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9. ABSTRACT

The American Public Health Association, under a contract with the Agency for International Development, has designed a program in public health improvement which is called the Development and Evaluation of Integrated Delivery Systems (DEIDS). The activity is designed to assist countries to demonstrate how to establish health delivery systems within seven years. Such projects include, but are not limited to, Maternal and Child Health and Family Planning and Nutrition. The projects are to cover large populations in predominantly rural areas. They are to utilize in-country resources for the service component, although external assistance organized by DEIDS is available for planning, evaluation, training, and limited amounts of essential equipment. It is expected that successful health delivery systems can be subsequently replicated in the country or in the region.

These are phases through DEIDS projects proceed:

- a) Phase I -- reconnaissance within a specific country or region, to gather information about disease patterns, health services as currently organized, local resources, cultural aspects, community involvement, the potential for integration of various parts of public health, opportunities for innovation, current and potential staffing, training, supervision, emphasis upon preventive services, outreach, cost, and evaluation.
- b) Phase II -- Detailed planning. This phase begins if the survey in Phase I recommends it, and involves experts from the host country as well as experts assigned by DEIDS.
- c) Phase III -- Pilot Project Operations, which continue for as long as eight years.

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E V A L U A T I O N

Guidelines for DEIDS Planning - II

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of the American Public Health Association's
Project, "Development and Evaluation of
Integrated Delivery Systems".

Contract AID/csd-3423

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A. Introduction

Planning teams consisting of health professionals of the respective countries and APHA staff and consultants are beginning detailed planning for DEIDS projects in Ecuador, Thailand, and Pakistan. These Development and Evaluation of Integrated Delivery Systems for Health, Family Planning, and Nutrition (DEIDS) projects will be designed to include sufficient evaluative input to guide program decisions within the demonstration projects and serve as the basis for replication or adaptation in other parts of the country concerned and possibly its neighbors.

The DEIDS projects will be undergoing continuing evolution. Systematic evaluation will help pinpoint problems to be solved, underline successes to be replicated, and will make possible directional evolution.

The over-all objective of the DEIDS contract has been stated as follows:

To assist a country in demonstrating

- in a typical large administrative unit
- in a predominantly rural area
- utilizing primarily in-country resources for the service components of the project
- that within 5 to 7 years a health delivery system can make suitable services including, but not limited to Maternal and Child Health, Family Planning, and Nutrition,
- accessible to and
- acceptable to
- 66% of the target population (fertile women and children under 5).

This general objective of DEIDS allows each country project the freedom to plan for:

- the pattern of services
- the comprehensiveness of services, although it must include Family Planning, Maternal and Child Health, and Nutrition at the minimum
- the intensiveness of the services to any one individual, family, or community.

Although evaluation is one of the main words of the title of the contract, it is not specified that a particular evaluation system be applied, nor is it stated that evaluation systems used in the four projects should be similar enough to allow direct comparisons.

This set of Guidelines for DEIDS Planning - II(Evaluation) has the objective of presenting some principles and patterns which can be considered for incorporation into the evaluation system for each of the projects. Some countries will have available a greater number of personnel trained in evaluation and more sophisticated means of data collection and processing than other countries. Nevertheless, a common denominator of evaluative measurements will assist in the comparison of the several projects covered by the DEIDS contract, and may even allow some comparison with similar projects sponsored by other technical assistance organizations, such as the Family Health Foundation, the Population Council, and the World Health Organization.

The DEIDS Evaluation Guidelines have been developed during the past year through:

1. Staff discussions
2. Commissioning Dr. Timothy Baker to develop a position paper
3. Distribution of that paper, along with selected articles on evaluation, to 12 consultants preliminary to a day-long discussion with them on April 17, 1973
4. Dr. Baker then revised his paper to the version now attached as Appendix A.
5. At a staff meeting it was decided that certain principles, some of which are well discussed in Dr. Baker's paper, needed to be succinctly stated for our planning teams.
6. Dr. Rice prepared the draft of the guidelines, which was subjected to further editing by the staff.

This condensation of DEIDS thinking on evaluation should assist planning teams in understanding the concepts behind DEIDS and its evaluation requirements as they set about designing the evaluation systems most appropriate for the four different projects.

B. Principles

1. State Specific Objectives.

One of the first tasks of the planning teams will be to agree upon specific objectives. These will need to be supportive of the general objective of DEIDS and will need to be clearly stated. Agreement must also be reached regarding the time frame in which each specific objective is to be achieved and the means by which achievement is to be measured.

2. Establish Priorities.

The evaluation system must certainly include measurements of progress toward the general objective of providing health services to over 60% of fertile women and children under five.

Other questions to be answered and other measurements to be taken must be carefully ranked in priority, taking into consideration such things as their contribution to project efficiency and effectiveness and the feasibility of answering those questions and making those measurements.

In setting evaluation and research priorities, the planning teams must always bear in mind the principle that research cannot be allowed to interfere with project operation. In other words, resources must be used to further the general objective rather than to answer research questions which are only indirectly related to DEIDS.

In discussing priorities, it may be useful to consider very briefly some of the ways in which evaluation may serve the project. These are as follows:

- a. Measurement of activities and the results of those activities may serve as morale builders to various levels of personnel working in the project.
- b. The information gathered through the evaluation mechanism should serve administrators and managers in making day-to-day or month-to-month decisions.
- c. The evaluation system should provide the types of information required by the supporters of the program. In other words, the host country and external donor agencies need to have figures with which to justify the expenditures that they are undertaking.

3. Build Institutions

One of the purposes of the DEIDS contract is to assist countries in developing their own institutions. This purpose also obtains in the area of evaluation and research. For instance, the Ministry of Health should be improving its evaluative capacity and at the end of the project should be left with an efficient system for gathering and analyzing service statistics and utilizing them in program decision making. The reliability of vital statistics should also improve.

Further along the sophistication scale in evaluation and research might be operations or program research. During the DEIDS project it may be possible to develop a team of nationals, either within the Ministry of Health or in some other institution, which could carry on this type of "trouble shooting" activity. After the project matures, such a team might serve

an even larger population area than the one in which they were originally kept very busy.

More sophisticated research programs might also be undertaken by the DEIDS project, but with the definite assumption that these were "one time" in nature and that the capacity to conduct such research would not be part of the institution building objective.

In some countries, such as Panama, the planning team found that there was a significant amount of evaluation power already functioning in the country. Part of this capacity was in the Ministry of Health, but other organizations have developed their evaluation and data processing capacities. In some of our other DEIDS countries we may find such capacity available for investigating some of the problems which confront the project. Therefore the planning team must thoroughly investigate all of the local resources which the project will provide. When these are known, it may be possible to justify support for institution building outside of the Ministry of Health.

4. Use AID Terminology.

Since the project proposals for each country will need to be developed in the document format which AID requires, it is well to begin by using the AID evaluation terminology. A brief explanation of the terms used is included and further details can be obtained from the several booklets that are issued by AID to assist in the preparation of project proposals and in their evaluation. The "Project Evaluation Guidelines" (green booklet) issued in February 1973 by AID contains a glossary which will be helpful in the preparation of the project in general and the

evaluation components in particular. The word "input" (page 34) is defined as "the action taken or goods and services provided by donors and the cooperating country with the expectation of producing certain definable outputs. Thus, for example, with respect to personnel, the important factor is the function which the person is expected to perform rather than simply the assignment of an individual. Inputs can usually be identified by asking 'What must be provided to produce the desired outputs?'"

