listing does not include funding, as the final figures will not be available until the spring, but provides a foundation for describing where A.I.D.'s current nutrition activities are ongoing, regardless of whether they are funded during FY93 or not.

If you have any questions or require additional information, please call me.

Sincerely,



Tara J. Lewing
Chief, Health Projects Analysis Unit

Enclosures: a/s



APPENDIX C: Staff and Primary Consultants

STAFF WHOSE LEVEL OF EFFORT EXCEEDED 500 HOURS

Name	Position at Departure	From	To
Roy Miller	Project Director	10/15/88	01/31/94
Diaa Hammamy	Associate Director	08/03/91	01/31/94
Jean Pease	Special Advisor to the Project Director	08/20/88	01/31/94
Tara Lewing	Chief, Health Projects Analysis Unit	03/04/89	01/31/94
Kristen Lindemer	Research Analyst	05/25/92	01/31/94
Marcia Rock	Research Analyst	07/16/92	01/31/94
Tim Rogers	Research Assistant	09/01/92	01/31/94
Kiki Longmire	Administrative Secretary	08/20/88	01/31/94
Yvette Robinson	Secretary, Dissemination	08/20/88	01/31/94
Ian Saarmann	Secretary/Receptionist	08/17/92	01/31/94
Luigi Jaramillo	Database Manager	02/02/91	11/30/93
Nicole Clelland	Information Analyst	08/17/91	09/30/93
Renee Titonis	Information Analyst	02/15/92	06/15/93
Beth Plowman	Chief, Health Situation Analysis Unit	05/13/89	05/15/93
Gary Pollard	Data Entry Clerk	08/20/88	04/30/93
Heidi Sawyer-Cann	Research Analyst	05/13/89	12/31/92
Jennifer Deibert	Research Assistant	05/11/91	08/31/92
Lynn Teixeira	Secretary/Receptionist	02/29/92	08/14/92
Jonathan Mosely	Information Analyst	06/23/90	02/28/92
Steve Waugh	Chief, Operations Unit	02/04/89	11/08/91
Elizabeth Maharaj	Secretary/Receptionist	10/15/88	06/21/91
Stan Lehman	Epidemiologist	08/05/89	10/12/90
Barton Burkhalter	Project Director	07/23/88	09/28/90
Kevin Meyer	Administrative Assistant	02/03/90	06/22/90
Kevin Wayne	Chief, Communications Unit	2/10/88	04/27/90
Subhi Mehdi	Chief, Operations Unit	08/20/88	07/07/89
Jack Lawson	Demographer	09/03/88	05/26/89
Sarah Koerber	Research Analyst	07/23/88	05/26/89
Rhonda Steppe	Database Manager	08/20/88	02/17/89
Sumana Brahman	Information Analyst	09/03/88	02/03/89
Janet Perkins	Research Assistant	08/06/88	01/06/89

CONSULTANTS WHOSE LEVEL OF EFFORT EXCEEDED 500 HOURS

Name	Position at Departure	From	To
Mary Kaye Nilan	Designer, Report To Congress	01/07/89	05/31/93
Rosemarie Phillips	Writer, Report To Congress	11/09/91	09/30/93
Jean Shirhall	Writer, Report To Congress	11/25/89	04/26/91
Ruth Harvey	Research Consultant	10/14/89	09/30/93
Bardia Khodadadeh	Layout Consultant	01/16/93	07/15/93
Paula Correa	Research Consultant	07/20/91	12/31/91
Elizabeth Burleigh	Research Consultant	07/23/88	07/20/90
Betty Case	Research Consultant	10/14/89	07/06/90
Tina Sanghvi	Research Consultant	09/03/88	06/08/90
Vishnu Sneller	Research Consultant	04/29/89	12/22/89