

Batch 50

1. SUBJECT CLASSIFICATION	A. PRIMARY	TEMPORARY
	B. SECONDARY	

2. TITLE AND SUBTITLE
 The state of the art of delivering low cost health services in developing countries, a summary study of 180 health projects

3. AUTHOR(S)
 (101) APHA

4. DOCUMENT DATE 1977	5. NUMBER OF PAGES 116 p.	6. ARC NUMBER ARC
--------------------------	------------------------------	----------------------

7. REFERENCE ORGANIZATION NAME AND ADDRESS
 APHA

8. SUPPLEMENTARY NOTES (*Sponsoring Organization, Publishers, Availability*)

9. ABSTRACT (HEALTH R & D)
 An analytic study of the delivery of low-cost health projects--their status, innovative practices, problems, and unmet needs. The eleven parts of this report discuss training and manpower, maternal and child health services, nutrition programs, family planning services, facilities, Project Outreach, linking health goals to economic and social sector activities, environmental health, medical services, health education and promotion, and administration. The study was based on questionnaire returns from 180 projects serving primarily rural populations in Asia (75) Africa (56) Latin America (44) and the Near East (5). Excerpts from the findings and conclusions: Fewer than four out of ten projects are attempting to improve environmental sanitation. Project goals tend to be vague, with few and varying measures of progress. More than 90 percent of the projects provide MCH services, health education, medical treatment and nutrition services, but intensities vary greatly. Newly established projects show more interest in nutrition, and in community involvement in planning and evaluation. Administrative plans and practices are sketchy and weak. Much experimentation is occurring with training of new categories of health workers. Projects consider themselves models for replication, but appear to lack the resources necessary for detailed planning and effective evaluation. In general, field health workers are not part of an informational network that would enable them to stay abreast of experience and developments elsewhere.

10. CONTROL NUMBER PN-AAD-035	11. PRICE OF DOCUMENT
----------------------------------	-----------------------

12. DESCRIPTORS	13. PROJECT NUMBER
	14. CONTRACT NUMBER CSD 3423 GTS
	15. TYPE OF DOCUMENT

JANUARY 1977

PN-AAD-035
CSD-3423 G

*THE STATE OF THE ART
OF DELIVERING
LOW COST HEALTH SERVICES
IN DEVELOPING COUNTRIES*

A SUMMARY STUDY OF 180 HEALTH PROJECTS



AMERICAN PUBLIC HEALTH ASSOCIATION
International Health Programs
1015 Eighteenth Street, N.W.
Washington, D.C. 20036 U.S.A.

**American Public Health Association
International Health Programs
1015 18th Street, N.W.
Washington, D.C. 20036**

**THE STATE OF THE ART OF
DELIVERING LOW COST HEALTH SERVICES
IN LESS DEVELOPED COUNTRIES:
A SUMMARY STUDY OF 180 HEALTH PROJECTS**

**Barry Karlin, Dr.P.H.
Project Director**

January, 1977

The Study upon which this Report is based was supported by the Agency for International Development, under contract No. AID/csd-3423 and No. AID/ta-c-1320. The views contained in this Report do not necessarily reflect those of the U.S. Government. Suggestions, errors or omissions should be brought to the attention of the APHA.

Publisher:

**American Public Health Association
1015 Eighteenth Street NW
Washington, DC 20036**

Copyright © 1977 by American Public Health Association, Inc.

All rights reserved. No part of this publication may be reproduced, graphically or electronically, including storage and retrieval systems, without the prior written permission of the publisher.

Printed in the United States of America

**“On ne comprend qu'en comparant.”
 (“There is no understanding without comparison.”)**

**Emile Durkheim
(1858–1917)**

FOREWORD AND ACKNOWLEDGEMENTS

The State of the Art Study, summarized in this report, is but one part of several projects of International Health Programs (IHP) directed toward improving the effectiveness of health services throughout the world. Current activities include the collection of information from published and unpublished sources such as conferences, seminars and interviews, and from the reports and observations of staff and consultants. Health information is disseminated via special reports, a quarterly newsletter plus technical monographs which are soon to be in print, and through the sponsorship of a variety of meetings. New information is generated through the support of such field activities as the Lampang, Thailand Health Development Project, the Strengthening of Health Services Project for Central West Africa, and the Sahel Integrated Health Systems Project, which are all aspects of a series of mutually supportive and interrelated activities of the IHP. In addition, the IHP carries out an active consultant service which has provided over 8,900 days of consultation throughout the world since 1970. These international health activities are the latest in a long history of such involvements beginning in 1878 when the Association resolved to support cooperative efforts with other nations. In the near future, a number of other related activities are planned, including the preparation of special case studies and reports of site visits to selected field projects of particular interest.

The IHP expresses its gratitude to AID's Office of Technical Assistance for Health for its helpful and patient support of this effort, to John Daly, Ph.D., at DHEW's Office of International Health for his assistance in the development of a conceptual framework, to Mr. Stanley K. Bigman who had a major responsibility for the development of the survey questionnaire, analysis plan and data assessment, and to Mr. David Lambert for his work in the coding and interpreting of the data.

The State of the Art Study and Report have drawn heavily upon experiences and contributions of the staff of the IHP, as well as individual consultants. A special word of appreciation is due them as it is through their assistance and efforts that this Report is possible.

**Barry Karlin, Dr.P.H.
Director, State of the Art Project**

EXECUTIVE SUMMARY OF FINDINGS AND CONCLUSIONS

Findings

In 1976, the APHA conducted a unique study of low-cost health delivery systems in 54 countries. Detailed descriptions were obtained from 180 projects (47% response rate) which are serving an estimated 150 million people.

Data were collected to permit grouped descriptions of the status of delivering various services, to identify innovative practices, to search for developmental trends, to explain differences in responses, and to identify unmet needs in the field.

The findings are limited by reliance on responses to a single mailed questionnaire, by limited tests of reliability, by possible language barriers and by a tendency to report success rather than innovations that failed. But, in spite of such limitations, a unique body of data is now available to public health workers.

The 180 projects studied are located in Asia (75 projects), Africa (56), Latin America (44) and the Near East (5). They tend to be primarily rural, commonly serve about 100,000 people and were often established in the '70s. Most projects rely on a variety of sources of funds that come from fees, drug sales, and foreign official and non-official agencies such as churches and foundations. Only half of the projects responded that they are fully matured and a similar number state that they were designed to be replicated in other parts of the country. This is particularly true for younger projects, for those with government funding, and for those with strong training components.

The populations being served tend to be very poor, and only a small fraction of the people are able to afford medical care for even minor health problems, much less major treatment. Although these projects are the major providers of health services in their area, most are able to serve less than half of their own target populations. Infant mortality was commonly reported to be 100 per 1000 live births or higher, but it may be of greater significance that a fourth of the projects were unable to supply this information.

The most common services provided are health education, maternal and child health (MCH), treatment of the ill, nutrition, immunization and training. Much less common are environmental health, rehabilitation, or major medical treatment. An important finding is that while the projects recognize the seriousness of filth-borne diseases *fewer than 4 out of 10 projects are attempting to improve environmental sanitation*. More recently established projects stress preventive services while older ones emphasize treatment. Latin American projects have strong consumer participation but less stress on MCH, family planning and disease control services. Preventive efforts are lowest in Africa and in church or fee-supported projects.