The word "output" (page 35) refers to the "specifically intended kind of results (as opposed to their magnitude) that can be expected from good management of the inputs provided. A Project Officer and cooperating country counterpart might be considered responsible for producing specific outputs; the Mission or AID/W action office shares responsibility for the judgment that producing these outputs will result in achieving purpose. The output of one project (that is, trained teachers) may become the input of the next project. The dynamism of the logical framework should be recognized -- it is the role being filled rather than the intrinsic nature of the factors which determines what are outputs in a project design.

In Section 2 on page 10 of Dr. Baker's paper (Appendix 1), the use of "input" and "output" measures and, later on, the "intermediate" measures between input and output are all output measures in AID terms. The Family Health Foundation's lists of "internal" and "external" evaluation indicators in "Preliminary Evaluation Indicators" also fall mostly in the category of output in AID terminology. FHF thinking is condensed in Appendix 2 and may be useful as a checklist.

The AID logical framework requires that there be objectivity in input and output statements. The magnitude of the input and output must be stated in the indicator column, and another column is provided for the actual means of verification. (See Appendix 3.) All of these are essential in designing an evaluation system. For instance, if one output is to be the number of prenatal visits for each woman in the project area, an estimate must be made under the objectively verifiable indicator of the number of visits which should be attained. In the means of verification column one would indicate where the record of such visits would be made from which the total and average can be computed. The same series of factors would need to be considered if one were using change of birthrate as a project output. One would need to give an indication of the change which could be expected within a certain period of time and the means by which the birthrate would actually be measured.

In summary, objectives must be stated in quantifiable terms, following the current AID terminology. The input category refers to the availability and utilization of resources, such as personnel, facilities, and finances. The numbers of such items required at certain stages of the program can be stated. As outputs should vary directly with inputs, evaluation must take into consideration the degree of attainment of the required level of inputs. The output category refers to the results achieved. It may be useful to divide this category into two groups, as follows:

- a. Service statistics, which include numbers of services delivered in clinic, community, or home. When these numbers are related to the population denominator we obtain rates of "receptive access", the chief criterion for judging the success of the DEIDS projects.
- b. Measurements of change in morbidity, mortality, and fertility and nutritional status within the population group.

5. Weigh Cost-effectiveness.

Although extremely expensive, the evaluation of the cost-effectiveness of the total DEIDS project may be considered. Perhaps more important is to strike a rational balance between the amount spent on evaluation in relation to the total amount spent on the development and implementation of the program. The determination of this ratio is a matter on which the planning teams will need to spend much time. One item which contributes to the above consideration is the relative value of different evaluation and research procedures. In other words, this might be called the cost-effective evaluation of evaluation procedures.

6. Integrate Evaluation into Project.

The data gathering system must be integrated into the total service project in a way which will prevent unnecessary duplication of staff and equipment.

7. Provide for Base-line Data.

It is essential that the proposed plan for evaluation provide for the collection of data early in the implementation

phase which will give a base-line from which to measure changes. This data may be supplemental to previously collected data. Base-line data will be required whether there is actually a control area or not. They, as well as successive measurements, will probably be gathered on a sample basis, since the cost of gathering all data on the total population involved is likely to be prohibitive.

8. Plan for External Evaluation.

One of the fundamental principles of evaluation is that it should be done objectively. This is seldom completely feasible when staff controlled by the national director of the project are evaluating that project and reporting to the director. However, having the current evaluation done by an outside group is seldom satisfactory and can be very expensive. An acceptable compromise would be to plan for in-depth evaluation by a suitable external group at infrequent intervals, with the concurrent evaluation being carried on by the project staff.

C. Designing the Evaluation Component

The suggestions made in this section will not be followed exactly in any of the projects, but may serve as a basis from which plans can be devised which will allow for satisfactory collection of service statistics as well as operational research and other types of research essential for the healthy development of the project.

As mentioned in the section on building institutions (B-3) each project will work towards developing an evaluation unit which will be able to continue to function after the project terminates.

Starting at the farthest out worker it may be possible to assign evaluation functions somewhat as follows:

1. Community health workers, whether they are volunteer or paid, will participate in the collection of data which is useful as service statistics and in determining the results of their activities. They will need to keep a record of the contacts which they make during their home visits, during their meetings with groups of people in their communities and during their visits with patients or clients in health posts or centers. In addition to this type of service statistic, it would be well if community health workers maintained a record of all families within their jurisdiction. The record would show the name, age, and sex of each of the people living in a household, as well as information regarding migrants. There might also be columns for the registration of such things as immunizations and the use of contraceptives. After the original census is taken the process of updating the record would not be too time consuming. This type of record would give the denominator base and numerator figures for such rates as birth, death, migration, possibly morbidity, immunization, contraceptive usage, and prenatal visits.
2. Attendance records at clinics and centers for educational and service activities would probably be maintained by an auxiliary or by volunteers under the supervision of an auxiliary.

There should be some mechanism for following particular patients and families up and down the referral ladder and some mechanism for being sure that a service to an individual is counted only once.

3. Tabulators and data processors will also be required in adequate numbers to give rapid feedback of information regarding project activities.

4. In the evaluation unit at Project headquarters there should be a few highly trained people who would be responsible for seeing that the data collection and processing systems keep functioning. They would also be charged with analyzing data for presentation to the administrators and would initiate the process of gathering new information to answer specific requests of the administrators.

5. Part of this unit, but working most of the time in the field, could be a group of survey workers. They could carry on repeated sample surveys for certain types of information, but might also be available for ad hoc surveys regarding particular problems in certain localities.

6. In addition to the capabilities mentioned above, which would probably remain with the institution after the end of the project, the plan may provide for a temporary unit which will be capable of more sophisticated research. This kind of research would hopefully obtain definitive answers to some of the complex problems which would need to be investigated, but not on a recurrent basis.

D. Conclusion

These Evaluation Guidelines for DEIDS are meant to stimulate the thinking of the planning teams for each DEIDS project. Since no two projects will have precisely the same objectives nor similar evaluative capabilities, the principles or suggested task assignments may not be equally applicable to all projects. However, their use as guidelines will help to prevent the omission of important aspects of evaluation and will help to develop evaluation systems which may allow some degree of comparability among the four projects.

E. Appendices

Although we might include a large number of attachments which would be useful for those who are planning the integration of the evaluation components into DEIDS projects, we are limiting the attachments to a very few.

1. Evaluation of Maternal and Child Health, Family Planning, and Nutrition Demonstration Projects in Rural Areas of Developing Countries", a paper prepared by Dr. Timothy Baker at our request. Attention is called to the items under 1, 2, 4, 5, and 8.
2. "Preliminary Evaluation Indicators", received from the Family Health Foundation of New Orleans, may serve as a useful checklist.
3. "Project Design Summary - Logical Framework" - AID

EVALUATION OF HEALTH SERVICES RESEARCH
AND DEVELOPMENT PROJECTS:

Integration of Health, Family Planning and
Nutrition Services in Rural Areas of
Less Developed Countries

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This background paper was prepared for a WHO consultation October 8-12, 1973, and was supported in part by the American Public Health Association and the Agency for International Development. The paper does not necessarily represent the policy of the supporting institutions.

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INTRODUCTION

- I. Evaluation of Appropriateness of Objectives (Are the objectives appropriate and acceptable to: Host Governments? The People? Sponsoring Agencies? Operating Agencies? The Workers?)
- II. Evaluation of Achievement of Objectives (How well were the objectives met at the level of both inputs and end results?)
- III. System Evaluation (stressing evaluation of means rather than ends)
- IV. Evaluative Research (What questions must be answered to permit replicability?)
- V. Balance of Service, Evaluation, and Research
- VI. Cost-Benefit Analysis
- VII. Criteria for Selecting Evaluators
- VIII. Evaluation Cost Comparisons
- IX. Brief Guide to the Literature

EVALUATION OF HEALTH SERVICES RESEARCH AND DEVELOPMENT PROJECTS:

Integration of Health, Family Planning and Nutrition Services

in Rural Areas of Less Developed Countries

Timothy D. Baker, M.D., M.P.H.

INTRODUCTION

Health, family planning, and nutrition demand increasing attention in the Less Developed Countries (LDC's) of the world today. This attention is focused on providing basic health, family planning, and nutrition services to all of the people, even those in the rural areas. In countries as diverse as Panama, Indonesia, Brazil, and Egypt, programs are developing for new systems of delivery of basic health services at reasonable costs.

In many countries, family planning is a means to population control. In essentially all countries, family planning is regarded as important for its crucial role in reducing maternal, infant, and child mortality.

The interests of LDC's parallels the interests of international institutions: The World Health Organization, The Agency for International Development, and The Population Council have major programs to provide health and family planning services to entire populations, with an emphasis on neglected rural areas. Programs have been started or are planned in over a dozen sites.

These new programs will be developmental in nature. Therefore, evaluation is essential to pinpoint problems and to identify successes, thereby permitting general adoption of programs throughout the initial countries as well as permitting spread to other countries.

The science and art of evaluation is developing and changing. To help health program planners and evaluators keep up with these changes, this article presents some of the major concepts and problems of evaluation as applied to health, family planning, and nutrition demonstration programs in rural areas of LDC's.

This article is not a "how-to-do-it" evaluation manual. Proposed and potential program settings are too varied for detailed recommendations. The general principles, however, will be useful in planning evaluation for individual projects and should lead to guidelines for decision makers in the planning of health services research and development projects.

1.1 Preconditions

As basic preconditions for evaluation, project objectives* should be clearly written at the outset in well-defined, measurable, and time related terms. The factor of time is often neglected in evaluations. The evaluation of the achievement of objectives may have negative results when the time horizon is too short. An example of this was the Development and Evaluation Project in Ethiopia, where insufficient time was allowed for objectives to be reached before the evaluation was carried out.

Objectives must be well defined and measurable to be suitable for formal quantitative evaluation. However, there are important objectives (for example, decreasing the extent of fatalism) that are difficult to state in measurable terms. Other objectives are "hidden agendas" that cannot be stated at all for political or personal reasons.

I. EVALUATION OF APPROPRIATENESS OF OBJECTIVES

The evaluation of appropriateness of objectives should be made before the start of projects by: 1) decision makers of the areas and countries affected, 2) demonstration project financiers, 3) the providers of service, and 4) the recipients of services. In most cases, objectives and priorities will differ in these four groups. The village community may have an objective of securing employment for villagers in the health posts. The health workers may have an objective of minimizing change and disruption of existing patterns of work. The demonstration project financiers may have an objective of showing that a new approach will produce more benefits for the same costs. The country decision makers may have an objective of securing the gratitude of rural people by providing services. Obviously compromises must be made in setting objectives. At this stage of evaluation, politics is as important as statistical measurement. Provision for re-evaluation should be made, as communities and decision makers often change their views.

The factor of time is important in determining appropriateness of objectives. How quickly various targets are reached is as important as the level of the target itself.

2.1 Setting Objectives in Terms of Benefits

Objectives may be stated in terms of providing either: 1) maximum benefits for a given investment, or 2) a given level of benefits for

*While some authors use the terms "goals," "objectives," and "targets," in a hierarchy of increasing specificity, the terms are used interchangeably in this paper.

the minimum investment. "Maximum benefits for minimum cost" may be a good political slogan but it is meaningless for rational evaluation procedures. In planning, objectives are usually expressed as the maximum benefits possible at the expected levels of investment.

Benefits are expressed in two measures: 1) percent of population reached, and 2) extent (intensiveness) of benefit for each individual served. These two measures of benefits are often antagonistic. (The drain on resources for the intensive care for a few children undergoing cardiac surgery may preclude the opportunity for a high percentage of pregnant women to receive pre-natal care).

2.2 Assumptions in Setting Objectives

Program planners and evaluators should accept five basic assumptions as underlying the broad goal of conducting maternal and child health (MCH), family planning, and nutrition demonstration programs. 1) Improved health is desired by most people. 2) Increasing numbers of couples desire the ability to limit their family size. 3) Decision makers in many countries are becoming more concerned about rapid population growth. 4) MCH programs are appropriate for delivery of most family planning services and treatment of side effects and complications of contraception. 5) The MCH, family planning and nutrition demonstration programs will depend on subprofessionals in the delivery of most services.

2.3 Constraints in Setting Objectives

Preliminary evaluation of appropriateness of objectives in relation to constraints leads to initial acceptance or rejection of projects by the host country decision makers, the people to be served, and service personnel. Program planners should be aware of the various constraints on objectives which include:

2.3.1 Political:

1. Objectives of decision makers differ in varying degrees from objectives of the different groups of people for whom they make decisions.
2. Project objectives must be acceptable to decision makers, to service personnel, and to most of the people served.
3. Physicians often occupy key political, decision-maker roles in LDC's, and are often opposed to extensive use of subprofessional personnel in health services, feeling that such use is "second class medicine".
4. Recipient host governments and donor agencies may contend for power in decision making.

2.3.2. Economic:

1. Funding for health and family planning projects is limited in all countries and is drastically limited in the LDC's where all available resources are limited. Health project objectives must reflect this basic constraint.
2. Resources available in countries defined as LDC's (\$1,000 per capita GNP) may vary by ten fold! What might be feasible in Brazil would be impossible in Upper Volta. The differences in financial resources in LDC's must be considered in setting objectives. (The financial resource constraints of per capita GNP in some LDC's may seem overwhelming. However, since wages are the largest components of costs of health and family planning programs, the very low wages for health workers in these LDC's tend to make the financial constraints less severe). The relationship of objectives to resource (economic) constraints has the added problem that the objectives might be perfectly acceptable to the population served, but set at a level of resource utilization which is inappropriately high for the nation's economic level. The evaluation of the appropriateness of the objectives in terms of the economic input calls for both skill in economics and a knowledge of competing priorities of other sectors.

2.3.3 Educational:

1. The level of education of the manpower pool from which the personnel for family planning and health programs must be drawn will be a constraint on objectives in many countries. The variation in adult literacy among LDC's is very great, ranging from the Philippines, with 72 percent adult literacy, to Ethiopia, (5 percent).
2. Lack of education may be a constraint on objectives of elements of programs dealing with transmission of information.

2.3.4 Social:

1. Society almost invariably resists rapid introduction of new systems and institutions.
2. Severe constraints inhibit women from working as nurses in many countries.
3. There are often constraints against men working in maternal and child health.
4. Some countries have strong social or religious constraints against family planning programs.
5. In some countries large families are considered as economically and socially desirable.
6. The capacity for institutional organization and administration is severely limited in some countries.

II. EVALUATION OF ACHIEVEMENT OF OBJECTIVES

Achievement of objectives may be measured by: input (services), output (end results), intermediate measures, and by various combinations.