Project goals and objectives tend to be vague with few and varying measures of progress. The major obstacles faced by these projects include too few paramedical workers, lack of human waste disposal, illiteracy and superstitions. Of moderate importance were the lack of safe water, too few physicians, lack of funds, insufficient supervision and inadequate transportation for the public. Responses to such problems range from vigorous attacks to passive resignation.

There appears to be a growing interest in training with three out of four projects involved. Auxiliaries are most often trained. Two out of ten projects train physician assistants who can extend diagnostic and treatment services, and many train unusual categories of workers, volunteers and indigenous practitioners. Four out of five projects lack trained family planning workers, sanitarians, nutritionists, village health workers, physician assistants, or communicable disease control specialists. Three in ten have a health educator on the staff. Volunteers and local midwives are increasingly important, but native healers are rarely involved in project activities.

Over 90 percent of projects provide MCH services, health education, medical treatment and nutrition services, but intensities vary greatly. Goals are particularly vague in respect to nutrition and family planning.

Newly established projects show more interest in nutrition and a greater willingness to involve consumers and the community in project activities. Innovative practices include frequent home visits, use of local nutrients and such devices as arm bracelets to measure child development. A fifth of the projects report seeking to improve food production, but most state their goals in terms of nutritional status. Nutritional goals are classified in terms of attempts to *restore* nutritional status, to *alleviate* adverse effects or to *alter* systems which lead to deficiencies.

Responsibilities for supplying contraceptives are usually given to non-physicians in six out of ten projects, and IUD insertions are usually done by people other than physicians in four out of ten projects. Less than 40 percent of the projects collect knowledge, attitude and practice information (KAP) on which they might base their educational and service activities. This lack of information is true for other health conditions.

There appears to be an increasingly extensive use of community organizations and consumer involvement not only during the implementation stages but for planning and evaluation. That involvement includes informing the community or obtaining consent as well as actual decision-making responsibilities. Volunteers are used by over half of the projects and are felt to be very important for project success. National and international organizations, including universities and foundations, make important contributions, but there could be serious bypassing of local institutions.

Administrative practices vary and are characterized by incomplete plans, sketchy budgets, informal policies and procedures, centralized decision-making and modest levels of funding.

Evaluative practices appear particularly weak and lack sufficient data and data handling procedures. Only a handful of projects have formal evaluation components and could be expected to be able to measure the specific outcomes and costs of their efforts.

Projects are enthusiastic about their programs, believe that their behavior is highly innovative, and are willing to provide detailed descriptions about their work. They commonly feel that their innovative approaches can be replicated elsewhere in that they are easily attempted, readily understood and benefits are quickly observable. Furthermore, considerable interest was expressed in what was happening elsewhere.

Conclusions

A great deal of experimentation is taking place in respect to training new categories of workers who can deliver curative and preventive services usually reserved for physicians, as

well as attempts at training community workers and volunteers in response to shortages of paramedicals. These experiences deserve to be shared widely.

Projects consider themselves to be models for replication but appear to lack the resources necessary for detailed planning and effective evaluation. Serving as a model and being willing to innovate are commonly associated, and it appears to be desirable to support projects in their desire to generate evidence of their effectiveness.

Projects are discovering that local and outside organizations, consumers and volunteers can play very meaningful roles, but the extent to which these groups can be effectively utilized and the benefits which accrue are not fully appreciated.

Projects realize that unsanitary conditions contribute heavily to the loss of health and life. There is a desire to make improvements in this area but a lack of the required skills and resources. A few outstanding models do exist which deserve closer study.

In general, field health workers in less developed countries are not a part of an informational network which would enable them to stay abreast of the experiences and developments elsewhere.

The detailed responses from the field have shown that such studies are feasible and that there is considerable interest in the topics discussed. Continued support for such studies is recommended. While information obtained through mailed questionnaires permits the preparation of descriptive reports, there remains a need for more detailed assessments requiring intensive studies of individual cases. The APHA is now in the process of preparing a series of selected case studies, some of which will be based upon site visits by teams of health experts, that can be expected to result in a more qualitative study of the state of the art of delivering low cost health services. In addition, a series of in-depth technical monographs is in preparation which will draw upon the State of the Art data and experiences accrued during the course of this Study. The initial monograph will focus upon the survey process and instruments employed in the Study for use by health workers desiring to obtain full and accurate descriptions of field projects. Subsequent issues will be devoted to such topics as manpower utilization, consumer participation and evaluation.

TABLE OF CONTENTS

	Page
Foreword and Acknowledgements	i
Executive Summary of Findings and Conclusions	iii
List of Tables	ix
List of Innovations	xi
Chapter I: Introduction	1
Definitions	1
Conceptual Framework	2
Limitations of Report	4
Chapter II: Project Characteristics, Activities and Obstacles	7
Project Characteristics	7
Population Characteristics	7
Areas of Activity, Goals, Progress and Obstacles	8
Coping With Obstacles to Achievement	13
Chapter III: Health Manpower Training and Utilization	15
Chapter IV: The Delivery of Health Services	21
The Range of Services: Areas of Service, Comprehensiveness of Program, and Preventive vs. Curative Emphasis	21
Maternal and Child Health Services	22
Nutrition	23
Family Planning	30
Services for the Ill: Medical Treatment, Surgery, and Medical Records	33
Physical Facilities for Service Delivery	34
Project Outreach Through Mobile Units, Traveling Personnel and Home Services	36
Chapter V: The Promotion of Health: Education, Organizations and the Environment	39
Health Education	39
Organizational Relationships	41
Environmental Health	44
Chapter VI: Project Planning and Management	47
Chapter VII: Evaluation	51
Chapter VIII: Innovations in the Delivery of Low-Cost Health Services	55
Introduction	55
Additional Innovations	57
Innovations With Regard to Facilities	59
Innovations of a Medical Nature	59
Innovations With Regard to Health Education and Promotion	59
Innovations With Regard to Manpower	60
Administrative Innovations	60
Appendix A: List of Respondents by Region and Country	A-1
Appendix B: Key to Chart of Major Characteristics	B-1

Appendix C: Project and Population	C-1
Appendix D: Methodology	D-1
Introduction	D-1
The Identification of Projects for Study	D-1
Development and Testing of the Questionnaire	D-1
Section A. Project Services	D-2
Section B. Staff, Volunteers and Other Health Workers	D-2
Section C. Project Facilities	D-2
Section D. Relations with Other Projects, Organizations or Agencies	D-2
Section E. Community Involvement	D-2
Section F. Project Management	D-3
Section R. Information and Evaluation	D-3
Section S. Innovation and Replication	D-3

LIST OF TABLES

	Page
1. Percentages of Projects Actively Working Toward Objectives in 16 Areas	9
2. Score for Interference With Project Operations, for Selected Conditions	12
3. Activities Related to Training	18
4. Percent of Projects with Paid Kinds of Health Workers	19
5. Food Practices Which Projects Seek to Change	26
6. Project Policy Regarding Who May Perform Family Planning Services	31
7. Most Frequent Sources of Family Planning Services	32
8. Health Education Planning, By Specified Project Characteristics	49
9. Degree of Control Given to Community Representatives	42
10. Cost Accounting Approaches Used by Projects Having Record of Cost Per Person Served	48
11. Percentage of Projects Performing Selected Activities Relating to Innovations (N=180)	58
C-1. Proportions of Projects with Low Affordability Score, by Selected Project Characteristics	C-7

LIST OF INNOVATIONS*

	Page
Definition of Term "Innovation"	1
Training/Manpower	
Dealing With Problems of a Social/Psychological Nature	16
Unusual Types of Trainees	17
Introduction of New Topics in Training	17
Use of Locally Accepted Women to Motivate Community	60
Live-in Program: Exposing Students to "Normal" Community Conditions	60
Maternal and Child Health Services	
Unusual MCH Center	23
Adoption of Local, Traditional Practices: Not Cutting Umbilical Cord Immediately	23
Hostels With Cooking Facilities	23
Sterile Cord Dressing Pack	23
Nutrition Programs	
Use of Plantain Dust	29
Kitchen Gardens, Poultry Farming	29
Use of Bangle Bracelet to Determine Child's Weight	29
Establishment of Sewing School to Supplement Income	29
Family Planning Services	
Procedure for IUD Insertion	33
Use of Loan Program to Encourage Birth Control	33
Use of Traditional Catholic Customs to Overcome Social/Psychological Barriers	60
Contraceptive Depots	61
Facilities	
Movable Bamboo, Sturdier Panels	35
Housing for Families of Patients	35
Low-Cost Health Posts	35
Integration of Services	36
Mobile Vaccination Team to Overcome Problem of Refrigeration	59
"Adventure Playground" to Support Immunization and Child Care	61
Project Outreach	
Staff Members Living in Village	38
Village Health Workers as Means to Encourage Use of Project Facilities	38
Patients Screened at Home	38

* The index subheadings do not necessarily represent a single innovation but, in several cases, describe a group of innovations.

Linking Health Goals to Economic and Social Sector Activities	43
Environmental Health	45
Medical Services	
"Water Beds" to Prevent Bed Sores	59
Use of the "Neem" Tree Leaves to Treat Certain Ailments	59
Health Education and Promotion	
Use of Traditional Catholic Customs	59
Use of Local Interpretation of Malnutrition to Gain Confidence and Insure Treatment	60
Administration	
Census Officials and Tax Collectors to Insure Delivery of Services	60
Community Leaders to Influence Others	61
Combined Goals: Family Planning Services With Improved Agricultural Techniques	61
"Adventure Playground"	61
Pre-Packaging of Medication	61
"Special Integrated Financing Program"	62

CHAPTER I

INTRODUCTION

The Study of the State of the Art of delivering low-cost health services is based upon the assumption that widespread variations in approaches to problems exist, that emphases are changing, and that innovative practices are being attempted which, if shared, could serve to advance the knowledge and practice in less developed nations and elsewhere. The Study seeks to learn from these lessons as one means of expanding the vision among health workers of what is possible, discovering who is setting out on new paths, and uncovering the stumbling blocks. This Study attempts to:

1. Describe the present status of a relatively large number of health projects.
2. Determine the extent to which innovative practices are being pursued and the characteristics of those innovations.
3. Collect information which will permit the identification of possible trends in the delivery of health services within the limitations imposed by cross-sectional data and which will serve as a basis for comparison with future findings.
4. Search for possible explanations of the variations uncovered.
5. Assess unmet needs which obstruct efforts to bring about a higher quality of health care and improved health.

Definitions

"Innovations": An idea, practice or object perceived as new by an individual.¹ Specifically, any procedure, implementation or reorganization which is intended to provide a new capability of delivering health services is considered to be an innovation for the purposes of this Study.²

"Replicability": Characteristic of an innovation which facilitates duplication or adoption elsewhere. Involves the relative advantages in terms of costs, resource utilization, its compatibility with existing practices or values, the complexity and ease of trying the new practice, and the ease of understanding and observing the innovation and its outcome.

¹ Rogers, Everett M., *Communication Strategies for Family Planning*, New York: The Free Press, 1973, pp. 76-78.

² Innovations are viewed as being inherently subjective in terms of the perceptions of both respondents and researchers. For the interest of the reader, the definition and instructions for respondents were:

"Innovative practices" include any new, unusual, different way of conducting a public health program—any idea, activity, practice, method, technique or device which is different from:

1. The ways that you were trained or in taught at medical, nursing or other professional school
2. The usual Western medical or public health practice
3. The ways in which things are usually done in developing countries, including your own
4. The ways in which your project has done things in the past

Innovations you described *do not have to be original with you*. You may have copied something that you saw or heard of elsewhere. It is an innovation if it is (or was) *new for your project*. Innovations are not necessarily "good" or improvements; some changes may make conditions worse. Tell us about *unsuccessful* innovations—new ideas that have not worked well—as well as successful ones that you feel should be "replicated" or copied.

"Health Project": An organized group of people engaged in a set of coordinated activities designed to bring about improved health services or status for a designated portion of the population.

Conceptual Framework

Literature searches in preparation for the State of the Art Study revealed that no systematic effort had been made to identify innovative practices in the field outside of the U.S. with the exception of case studies of small numbers of health projects,³ or studies of restricted areas of public health activity such as family planning.⁴ More recently, annotated bibliographies have appeared⁵ as well as collections of essays describing national health programs.⁶ None of these publications permits the making of generalizations about the status of health care in less developed nations or in determining the nature and extent of variations being attempted. Nor were any lists uncovered of public health or health-related projects in existence other than lists maintained by the organizations which sponsor such projects, with few exceptions, such as the publications of the East-West Center in respect to family planning communication and services.

A decision was therefore made to survey a relatively large number of projects with health objectives which were broader than simply the provision of curative services or the control of a single disease and which might be expected to have had experiences with new approaches to the delivery of health services. A search was undertaken for suitable health projects, a questionnaire was carefully designed, tested, modified, prepared in English and Spanish editions, and mailed to 384 health projects in 54 developing countries. (see Map on page 3.)

Highly detailed information sought. The number and complexity of elements which comprise health projects are great. A decision was made that, in an effort to obtain complete information even at the risk of a lower response rate, the final questionnaire would be comprehensive and therefore long. In spite of its length, it was felt to be unwise to attempt an armchair critical evaluation of field projects from a distance or to prepare a cookbook manual on how to plan, implement or evaluate such projects. Companion publications, in the form of monographs, are being planned.

Unique computerized statistical analysis and identification of innovations conducted. In order to combine the desire to generalize about the projects under study with the search of innovative features, a questionnaire was designed which asked for detailed quantitative information as well as the completion of a large number of open-ended questions about new or important activities and experiences. Upon being returned from the field, the questionnaires were manually edited and the data was transferred to transcription sheets for subsequent keypunching onto IBM cards. All analyses were done on the IBM 370-155 computer using TPL (table producing language) to produce univariate and bivariate tabulations.