3.1 Input Measures

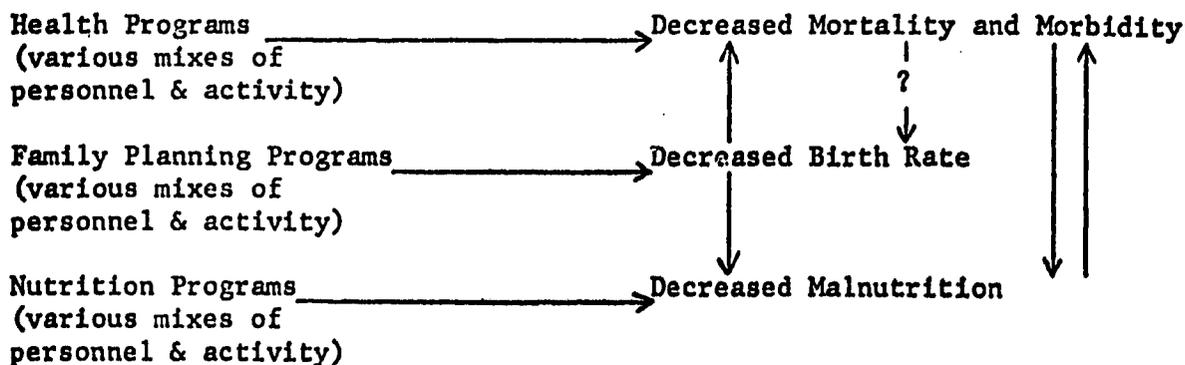
Input measures include numbers of services such as immunization, pre-natal examinations, well-child check ups, treatments, deliveries; IUD's inserted, pills dispensed, family planning motivation and follow-up visits; malnourished children rehabilitated, nutrition instruction given; etc.

3.2 Output Measures

Output (end result) measures include decreased morbidity and mortality, decreased fertility, decreased population growth, and decreased malnutrition.

Output measurement is clearly the most basic type of evaluation needed to guide program replanning--does the program really make a difference? or is it activity without effect?

Unfortunately, end results are the most difficult of all measurements to link with specific inputs. Not only are end results difficult to measure, but it is virtually impossible to establish cause and effect relationships for evaluation without extensive and expensive evaluative research. The sources of difficulty are the interactions between various end results as shown in the following diagram.



For example, decreased birthrates may have a greater effect on decreasing malnutrition than nutrition programs per se. Evaluation of the end results of separate programs is not possible unless careful research programs are set up to study the effects of varying the mix of programs. Another level of complexity is introduced in evaluating the effects of changing the mix of elements in any one of the three programs. Moreover, other factors such as roads, education, etc. affect the end results of health, family planning, and nutrition programs.

Baseline data is essential and data for a "control" area is highly desirable for end-result evaluation. Since factors such as change of attitude toward family size and changes in mortality patterns are rarely amenable to crash programs, end-result evaluation requires a long time scale.

3.3 Intermediate Measures

Measures intermediate between input and output include satisfactory weight gain of children, number of pregnant women seen in the first trimester of pregnancy, and number of couples continuing contraception and may be a good compromise for evaluators. They are easier to obtain than output measures in less than ten years of study.

3.4 Combination of Measures of Objectives, Coverage, and Costs

Unfortunately, the use of input measures alone precludes recognition of the effects of different mixes of dissimilar services. For example, is it better to immunize 90% of the children under five and give pre-natal care to 30% of the pregnant women, or to immunize 70% of the children and give pre-natal care to 35% of the pregnant women? This point is discussed further under Section 7. Cost-Benefit Analysis.

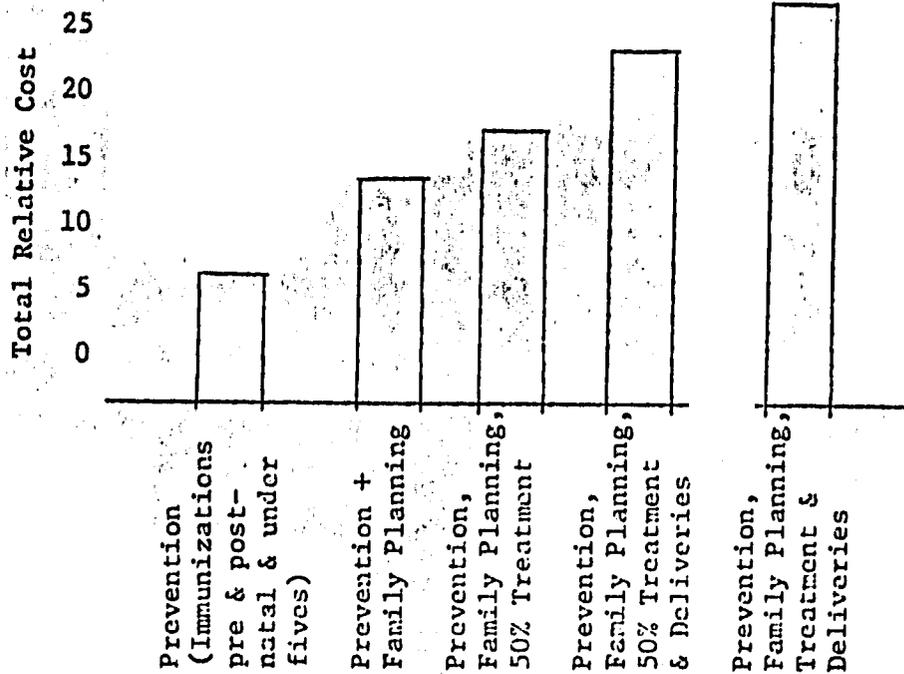
MCH services objectives can be considered in terms of a range of services offered as related to the percent of the eligible population served. Without specifying the mix of services, specifying a population target is meaningless. To help clarify the relationship of population coverage and services objectives, a model table and graph are presented.

The model table describes the relative cost of each kind of health service for a hypothetical population, based upon rough approximations for costs per service and services per person served, derived from several studies. There are obvious opportunities for decreasing marginal costs as programs are combined. The model may be fitted to the reality of a given program by plugging in more precise targets of percent of population covered, "depth" of coverage (services per person year) and costs per service. The model can be expanded and used in planning the mix of input measures and their costs and evaluating observed input measures and costs.

	<u>% of total population eligible</u>	<u>services/ person/ year</u>	<u>relative cost/ service unit</u>	<u>relative total cost</u>
Immunizations	10	1	.01	.1
Basic post-natal	4	3	.05	.6
Basic pre-natal	4	3	.05	.6
Treatment ♀ 15-45	20	3	.1	6.
Preventive check ups "under fives"	12	5	.05	3.0
Treatment "under fives"	12	4	.1	4.8
Delivery care	4	1	1.0	4.
Family planning advice	5	2	.2	2.
Family planning service	5	2	.2	2.

The model graph below shows a few of the possible combinations of services and coverage, suggesting that meaningful input evaluation should include both measures.

In conclusion, the costs of inputs should be compared with the benefits of outputs for a complete evaluation for rational resource allocation.



III. SYSTEM EVALUATION

While evaluation of objectives measures how well institutions or programs reach their input or output goals, system evaluation examines the institution itself, stressing internal functions and effectiveness. System evaluation asks: under given conditions, how closely does the organization's allocation of resources approach optimum distribution? Although goal evaluation has the appearance of greater objectivity, the many external factors impinging on goal attainment frequently make goal evaluation meaningless. In the maternal and child health--family planning projects, probably both goal and system evaluation would be appropriate and necessary for answering the basic questions.

The factor of time is as important in system evaluation as in evaluating achievements and appropriateness of objectives. System evaluation may be continuous, a part of routine record keeping, or episodic. In either case the evaluation can be used as feedback for improving programs, evaluation should be a part of the cycle of: planning, implementation, evaluation, replanning.

Pertinent examples of system evaluation measures for the family planning, MCH, and nutrition projects would include: rate of turnover of personnel, absenteeism of staff, productivity of staff, and quality of records, supervision, and management.

A program's continuity, reliability, and ability to inspire patients' confidence are end-result "system evaluation" measures. These lead to the important measure, patient satisfaction, which is essential for continuation of projects.

Training achievements and facility construction are a special case of system evaluation measures that precede full implementation of programs. The number of supervisors trained, auxiliary nurse midwives trained, traditional midwives upgraded, training programs made more relevant, and health stations constructed, are examples of system evaluation.

IV. EVALUATIVE RESEARCH

Evaluative research is a type of applied research which seeks to answer the general questions: does a program work?, at what cost?, which program elements are associated with which end results? In the health, family planning, and nutrition programs the following questions should be considered for evaluative research.

1. Is a program that offers family planning with maternal and child health services more acceptable to the people than one which offers family planning services alone? Is it more acceptable to the leaders? to the service personnel?
2. Is a health program that excludes older children, adult males, and elderly people acceptable?
3. How much does a maternal and child health program change the levels of health of mothers and children? Is there a measurable relationship between the amount of resources invested in the maternal and child health programs and the health benefits observed? Is there a "marginality" effect observed between investments and returns in maternal and child health programs? These questions are important but very costly to answer and the answers will have some degree of uncertainty.

4. Does a maternal and child health program increase the acceptance of family planning? Does a family planning program increase interest in health? Do investments in maternal and child health increase acceptance in family planning to a greater extent than the same investments in family planning alone?
5. What ratios, of what types, of health personnel to population deliver what level of services? How can optimal staffing levels be determined?
6. What are the costs of various program mixes in terms of both personnel and services offered?
7. Is patient satisfaction an important measure of health and family planning services? If so, what are the valid measures of patient satisfaction with a given program?
8. Does a minimal health program give rise to economic demand for more comprehensive service?
9. What should the balance be between preventive and curative services in relation to staff time?
10. How much money (time) should be invested in information systems?
11. How can local support be obtained?
12. Do family planning programs improve much? Do the health effects of child spacing differ from family size limitation?
13. Are community feeding programs for "under five" children acceptable? Effective?
14. How can malnourished children and infants best be identified?
15. Do community nutrition education programs have a measurable effect?
16. What role can other sectors (education, agriculture, etc.) play in meeting health, family planning, and nutrition objectives? Can these sectors be more effective in meeting objectives?

The answers to these questions require far more than ordinary evaluation. They are research evaluation or applied research, which calls for higher levels of financing, more and different personnel and a longer time scale than required for simple evaluation projects. Many

of the answers are essential for adequate development of programs that can be carried from demonstration to nationwide application.

V. BALANCE BETWEEN RESEARCH EVALUATION AND SERVICE

6.1 Research Service Spectrum:

In the implementation of a new idea, concept, or program, optimum development follows a sequence of: 1) Basic research--to test hypotheses in the laboratory or in a restricted, usually small, population with control groups for comparison. 2) Applied research--to test in greater depth, validity of ideas or concepts in the open community, using somewhat larger populations and control groups in most cases. 3) Pilot projects--to determine whether usual patterns of staffing, staff capability and other program elements are adequate to implement the new concepts or programs in medium-sized populations. 4) Demonstration projects--to prepare programs for adoption at the national level, to give the opportunity for trials in different parts of the country, and to provide opportunities for observation and staff training needed to extend the program nationwide, often undertaken on a regional basis. 5) Service programs for the nation--to extend new programs to the total population, based on the information gained in research, pilot, and demonstration projects.

6.2 Evaluation of Service and of Research:

In the research stages of the process of idea development and implementation, evaluation is usually internal and deals with both input and output measures and their relationship. Comparison groups are used to help establish chains of causality and precise measures of effectiveness. Outside evaluation is usually operative after completion of the project when scientific peer review of the findings is carried out.

In the pilot or demonstration stages, evaluation usually stresses input measures initially, then intermediate measures, and finally output or outcome measures. Evaluation of demonstration projects is usually a combination of internal and external evaluation.

In service programs, input evaluation is emphasized with the assumption that the link between input and outcome has been established by research and demonstration projects. Inputs are compared to standards or norms established in demonstration projects or by consensus of experts. Output-evaluation measures of patient satisfaction are often applied on an intuitive basis--Do the people come for the services? Are they satisfied?

Routine ongoing-program evaluations are usually internal. Periodic program evaluations may be carried out by external evaluators for confirmation of the routine evaluations. (See Section 8. Criteria for Selecting Evaluators, for further discussion of external and internal evaluation.)

6.3 Administrator and Researcher Value Scales:

In the balance between research and service there are counter-vailing pressures from administrators to "get on with the job" and from researchers to answer the questions: "Can it be done?" and "How best can it be done?"

The costs of following the sequence of research, applied research, pilot and demonstration projects, and finally general implementation, are greater than jumping directly to general implementation. The slower, and initially more costly approach, however, may prevent major program failures and disastrous over-expenditures.

As a rule, administrators prefer getting research or evaluative results as quickly as possible to permit early decisions. A month delay in a short-term project causes greater concern to the administrator than a month delay in a long-term project. The administrator is, however, willing to trade some time for greater confidence in the research/evaluative results.

The researcher, on the other hand, usually prefers more time to get a given result--with more time, he may look at additional impinging and related factors and may pursue interesting side issues; also he is funded for a longer period. There are, however, limits: data grows stale, someone else may publish first, he may gain the reputation of a non-producer and fail to get future research projects.

In setting an evaluation design the DEIDS project directors will be concerned in striking the balance between administrative values and research values.

VI. COST-BENEFIT ANALYSIS

Evaluation must include costs of programs as well as benefits. New techniques in cost-benefit and cost-effectiveness analysis, developed by industry and now being applied to government, have relevance for the evaluation of health projects. Indeed, cost-benefit analysis would seem an ideal instrument for health policy decision makers as it permits comparison of input and output in the same terms, i.e. monetary. Furthermore, it would permit comparison between different programs and would allow measurement of the marginal return for additional investments in health, family planning, or nutrition programs.

Unfortunately, the state of the art is such that cost-benefit analysis cannot as yet fulfill these very important purposes. One basic problem is that health professionals are almost universally unsympathetic to the concept of applying economic analysis to health programs. Health professionals have been so ingrained with the concept that human life is priceless, that they cannot accept an analysis that places a financial value on human life. Furthermore, many politicians, and indeed some economists, share this same view. There is some logic supporting the

view of those who reject cost-benefit analysis, for certainly man is not a purely economic animal and the increase of productivity is not the only goal in human life.

Philosophical objections are not the only problems in cost-benefit analysis. There are numerous methodological problems. The methodological problems include the difficulty in costing the different elements of health, family planning, and nutrition programs. How should non-productive time be allocated among programs? How is administrative time allocated to programs if it cannot be measured as directly affecting one or another program? If by combining two dissimilar programs, economies of scale are achieved, to which program shall these economies be allocated?