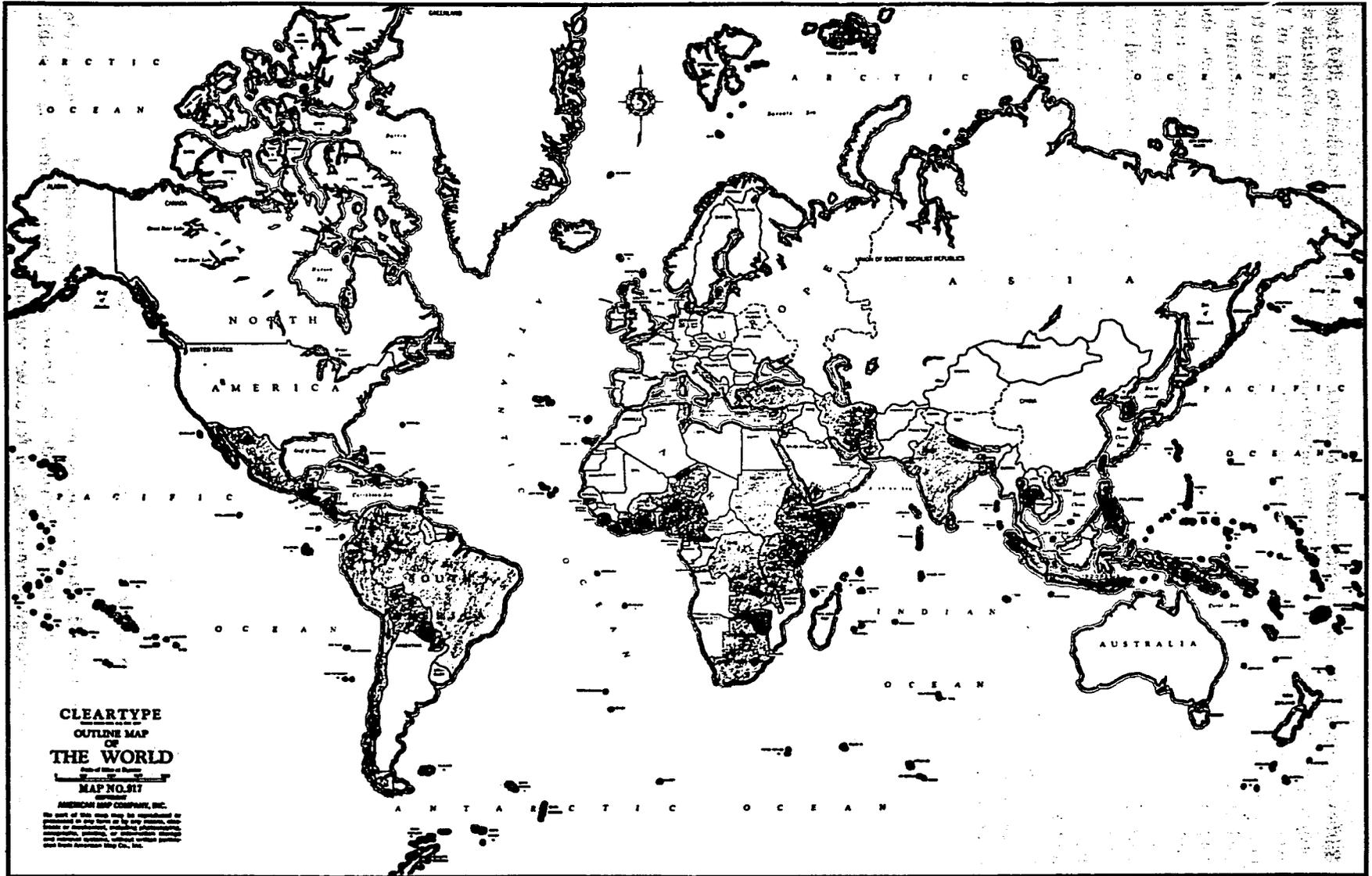
³ Newell, K.W., Editor, *Health by the People*, W.H.O., Geneva, 1975

⁴ Rogers, E.M., *op. cit.*

⁵ Akhter, S., *Low-Cost Rural Health Care and Health Manpower Training: An Annotated Bibliography with Special Emphasis on Developing Countries*, International Research Development Centre, Vol. 1, 1975.

⁶ Douglas-Wilson, I., and McLachlan, G. (Eds.), *Health Service Prospects*, The Lancet Ltd., London, 1973.

Map of the 54 Participating Countries



Survey resulted in important educational benefits. Questionnaires were mailed to 364 health projects identified in advance, including questionnaires sent to a number of individuals who were believed to be in positions to know about other suitable recipients. A total of 188 completed responses have been returned (50%) with 180 (47%) being received in time to be included in this analysis. This gratifying response to such a detailed mailed questionnaire (57 pages), as well as the comments made by respondents describing their feelings about completing the instrument, and their frequent requests for additional information, reports and copies of the questionnaire made it apparent that this process provided field workers with an important opportunity to systematically consider the many elements involved in the planning, implementing and evaluating of health projects. A typical response was, "I never tried to study how the consumers evaluate our project. I am inspired from the questionnaire and I shall study soon." (Health Project Director in Turkey) The remarkably high level of interest shown from the field has already resulted in decisions to initiate the publication of a newsletter and special monographs which will be directed to field health workers and will draw upon data collected in this Study as well as fresh information.

This summary gives special emphasis to nutrition, family planning and maternal and child health services. No single report can be expected to provide definitive statements about a subject as broad as public health services. The State of the Art Report is designed to reflect the goals presented earlier, within the constraints and limitations which follow. An expanded summary dealing with nutrition, family planning and MCH services is included owing to the importance of these topics as well as a means of indicating to the reader the depth of information contained in the full report which exceeds 200 pages in length. *Excluded from the Summary Report are:*

1. Statistical details in the form of tabulations of responses, cross-tabulations, and certain tables.
2. Samples of the research instrument, detailed methodological statements. A monograph on these topics is under preparation.
3. Detailed discussions of topical issues and references.

Additional descriptions of the Study's projects, populations and methodology may be found in Appendices C and D or from APHA.

Limitations of Report

In interpreting the findings and discussions found in this report, the reader is cautioned to keep in mind a number of important limitations:

1. Although efforts were made to avoid undue generalizations, summarizing limits the ability to introduce qualifications and exceptions.
2. Findings are based on a limited analysis of data from 180 active projects which were selected in a purposive manner rather than as a representative sample of all existing health projects. For example, projects which represented entire national health systems were excluded. As a result, national health care systems such as those found in nations with socialized medical services are not a part of this Study.
3. With the exception of internal consistency checks, no systematic effort was made to validate the data provided by respondents. Errors may have occurred as a result of difficulty with language, terminology or for other reasons.

4. A response rate of 47% is unexpectedly high for a study such as this but, as in any such research, leaves open the possibility that non-respondents were significantly different in certain respects from respondents.
5. Reliance upon data obtained from mailed questionnaires restricted the study of sensitive or complex areas such as budgets and costs. Information such as this will be sought at a later date through more intensive case studies, interviews and site visits.
6. Many of the projects studied were recently established and had not yet reached full maturity. The lack of certain activities in some cases will reflect this fact rather than a lack of interest in them.
7. It can be assumed that there was a tendency to report innovative behavior which was viewed as successful rather than that which failed.
8. Trends or changes over time are not readily measured by a single cross-sectional survey. The reader should be alert to the limitations discussed in some detail in Chapter II.
9. The reader must remain alert to the fact that innovative activities reported in this Study have *not* been evaluated as a part of the Study. No assumptions may be made that the innovations are effective, efficient or safe to introduce into other programs. In most instances, project identification numbers and country locations have been provided and interested readers may use Appendices A and B to make direct contacts to secure further information.