In determining benefits, there are numerous unanswered methodological problems. 1) In a LDC, should future basic consumption foregone be subtracted from future production foregone for a person removed from the labor force by pre-retirement death? Economists are not in complete agreement as to how consumption should be considered under subsistence conditions. 2) The level of discount rates are terribly important in measuring future earnings foregone. The benefits from a given disease program vary greatly depending on the rates of discount used for calculating future productivity foregone. 3) Disease does not strike equally on all strata of society. In fact, it is well recognized that the greatest burden of disease is in the least productive segment of society. This factor is not usually taken into account in cost-benefit analyses of health programs.

Furthermore, one is faced with the difficulty that family planning programs count their benefits in "lives prevented," while health programs and nutrition programs count their benefits in "lives saved." I know of no completely satisfactory resolution of this paradox.

Some economists criticize the present methods of cost-benefit analysis in the health field because they are indirect. The methods make the assumption that if a person is freed of morbidity, disability, or pre-retirement death, he will produce as much as the average worker. To avoid this assumption, one would have to measure the effect of health programs or nutrition programs on the Gross National Product. Since there is a very small input into the health sector in relation to the total Gross National Product one should not expect a major return from this small investment. The level of the investment (under 5% in most countries) is so low that too many other major factors make analysis of the effect of health on the Gross National Product extremely difficult if not impossible.

Does the foregoing mean that we should eschew cost-benefit analysis for evaluation of health programs? Certainly not. Despite all of its methodological and philosophical difficulties, cost-benefit analysis is a basic tool for program evaluation. In some cases the analysis will aid the decision maker even when there are major uncertainties as to the

exact value of benefits resulting from given programs, i.e., Some programs do not have satisfactory cost-benefit ratios even when the most optimistic assumptions are made, others show satisfactory cost-benefit ratios even under the most pessimistic of assumptions. In fact, the area of cost benefit probably represents one of the most promising areas for development of new ideas and techniques in the field of evaluation of health programs.

VII. CRITERIA FOR SELECTING EVALUATORS

After setting the broad goals of evaluation and clearly delineating the objectives of the project, we must decide who shall do the evaluation. Should the evaluators be "inside" or "outside" personnel or both? Outside evaluation has the advantages of 1) greater probability of objectivity, 2) freedom from the exigencies of the operating program, and 3) freedom to question very basic organizational goals, objectives, and operational patterns. Inside evaluators may have the advantages of greater familiarity with program operations. Usually their long-term connection with the project will give them a better sense of continuity and development, and a chance to fit into the cycle of planning, evaluation, replanning, and re-evaluation.

If similar projects are to be evaluated, there are real advantages in having a single evaluation group work with all the projects. This will encourage more consistent evaluation and better exchange of information from one project to the other in the process of development.

Evaluators, whether inside or outside, should have sufficient prestige to get cooperation in data collection and to have their findings considered seriously. Obviously the evaluators must have the technical competence necessary for meaningful analysis.

In evaluating projects in family planning and health care, competence in epidemiology, economics and cost accounting, health statistics, demographic data collection and analysis, and administration of health programs is essential. Since evaluation is an art as well as a science, the evaluators must have experience as well as technical skills. Experience in several LDC's is a sine qua non.

VIII. EVALUATION COST COMPARISONS

As an aid to decision making by project planners, rough estimates of different costs for different levels of evaluation are provided. These estimates form a model that can be fitted with specific host country data.

The cost estimates are hypothetical. (Data from the Taylor-Beralson feasibility study and the Hopkins-Narangwal studies were used in making estimates.) Evaluation costs will vary from country to country and by program mix. However, the estimates may serve to place into perspective the costs of service and input and output measure evaluation. Although

a mix of developed country consultants (expatriates) and LDC counterparts would be used, the tables highlight the high cost of using senior personnel from developed countries. The great difference in costs between developed country professionals and LDC professionals in the low per-capita GNP model (Least Developed Countries) may be misleading, as there may be greater value in extensive use of developed country professionals in the Least Developed Countries where there are fewer well-trained local personnel available for the project.

MCH, FAMILY PLANNING AND NUTRITION PROJECT

HYPOTHETICAL COST* ESTIMATES: SERVICE-EVALUATION BALANCE
(Population Base 100,000)Service Costs Estimates*

(* costs in \$ U.S., excluding planning, training, and expatriate personnel costs)

Service Assumptions: Birth rate 40/1,000, target 2/3 of births and services for 2/3 of mothers and children, 3 services/yr/child 1-5; 3 services/yr/female 15-45; 5 services/yr/infant; 1 day of service/birth

	<u>Base Population</u>	<u>Target Population</u> (2/3 of Base)	<u>Services</u> <u>Per Cap</u>	<u>Services</u>
<u>Children</u>				
Age 0-1	3,600	2,400	5	12,000 services
1-	3,400	2,300	} 3	25,000 services
2-	3,200	2,100		
3-	3,100	2,100		
4-	3,000	2,000		
<u>Females</u>				
Age 15-45	25,000	16,000	3	<u>48,000 services</u>
				85,000 total services

<u>In Base Population</u>	<u>Target 2/3 Base</u>		
4,000 births	2,700 births	1 day/ birth	2,700 days for deliveries

Service Productivity Assumptions: 230 work days/yr, 6 work hr/da, 1/4 of services as home visits, 9 home visits/da (1/4 hr/home visit); 1 1/2 hr travel/da on home visits, 1/4 hr/clinic visit, 1 supervisor/6 workers

21,000 home visits/(230 da x 9 visits/da)	10 workers
64,000 clinic services/(230 da x 6 hrs x 4 pts/hr)	12 workers
2,700 deliveries/230 da	<u>12 workers</u>
	34 workers
Plus 30% additional time for activities not directly productive	<u>10 workers</u>
	44 total workers
	7 supervisors
	1 director

Service Cost Assumptions: Other costs: drugs, supplies, equipment, transportation, capital depreciation costs, etc. are equal to personnel costs

<u>Local Salaries</u>	<u>Lowest P/C CNP</u>	<u>Local Salaries</u>	<u>Medium P/C CNP</u>		
Health worker	\$500/yr x 44	\$22,000	Health worker	\$2,000/yr x 44	\$88,000
Supervisor	\$1,500/yr x 7	10,500	Supervisor	\$6,000/yr x 7	42,000
Director	\$2,500/yr x 1	<u>2,500</u>	Director	\$10,000/yr x 1	<u>10,000</u>
	Personnel	\$35,000		Personnel	\$140,000
	Other Costs	<u>\$35,000</u>		Other Costs	<u>\$140,000</u>
	TOTAL	\$70,000		TOTAL	\$280,000

Note: No provision for janitors, etc.

The P/C cost for total population served (41,300) is \$1.70 U.S. for poorest countries and \$6.80 for medium level countries. These costs are comparable to existing public and private health expenditures when the high utilization rates of this group are considered.