CHAPTER II

PROJECT CHARACTERISTICS, ACTIVITIES AND OBSTACLES

Project Characteristics

The major characteristics of the projects studied are summarized below.¹

1. A total of 180 projects from 54 developing countries are included in this Study:
 - 41% (75 projects) in East Asia and the Pacific;
 - 31% (56 projects) in Africa;
 - 25% (44 projects) in Latin America;
 - 3% (5 projects) in Near East.²
2. The median project size is 1,000 square kilometers and few are nationwide.
3. Over half were established during the 1970's and fewer than half of the projects have reached their full development.
4. Two-thirds of the projects expect to continue indefinitely.
5. Most projects have more than one source of funds with government funds being the major source.
6. The projects are primarily concerned with the delivery of health services but about 40% focus on training, research or non-health areas.
7. Over half of the projects report that they were designed as models to be replicated elsewhere. This is particularly true of the younger projects.

The primary form of data analysis was the development of cross-tabulations in which responses to questions were compared to seven variables:

1. Geographic region
2. Chief sources of funds
3. Focus of activity
4. Designed for replication
5. Rural-urban composition
6. Population size
7. Age of project

Population Characteristics

The median number of people in the service areas of projects studied is 100,000 but about one fourth of the projects serve populations of 500,000 or more. Twenty-eight projects provide some type of limited service such as training for the entire nation. Half of the

¹ More detailed descriptions of the projects and populations studied can be found in Appendix C.
² See Footnote 2 in Appendix C for explanation of size.

projects serve exclusively rural populations and over 85% of the projects have some rural residents. Seven out of ten projects wish to serve all of the people in their service areas. Small numbers focus on special groups such as the poor while others emphasize groups requiring special attention such as infants. Approximately 150 million people are in the service areas of the populations.

Communicable diseases are the major cause of death but chronic diseases, injuries and malnutrition are also cited. Infant death rates commonly exceed 100/1000 live births and a fourth of the respondents were unable to supply data. Three out of four projects charge fees for some or all services. This varies according to other funding sources. (Sizes of charges and levels of affordability are discussed in Appendix C.)

Areas of Activity, Goals, Progress and Obstacles

Most common areas of health activity: health education, treatment of the ill, MCH, nutrition. For 16 areas the question was asked: "How active or interested in this area is your project?" The proportions of projects that report "actively working toward definite objectives" for each area are shown in Table 1. (Varying percentages checked "Interested but not active" or "Not very much interested" for each area.)

Of the areas listed, it is evident that the core of the activity of these projects consists of these areas (checked by 70% or more): health education, maternal and child health, treatment and care of the ill, nutrition, immunization and inoculation, and the training of health workers.

Least common areas: environmental health, rehabilitation. By contrast, fewer than 40 percent of the projects are similarly involved in environmental sanitation; clothing or devices to protect against occupational or other environmental hazards; disability limitation and rehabilitation; housing; and efforts to develop participation by local residents in decision-making and to improve social and economic conditions. The lack of activity in environmental sanitation is especially noteworthy since later in this chapter it is shown that substantial numbers of these projects report that inadequate arrangements for human waste disposal and inadequate water supplies are important health problems in their communities. Communicable diseases and particularly filth-borne diseases are recognized as major causes of death and disability, and almost all respondents state that they are concerned about this problem. The lack of knowledge about how to protect the environment, the lack of resources, or the feeling that other agencies should be responsible may explain these findings.

As the principal purpose of this study is to identify innovative aspects of these projects, let us note that *any* activity in several of these areas may be viewed as *innovative* for health delivery programs; namely, promoting reliance on self-help participation in decision-making, improvement of social conditions, and developing adequate housing. To a certain extent this is also true of concern for environmental protection in that relatively few projects are attacking this pervasive problem.

In most of these 16 areas, a higher proportion of African projects than of those in other regions indicates some activity. Latin America has the lowest proportion of projects active in most of these areas. Especially *high* proportions of projects in each region are involved in the following areas:

Table 1
Percentages of Projects Actively
Working Toward Objectives in 16 Areas
(n=180)

Area of Activity	Percent of Projects Actively Working Toward Objectives
Health Education	79
Treatment and Care of the Ill	79
Maternal and Child Health	78
Nutrition	74
Immunization and Inoculation	74
Training of Health Workers	73
Communicable Disease Control (in general, i.e., non-specified areas)	55
Early Detection and Diagnosis	50
Increasing Ability to Rely on Self-Help and Local Resources	49
Administrative Aspects of Health Care Delivery	43
Environmental Sanitation	39
Developing Capacity and Opportunities to Share in Decision-Making	36
Improving Social and Economic Conditions	28
Disability Limitation and Rehabilitation	12
Protective Clothing or Devices for Occupational or Environmental Hazards	12

Africa — nutrition, immunization, treatment and care of the ill, training activities, promoting self-help.

Latin America — administration, encouraging consumer participation in decision-making, improving socioeconomic conditions.

East Asia — early detection of illness.

In four program areas, markedly higher percentages of East Asian and African projects report activity than of Latin American; namely, maternal and child health, communicable disease control, environmental protection, and rehabilitation.

Newer projects are more likely to be concerned with health education, nutrition, maternal and child health, early detection of illness, training, administration, and participation in decision-making. *Older* projects are more often involved in treatment of the ill, promotion of protective clothing and devices, housing, and rehabilitation.

In general, the *more rural* the project, the more likely it is to report activity in each program area (except administration and improving social conditions).

A higher proportion of *projects designed for replication* than of others mention activity in 13 of the 16 areas. (The three exceptions are environmental protection, treatment of the ill, and rehabilitation.)

Projects identifying themselves as *focused on service delivery* (contrasted with training or research) are more often involved with environmental protective devices, communicable disease control, immunization, and treatment of the ill; the training- or research-focused more often report activity, as is to be expected, in training and in administration. In other areas differences are slight.

Source of funds is related to program emphases. Projects grouped by their chief source of funds show wide variations in their choice of program areas. In general, we may contrast projects funded primarily by *government sources* (their own or foreign) or international agencies with those supported chiefly by *religious bodies or by fees for service*. A high percentage of the first group report activity in early detection of illness, training, and administration, but a low proportion of the second. The opposite is true for environmental protection, rehabilitation, and promoting self-help. However, these latter activities are relatively uncommon.

It is important to re-emphasize the encouraging finding that younger projects tend to be more concerned with health promotion and disease prevention rather than the provision of curative services. The fact that official national and international funding agencies are commonly associated with the promotion of public health can be seen as a reflection of their emerging policies and philosophies. As would be expected, projects which depend primarily upon fees appear to lack the resources for energetic preventive and promotive activities. On the other hand, it is important to note that there is evidence suggesting that fees do tend to increase a community's commitment to its project.

Objectives and goals: many are uncertain. For each program area in which the project is "actively working toward definite objectives," the respondent was asked to indicate the "general objectives" and "specific goals." Depending on the area, from 87 to 99 percent of projects (average: 91%) mention some objective. But when pressed for specific goals, only

60 to 83 percent can make some statement (average: 69%). Eighty percent or more of active projects write of some goal in immunization, other communicable disease control measures, training, and administration. Fewer than 65 percent do the same for health education and for such uncommon areas as housing, environmental protection, rehabilitation, promoting self-help, and encouraging participation in decision-making. (Except for health education, these are areas in which there is relatively little project experience to draw on and, therefore, less of an idea of what results to seek.)

Progress, success, and failure: dubious evidence of achievement. At least 75 percent of those projects involved in environmental sanitation, immunization, maternal and child health, treatment of the ill, and training indicated some progress toward their goals. For those projects active in housing, rehabilitation, administration, and promoting participation in decision-making, less than 65 percent stated that they were making progress toward achievement of goals. These percentages for projects describing goals and progress toward their achievement are, however, somewhat deceptive. Detailed analysis of these statements in the area of nutrition reveals that relatively few projects articulate goals in such fashion that it is possible to determine that they have or have not been achieved. In short, large proportions of the projects appear to be engaged in a variety of objectives which are largely implicit and unarticulated. Consequently, achievement tends to be measured, not in terms of movement in an intentional direction toward a stated end, but rather in terms of effort and energy expended.

In another context, the respondent was asked his or her opinion of the project's success or failure. Little over one half (54%) considered themselves unqualifiedly successful; over a third (36%) offered qualified or mixed judgments; and two percent thought their projects unsuccessful (the remainder did not reply).

Obstacles to project achievement: waste-disposal arrangements, personnel shortages, illiteracy and superstition. A total Interference Score (from 0 to 200) was calculated for each condition, as shown in Table 2 on page 12.

Most widely reported as interfering with project operations and the achievement of project goals (Interference Scores 85) are shortages of health workers other than physicians, widespread illiteracy and acceptance of "superstitions," and inadequate arrangements for the disposal of human wastes. Least serious (Scores under 55) are adverse weather and other conditions that reduce project accessibility.

Many obstacles are aggravated by larger project areas. Projects serving larger areas (1,000 square kilometers or more) report much more interference from the various conditions related to project accessibility and to personnel supply and supervision. For example:

Condition	Interference Score For	
	Large Areas (1,000 or more km ²)	Small Areas (Less than 1,000 km ²)
Too few physicians	94	61
Inadequate supervision	83	54
Facilities hard for residents to reach	63	39
Inadequate staff travel funds	52	32

Table 2
Score for Interference³ With Project Operations,
For Selected Conditions

Condition	Interference Score³
Target Population	
Low literacy level	90
Acceptance of superstitions	88
Sanitation	
Inadequate arrangements for disposal of human wastes	96
Inadequate or irregular supply of safe drinking water	78
Inadequate or irregular supply of water for other household needs	70
Accessibility	
Inadequate transportation for residents	68
Project facilities hard for residents to reach	48
Inadequate transportation for staff	52
Inadequate travel funds for staff	48
Project area hard to reach from outside	46
Adverse weather conditions	45
Personnel	
Too few health workers (other than physicians)	96
Too few physicians	78
Inadequate supervision of health workers	70
Funds	
Inadequate funds to buy needed resources	77
Inadequate funds for staff travel (see under "accessibility")	

³ Based on response to: "How much does this interfere with the operation of your project?" and assigning a score of 2 to "Very much," 1 to "Somewhat" and 0 to "Not much."

While it is often suggested that increased size promotes economy, it is evident that it may, to the contrary, exacerbate problems.

Greater interference is reported by African, service-oriented and rural projects. A higher percentage of African projects than of those in other regions cite every condition listed (except weather conditions and illiteracy) as a significant obstacle. East Asian projects had the lowest Interference Scores for all conditions except adverse weather, illiteracy and supervision.⁴ Especially great differences appear in the scores for shortage of other health workers (Africa, 121; Latin American, 97; East Asia, 73); inadequate supervision (Africa, 95; each of the other regions, 56); and inadequate water for needs other than drinking (Africa, 86; Latin America, 72; East Asia, 52).

Similarly, greater interference from virtually all of these conditions (except accessibility from the outside, staff transportation and travel funds) is found among *service-oriented* (rather than training or research) projects. The *most-rural* projects (85% or more rural) report *slightly* more interference than the less-rural ones from most of these conditions.

Types of obstacles cited vary among projects funded by differing sources. The projects supported by *fees* complain more often than other projects of interference from shortages of physicians, of other health workers, and of funds (both for general purchases and for staff travel), as well as from local superstition. These findings are to be expected when funding is based upon fees from impoverished populations.

Projects funded by *foreign governments* most often record interference from adverse weather and from inadequate drinking water. Those financed chiefly by their *own governments* are the most likely to mention problems of human waste disposal and of personnel supervision, perhaps in recognition of their governments' responsibilities for these activities, as well as the common orientation of the projects toward health promotion.

Local laws as obstacles. A quarter of the projects feel that laws restricting or regulating their activities impeded their operations. Types of laws mentioned most often are those concerning the licensing or activities of health workers; those setting standards for or regulating the operations of health facilities (hospitals, clinics, etc.); and those relating to family planning and/or abortion.

Coping With Obstacles To Achievement

Weather and accessibility. Most frequently, projects attempt to meet these problems by *having improvements made in the local transportation system* (e.g., providing better bus or taxi service, using bicycles, building an airstrip for helicopters, or mobilizing the community to build local roads or improve local trails). Next most often, references are made to *decentralizing services* (e.g., establishing *local* health units along major transportation routes, using mobile units). To meet the problem of serious adverse weather conditions (for example, monsoons), a number of projects *adjust their programs to the season* and have decentralized their activities. (By contrast, fully a quarter of those facing such conditions feel that "nothing can be done.")

Personnel shortages and supervision. In response to the continuing shortage of *physicians*, projects divide fairly evenly into those emphasizing *recruitment* efforts and those which seek to *delegate* some of the physician's traditional tasks to other less highly-trained staff members. Other projects, fewer in number, are variously involved in measures to *increase the supply* of physicians through expansion of training opportunities (e.g., by paying for a student's medical education). By contrast, most projects concerned with a shortage of *other*

⁴ This consistent regional difference from such varied conditions suggests that the African respondents may have tended to view problems as more serious than the East Asian respondents.

health workers take steps to increase the local supply through *training programs*. A few projects refer to the *training of volunteers* to assume some sub-professional responsibilities. Most of those that report *inadequate supervision* of their staffs see no solution. Others have adopted various *training measures*, either to improve supervisor performance or to increase their staffs' capacity to work with minimum supervision.

Water supply: purify or expand the supply. Most of the projects seeking to improve an inadequate supply of drinking water or water for other household needs mention varied measures to *increase the supply*; for example, the construction of dams, storage tanks, reservoirs, pipe lines or local wells. Smaller numbers of projects distribute materials for water *purification*, seek to educate local people in purification measures, or supply purified water for their staffs.

Human waste disposal: latrines and health education. Projects reporting unsatisfactory arrangements for the disposal of human wastes tend to encourage or assist in the construction of *latrines (pit privies)*, toilets, and similar facilities or engage in health education on proper disposal methods. However, fewer than half of the projects are involved in the building of family privies or community disposal systems.