Evaluation Cost* Estimates for Data Gathering
 (*excluding planning, training, data analysis and expatriate personnel costs)

Input Evaluation Assumptions:

1 statistical clerk/10 service workers

<u>Input Evaluation:</u>	Low P/c GNP Countries	Medium P/c GNP Countries
4 statistical clerks @ \$500/yr	\$2,000	@ \$2,000/yr \$ 8,000
1 supervisor @ \$1,500/yr	<u>1,500</u>	@ \$6,000/yr <u>6,000</u>
	Personnel \$3,500	Personnel \$14,000
	Other Costs <u>\$3,500</u>	Other Costs <u>\$14,000</u>
	TOTAL \$7,000	TOTAL \$28,000

Input/Output, "Cost-Effective" Evaluation Assumptions:

2 home interviews/household/yr; 6 households/day/interviewer,
 1 statistical clerk/10 service workers;

100,000 base pop., 5 persons/household; 20,000 households x 2
 interviews/yr x 10% sample = 4,000 interviews/(230 days x 6 inter-
 viewers/day) = 3 interviewers

<u>Input/Output Evaluation:</u>	Low P/c GNP Countries	Medium P/c GNP Countries
3 interviewers @ \$500/yr	\$1,500	@ \$2,000/yr \$ 6,000
4 statistical clerks @ \$500/yr	2,000	@ \$2,000/yr 8,000
1 supervisor @ \$1,500/yr	1,500	@ \$6,000/yr 6,000
1 director @ \$2,500/yr	<u>2,500</u>	@ \$10,000/yr <u>10,000</u>
	Personnel \$7,500	Personnel \$30,000
	Other Costs <u>\$7,500</u>	Other Costs <u>\$30,000</u>
	TOTAL \$15,000	TOTAL \$60,000

Local evaluation costs of "Taylor-Berelson" projects are roughly similar to the above estimates: for populations of approximately 450,000, their costs ranged from \$60,000-\$115,000 per year.

Note that local evaluation can easily cost 20% as much as the total cost of services, even when evaluation is based on a 10% sample. Dr. Carl Taylor confirms the 20% level for local evaluation costs based on estimates for his Narangwal studies.

Evaluation Cost Estimates for Analysis

(Note the cost of expatriate professionals is introduced here)

Assumptions: 1 man year full time equivalent (FTE) for input evaluation; 3 man years for input/output evaluation; professional costs: expatriate \$50,000/yr (including travel, overhead, allowances and backstopping), low P/c GNP \$2,500/yr, med P/c GNP \$10,000/yr; when data processing expenses (\$10,000 for input evaluation, \$40,000 for input-output evaluation) are added, costs of data processing plus professionals equals:

	<u>Low P/c GNP Professionals</u>	<u>Med P/c GNP Professionals</u>	<u>U.S. Professionals</u>
Input	12,500	20,000	60,000
Input/Output	47,500	70,000	190,000

Planning and Training Cost Estimates

Assumptions: 1 man year FTE for initiating service programs, ¼ man year for initiating input data collection, 1 yr for initiating input/output data collection. Professional costs as above.

	<u>Low P/c GNP Professionals</u>	<u>Med P/c GNP Professionals</u>	<u>U.S. Professionals</u>
Service	2,500	10,000	50,000
Input Evaluation	625	2,500	12,500
Input/Output Evaluation	2,500	10,000	50,000

SUMMARY TABLE FIVE-YEAR PROJECT

	<u>Low P/c GNP</u>	<u>Med P/c GNP</u>
Service		
5 year operating costs	350,000	1,400,000
Planning and training		
Local or	2,500	10,000
U.S.	50,000	50,000
Input Evaluation		
5 year operating costs	35,000	140,000
Planning and training		
and <u>Analysis</u>		
Local or	625	2,500
U.S.	12,500	12,500
Input/Output Evaluation		
5 year operating costs	75,000	300,000
Planning and training		
and <u>Analysis</u>		
Local or	2,500	10,000
U.S.	50,000	50,000

This table shows the high cost of evaluation in relation to operating costs, even when a very small number of expensive U.S. consultants are used. If only one expatriate consultant were used for five years of the project, his costs (\$250,000) would approach the entire operating costs (\$350,000) for a low P/c GNP country.

BRIEF GUIDE TO THE LITERATURE ONEVALUATION OF HEALTH AND NUTRITION AND FAMILY PLANNING

The references annotated below were selected from more than 150 books and articles, on the basis of their potential usefulness to readers interested in the problems and process of evaluation. No judgment of quality is implied by omission from this abbreviated list. References are briefly described under headings of General, Health, Cost-Benefit Analysis, Nutrition, and Family Planning.

GENERAL

- G 1 Suchman, E. A. (1967) Evaluative Research Principles and Practices in Public Service and Social Action Programs, New York, Russell Sage Foundation.

An excellent theoretical base for applied research workers and program evaluators. Presents the many and varied definitions of evaluation, the problems, constraints, and external factors acting on evaluative research efforts. Topics cover the growth, current status, concept principles, types and categories of evaluation; the conduct of evaluative research and evaluative research design; evaluation studies; social experiments; and the future of evaluative research.

- G 2 Schulberg, H. C., Sheldon, A., and Baker, F., editors (1969) Program Evaluation in the Health Field, New York, Behavioral Publications.

This book compiles articles by different authors from a number of journals. Of particular interest are the articles contrasting system evaluation and goal evaluation by Etzioni, the articles on public health evaluation by Fleck and by James, and Donabedian's review of evaluation of medical care.

- G 3 Caro, F. G., editor (1971) Readings in Evaluation Research, New York, Russell Sage Foundation.

Presents basic issues. Includes a good introduction to problems of evaluation, implementation of findings and utilization of evaluation. There is more content on educational evaluation than on health evaluation. There is an excellent methodological article by Greenberg, and two articles on family planning evaluation in Taiwan.

- G 4 Rivlin, A. M. (1971) Systematic Thinking for Social Action, Washington, Brookings Institution.

Covers a variety of problems including: utilization of program planning and budgeting systems (PPBS); comparison of program objectives in diverse fields; measurement of the values (and detriments) of a program to different parts of the population; and accountability; and difficulties in cost-benefit analysis.

HEALTH

- H 1 Roemer, M. I. (1972) Evaluation of Community Health Centers, Public Health Paper No. 48, Geneva, World Health Organization.

This small monograph defines and describes the health center concept, describes past attempts to evaluate health care centers, and outlines possibilities for future research.

- H 2 World Health Organization (1971) Statistical Indicators for the Planning and Evaluation of Public Health Programmes, World Health Organization Technical Report Series No. 472, Geneva, World Health Organization.

This concrete and succinct report describes types of statistical information from the community and from health institutions. Problems of evaluation are presented briefly. Information systems and needs for research and development in a statistical data collection and analysis are discussed.

- H 3 Parker, R. L., Murthy, A. K., and Bhatia, J. C. (1972) Relating health services to community health needs. In: Indian Journal of Medical Research, 60 (12): 1835-1848, December.
- H 4 Alexander, C. A., Parker, R. L., Shankarnarayana, B. S., and Murthy, A. K. (1972) Cost accounting of health centre expenditures. In: Indian Journal of Medical Research, 60 (12): 1849-1863, December.

These two papers from the Johns Hopkins University Narangwal Rural Health Research Project discuss evaluation measurement variables related to costs, health services, and health needs.

COST-BENEFIT ANALYSIS IN HEALTH

- CB 1 Davis, J. H. (1971) Cost Benefit Analysis of Health Sector Programs: Conceptual Problems Involved in Application, Baltimore, Maryland, Johns Hopkins University (unpublished thesis).

This extensive, recent review of the complex and increasingly important field of cost-benefit analysis in health also describes some of the unanswered methodological problems.

- CB 2 Klarman, H. E. (1967) Present status of cost-benefit analysis in the health field. In: American Journal of Public Health, Vol. 57, No. 11, November.

A less recent but more readily available review of the cost-benefit analysis in health.

- CB 3 Rice, Dorothy P. and Cooper, Barbara S. (1967) The economic value of human life. In: American Journal of Public Health, Vol. 57, No. 11, November.