Illiteracy: literacy classes or modification of program materials. Most projects that feel impeded by widespread illiteracy refer to *education* as their means of overcoming the problem. Some of these projects rely on adult literacy classes or more formal education conducted by government agencies; but, some projects themselves have initiated literacy programs. On the other hand, perhaps a quarter of the projects report modifying their health education programs to meet the ability of their less literate audience; for example, through reliance on audiovisual techniques (whether by utilizing mass communication media or unmediated face-to-face communication), interpreters, and others simplified techniques of presenting information.

"Superstition": uproot local beliefs or work with them. Projects were asked whether their programs were impeded by local *superstitions*, but the term was left undefined. Some respondents evidently equate superstition with the whole local system of health beliefs and practices; others respond more selectively. Most of those identifying superstition as an obstacle attempt to counteract it with health education; some seek to demonstrate the pragmatic advantages of modern public health practice. A minority (about one in seven) try to distinguish between harmful beliefs and practices, which they seek to change, and the remainder of the local health system with which they work along or incorporate (along with its practitioners) into their own programs.

Lack of money: fund appeals, fees, and self-help. Most projects have inadequate funds to achieve their goals, and they seek to remedy this lack by fund appeals to their own governments or agencies abroad. Some 41% of the projects raise funds through fees for service. Others report various devices, including the operation of or investment in local agricultural or other money making enterprises.

The solutions to these problems mentioned by projects are, in short, varied in character. In some cases, a project passively awaits action by government or other outside agencies; sometimes it vigorously presses such agencies to perform. Other projects take the initiative themselves; they use their own resources or mobilize the community, to build roads, dig wells, train the untrained or teach the illiterate. The range of actions taken, however, makes it clear how mistaken are the projects whose answer is: "Nothing can be done."

CHAPTER III

HEALTH MANPOWER TRAINING AND UTILIZATION

Health manpower is the human energy essential for improving the health of a people. How the resources of health projects are employed to prepare, delegate responsibilities, support, supervise and evaluate their manpower represents a major concern of this Study. In 1973, at a conference of the Pan American Health Organization held in Ottawa on Health Manpower Planning, it was observed that manpower development and distribution has been marked by a lack of policy and planning, has responded to pressures of particular professional and population groups, and has failed to bridge the gulf which exists between training programs and actual manpower needs and uses.¹ The past few years have seen the development of new manpower strategies, manuals and literature reviews.

The Twenty-ninth World Health Assembly held in May of 1976, recognizing the continued need for vigorous efforts to improve health manpower, resolved that the Director General be requested to establish a long-term program of development.² This report offers some insights into the degree of emphasis currently being given to manpower training and utilization in less-developed countries, the types of people being trained, techniques employed, and the roles being entrusted to health workers.

Few projects are concerned primarily with training. Fewer than one out of five of the projects studied report that their primary interest is training, most being health services oriented.³ However, it is *much more likely that more recently established projects are training oriented* compared to projects established prior to 1966 (25% vs. 9%). While there is a remote possibility that older projects have discontinued training activities, it is much more likely that the differences reflect a trend toward increasing concern with the need to train new types of health workers and to re-train existing workers to accept additional responsibilities. Primary emphasis on training is twice as common among projects supported by bilateral and multi-lateral agencies than among those receiving support from religious groups or from fees; however, it must be kept in mind that there is a tendency for the latter groups to be older. The present level of analysis does not permit identification of the more powerful of these factors.

Three out of four projects are involved in manpower training. Training activities constitute one of the most commonly shared program elements. Almost all of the projects are either involved in training or have an interest in it. Activity is particularly high for projects which were designed to be replicated and which receive government funds. Evidence of the extent of training activity was provided in the form of detailed descriptions of goals, activities, techniques and observations of outcomes. In addition to answers to questions about training, a number of projects completed open-ended questions about general project goals and degrees of success with such comments as: "The chief reason (for the project's success) is the continuous in-service training and regular evaluation and staff meetings with our 'Kitiwalas' (paramedics)." (The Philippines, No. 242) A project director in India commented that their success related to the full participation of medical and nursing trainees in rural and urban activities, with many interns now opting for careers in community health. (No. 247)

¹ Pan American Health Organization Report on Conference on Health Manpower, Ottawa, Canada, Sept. 10-14, 1973; PAHO Scientific Publication No. 279, Washington, D.C., 1974, pp. v-vi.

² W.H.O. Resolutions of the Twenty-Ninth World Health Assembly, W.H.A. 29.72, May 21, 1976.

³ See Appendix B for the identification of projects by major characteristics.

Urban projects and those serving larger populations do more training. Larger projects and those closer to cities have more diversified staffs and resources for the planning, implementation and evaluation of training programs. However, rural health workers are being expected to provide a greater variety of curative and preventive health services which will require increased pre-service and in-service training support. In-service training activities are designed to maintain or improve the level of skills of workers and are much more common than career development efforts which seek to upgrade volunteers to regular staff or to enable existing staff to accept positions of greater responsibility. While fewer than one-third of the projects report career development efforts, those which do describe a variety of highly interesting programs, including fourteen projects which mention converting volunteers to regular staff. Upon being asked what was considered to be interesting or innovative about their training activities, respondents provided the following types of information:

- Training with regard to customs, taboos of local population (Tanzania, No. 004);
- Working with such socio-economic problems as childless families (Cameroon, No. 072);
- Coping with obsession for sons and influence of mothers-in-law (Korea, No. 340);
- How to convey psycho-social consequences of population growth (Sri Lanka, No. 701) (For additional detail, see Chapter 8, p. 59);
- Breaking the "hide-bound" and "sacred" doctor-patient relationship by training auxiliaries to be "mini-doctors" (India, No. 245).

Auxiliaries most frequently trained; healer and physician assistants least. Auxiliaries are both the most frequently trained and paid during their training, with 62 percent of the projects, which offer any training, reporting the training of auxiliaries. Village health workers and registered nurses are the next most frequently trained. Of the nine categories of workers listed, traditional indigenous healers, dressers, and physician assistants are the least frequently trained. For only 14 projects (8%) to be training indigenous healers suggests that this potentially important local resource continues to be ignored. Four out of ten projects report training volunteers, the majority doing so without providing pay during the period of training.

A total of 22 percent of the respondents (40 projects) report training, or supporting the training, of physician assistants (P.A.s). While this number is not large, the total number of projects which report using physician assistants is only 39, indicating that all projects which use P.A.s train their own.⁴ Once again, some caution in interpretation is needed. The term, "physician assistant," is relatively new and is subject to misinterpretation, particularly by Spanish-speaking respondents for whom the term is particularly ambiguous. In the English version of the questionnaire, the following synonyms are given: "nurse practitioner, nurse clinician, ex-medical corpsman, medex." The Spanish edition discusses the "asistente del medico" as including "ex-miembro del cuerpo medico" and "medex." This very lack of uniformity of terminology and the concomitant likelihood that the roles of physician assistants will differ widely pose the potential problem of the development of a category of health professionals without full benefit of uniform standards regarding duration of training, content, basic skills, professional limitations and quality controls. Special efforts are needed to disseminate the experience of projects which are training physician assistants to each

⁴ One project had not yet graduated its first group of trainees.

other and to others who may wish to initiate such training. Wider agreement may also be needed concerning the types of collaborative models and professional involvements which would maximize the effectiveness of these training efforts, as suggested by Smith.⁵