An unusually lucid exposition of the economic benefits of health programs.

NUTRITION

- N 1 Latham, M. C. (1972) Planning and evaluation of applied nutrition programmes. In: FAO Nutritional Studies, No. 26, Rome.

This recent monograph on evaluation in nutrition includes many brief examples and presents statistical examples of models and indices.

- N 2 World Health Organization (1966) Joint FAO/WHO Technical Meeting on Methods of Planning and Evaluation in Applied Nutrition Programs, World Health Organization Technical Report Series No. 340, Geneva, World Health Organization.

This technical meeting report includes suggestions for input, process, and output indicators in nutrition evaluation--for example, nutritional education as it is applied to nutritional programs.

- N 3 Scrimshaw, N. S., Behar, M., Guzman, M. A., and Gordon, J. F. (1969) Nutrition and infection field study in Guatemalan village 1959-1964--IX. An evaluation of medical, social, and public health benefits with suggestions for further field study. In: Arch. Environ. Health, 18: 51-63, January.

This article is one of a series on a major experiment carried out in Guatemala by the INCAP group using experimental and control villages to study and evaluate the rural health and nutrition program delivery.

FAMILY PLANNING

- FP 1 Taylor, H. C., Jr. and Berelson, B. (1971) Comprehensive family planning based on maternal child health services: A feasibility study for a world program. In: Studies in Family Planning (Population Council) 2 (2), February.

This article is a key reference which covers the problems of needs, costs, and consequences of the implementation of the "Taylor-Berelson" approach to family planning. Valuable data on cost estimates from nine countries is presented.

- FP 2 Bogue, D. J. (1970) Family Planning Improvement Through Evaluation: A Manual of Basic Principles, Chicago, University of Chicago.

This monograph focuses on evaluation of national programs but presents techniques and concepts that could be adjusted to regional programs. Two sections of particular importance discuss end use of evaluation, and communication between evaluators and executives of programs.

- FP 3 International Institute for Study of Human Reproduction (1972) Manuals for Evaluation of Family Planning and Population Programs, New York, Columbia University, August.

- No. 1 Framework for the Selection of Family Planning Program Evaluation Topics.

- No. 2 Framework for the Design of Family Planning Program Evaluation Systems.
- No. 3 Method for Estimating Future Case Loads of Family Planning Programs.
- No. 4 Operational Evaluation of Family Planning Programs Through Process Analysis.
- No. 5 The Fertility Pattern Method.
- No. 6 A Check List of Evaluative Overviews of Family Planning Program Activities.

These manuals are concise (less than 50 pages), practical, and should be of use to the evaluation planner.

FP 4 Organization for Economic Cooperation and Development (1972) An Assessment of Family Planning Programs. Fourth Annual Population Conference Report, Development Center, Paris.

This report presents a framework for evaluation as well as some of the theoretical issues in assessment of family planning programs. It concentrates on output measures rather than the input measure of services rendered.

FP 5 Lapham, R. J., and Mauldin, W. P. (1972) National family planning programs: Review and evaluation. In: Studies in Family Planning (Population Council) 3 (3), March.

This article covers both process and goal evaluation and uses an evaluative framework to present data from twenty countries. It deals more with national level program than with regional.

FP 6 Seltzer, W. (1970) Measurement of accomplishments: The evaluation of family planning efforts. In: Studies in Family Planning (Population Council) No. 53, May, pp. 9-16.

This article emphasizes the need for evaluation of family planning efforts, despite difficulties, and stresses the importance of "system" evaluation rather than end-result evaluation.

FP 7 Rural Health Research Centre, Rural Health Services and Family Planning Utilization. Annual Report of Population Research 1972-1973, Rural Health Research Centre, Narangwal, Punjab, India.

This report presents input data on time spent in various MCH and family planning activities by different personnel. Could be of great value for practical planning of evaluation.

THE FAMILY HEALTH FOUNDATION
New Orleans, La.

Preliminary Evaluation Indicators

A. Internal

1. Services:

a. Patient Activity Information

1. number of initial visits per unit time by type and outcome
2. number of revisits per unit time by type and outcome
3. number of closures per unit time by reason
4. number of reopens per unit time
5. contraceptive initiation and continuation rates

b. Service Efficiency

1.
$$\frac{\text{total program cost (direct and indirect)}}{\text{total patient visits}}$$
2.
$$\frac{\text{direct service costs}}{\text{total patient visits}} \quad \frac{\text{indirect costs}}{\text{total patient visits}}$$
3.
$$\frac{\text{total members of target population initiated}}{\text{total target population}} \times 100$$

c. Service Quality

1.
$$\frac{\text{number of incorrect diagnoses}}{\text{total number of diagnoses}} \times 100$$
2. mean patient waiting time by type of service

2. Personnel:

a. Personnel Activity

1. number of patients seen per unit time by type of service, by worker
2. number of home visits per unit time, by type of service, by worker

b. Personnel Efficiency

1.
$$\frac{\text{total patient visits}}{\text{total staff hours}} \times 100$$
2.
$$\frac{\text{actual staff hours}}{\text{planned staff hours}} \times 100$$
3.
$$\frac{\text{total personnel cost}}{\text{total patient visits}}$$

3. Supplies - Equipment:

- a. $\frac{\text{actual number of hours equipment used}}{\text{number of hours available}} \times 100$
- b. $\frac{\text{actual number of supplies used}}{\text{expected number of supplies used}} \times 100$
- c. $\frac{\text{total supplies cost}}{\text{total patient visits}}$

4. Facilities:

- a. Costs
 1. space cost per square foot
 2. maintenance cost per square foot
 3. utilities cost per square foot
- b. Efficiency of Use
 1. $\frac{\text{actual number of hours used}}{\text{total number of hours available}}$
 2. $\frac{\text{actual number of patients served}}{\text{potential number servable}}$
 3. $\frac{\text{total facilities cost}}{\text{total patient visits}}$

B. External

1. Fertility

- a. Age-specific Fertility Rates
- b. Age-Parity Grids
- c. Proportion of Population Using Effective Contraceptives, per Unit Time

2. Mortality

- a. Age-sex Specific Death Rates
- b. Infant Mortality Rate
- c. Fetal Death Rate

3. Morbidity-Health Status

- a. Point Prevalence of Target Population Immunized by Type of Immunization
- b. Point Prevalence of Communicable Disease, by Type of Disease
- c. Incidence of Intestinal Parasites, by Type and Combination
- d. Incidence of Anemia in Mother and Children
- e. Incidence of Toxemia of Pregnancy

4. Nutrition

- a. Prevalence over Time of Class I, II, or III Malnutrition in Children (Gomez Classification)

AID
PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

Life of Project:
 From FY _____ to FY _____
 Total U. S. Funding _____
 Date Prepared: _____

Project Title & Number: _____

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Program or Sector Goal: The broader objective to which this project contributes: (A-1)	Measures of Goal Achievement: (A-2)	(A-3)	Assumptions for achieving goal targets: (A-4)
Project Purpose: (B-1)	Conditions that will indicate purpose has been achieved: End-of-Project status. (B-2)	(B-3)	Assumptions for achieving purpose: (B-4)
Project Outputs: (C-1)	Magnitude of Outputs: (C-2)	(C-3)	Assumptions for achieving outputs: (C-4)
Project Inputs: (D-1)	Implementation Target (Type and Quantity) (D-2)	(D-3)	Assumptions for providing inputs: (D-4)