Projects view their training goals as innovative. Upon being asked if their projects train types of persons not normally trained in their countries, 42 percent of the 154 projects which carry out any type of training activity report that they train unusual students. A number of examples of interest follow:

- A family health project in Nigeria is attempting to prepare clinic-based auxiliaries and a new cadre of community-based auxiliaries to take over such routine work as the weighing of children, immunization, health education and the dispensing of drugs, thus freeing nurse practitioners to provide a higher level of primary health care including initial interviews of patients. (No. 068)
- In the Zambia, a project reports training the country's first multi-purpose health auxiliaries to work in villages where more highly trained staff are reluctant to work. They have found that many of the young people that they have trained are quite capable of taking responsibility for providing both curative and preventive services. There has been, however, a relatively high dropout rate among young women. (No. 101)
- In Lampang, Thailand, a large-scale and very ambitious project involves the training of Thailand's first group of Medex workers called "Wechakorn" or doctors' hands. The training design is competency-based and employs specially prepared topical modules. Six months of classroom and supervised clinical training is followed by a six-month preceptorship prior to assignment to rural health centers and the provincial hospital. (No. 252)
- A hospital-based project in Zaire is enthusiastic about its effort to train health workers from programs other than its own in techniques of public health. This has never been done before, and over 50 workers have now been trained from programs wishing to expand their public health activities. (No. 016)
- In S. Korea, a university-supported project has been training community housewives as village health representatives to be responsible for educational and other preventive health services. These women are showing great pride in their work and are influential in changing health behavior. A danger presently exists that outside commercial agencies will take advantage of these workers for the sale of cosmetics or other products not related to health. (No. 308)

Topics of training reported to be innovative. Over half of the projects studied report training their students in person-to-person communication skills, and substantial numbers of others instruct in the effective use of mass media and how to work with local beliefs and health systems. However, it has already been noted that very few projects actually train traditional healers and only one-third train traditional midwives. There appears to be a need to explore ways in which the gulf that separates modern and traditional medical practice can be bridged both in respect to approaches to the practitioners as well as community attitudes and practices. Other innovative topics cited include training in effective decision-making in Lesotho (No. 056), accurate data collection in Zaire (No. 122), hand-sorting data cards in Thailand (No. 283), creating a tension-free clinical environment in Bolivia (No. 354), and

⁵ Smith, Richard A., "Medex: A New Approach to the Global Health Manpower Problem," *Bulletin of the Pan American Health Organization*, Vol. VII, No. 3, 1973, pp. 15-25.

classroom audio-visual and discussion techniques in Bangladesh (No. 151), Yemen (No. 156), India (No. 206), and Thailand (No. 283). Newly established projects are more likely to report such innovative practices, as are projects designed for replication and those located outside of Africa. A scoring of innovative practices in training revealed wide variations and provides data for additional future analysis. The broad range in types of workers trained and in the roles expected of them is likely to make the development of uniform standards difficult and to complicate the task of conducting comparative evaluations.

The *selection* of volunteers and staff to be trained is commonly based upon earlier evidence of ability and acceptance by the community. Community residents who are felt to be "natural leaders" are often sought. In Thailand, socio-metric techniques are employed by staff to identify community residents to whom villagers say they would turn for advice on health matters. (No. 252) More recently, however, that project is reconsidering the cost effectiveness of this selection process when compared to reliance upon the recommendations of known community leaders. Many innovative practices in terms of *how* trainees are taught were reported with over half of the projects claiming to use such innovative teaching techniques as role playing, preceptorships, programmed instruction, the use of special media in the classroom, and training within the actual community to be served rather than in a distant city. Still, only one-third of the projects emphasize skills training in contrast to more traditional lectures on theory.

Relatively high levels of evaluation of training activities are underway. While the topic of evaluation is treated in some depth in Chapter VII, a clearer appreciation of the quality of training activities can be gained from the data summarized in Table 3 below:

Table 3

Activities Related to Training	
Activity	Percent of Projects ⁶
Evaluation of trainee performance on the job	43
Evaluation of skills of trainees	80
System for improving training skills	77
Trainee participation in evaluation of trainers	63
Evaluation of training program or procedures	51
Systematic evaluation of performance of trainers (instructors)	43
Participation in Trainee Evaluation by:	
	Percent of Projects⁶
a. Trainees	53
b. Supervisors	94
c. Consumers	34
d. Peers of trainees	39
e. Others	67

⁶ Total Number of Projects Which Train (155)

From Table 3, it can be seen that there is a great deal of training evaluation, but that most is focused upon the trainee with relatively less evaluation of the trainers or the training

program. It is noteworthy that the projects report high levels of evaluation of skills inside and outside the classroom and not just test scores. Although much work is being done without regular systematic evaluation in respect to training, these results can be viewed as encouraging in that public health workers in developing areas have traditionally tended to devote their energy toward the delivery of desperately needed services and have had relatively few resources available for evaluation. It is of particular interest that over one-third of the projects with training programs report that consumers (i.e., the target population to be served) and peers of the trainees participate in evaluating training efforts. Moreover, the most recently established projects are far more likely to be evaluating their training efforts than are the pre-1966 projects (59% vs. 39%) which is suggestive of a growing concern with the quality and relevance of training activities. It is likely that the association between the training of health workers and their assignments in the projects results in training efforts which are closely related to actual field needs and that the training techniques and practical evaluations reflect this closeness.

Gaps in types of health workers are identified. Wide varieties in the types and numbers of health workers exist. Table 4 reveals that while over three-fourths of the projects have physicians and registered nurses, fewer than one-fourth employ sanitarians, physician assistants, family planning workers, nutritionists, village health workers, and other special categories, in spite of claimed interest and activity in these areas as reported in Chapter II. Further study is required to determine the extent to which having such specialized workers results in the more effective promotion of environmental sanitation, improved nutrition, successful planning of fertility, and similar goals, in contrast to projects which claim to be active in such areas but rely on multi-purpose workers.

Table 4

Percent of Projects With Paid Kinds of Health Workers	
Kind of Health Worker	Percent of Projects
Physician	83
Registered Nurse (state-registered, prof.)	76
Nurse Auxiliary (nurse assistant, aide, practical nurse)	48
Trained (certified) midwife	42
Multi-purpose health worker	41
Health educator	29
Sanitarian (sanitary or health inspector)	23
Family planning worker	23
Nutrition worker (nutritionist)	23
Pharmacist	22
Physician Assistant (nurse practitioner, nurse clinician, ex-medical corpsman, medes)	22
Dresser	22
Village health worker	22
Communicable disease worker	10
Traditional birth attendant (midwife)	9
Other	61

Lack of paramedical workers viewed as more serious than lack of physicians. The substitution of lesser trained workers is an expected outcome of shortages of physicians and other trained staff. Over one-fourth of the respondents feel that the lack of physicians constitutes a serious problem which prevents them from reaching their goals, and an equal number feel that it is somewhat important. Forty-four percent do not feel that this lack is serious, but this attitude may reflect the substitution of less highly trained workers to do the work expected of physicians. An unexpected finding is that projects view the lack of paramedical workers as being more serious than the lack of physicians (64% vs. 52%).

Volunteers midwives and physician assistants constitute important sources of project support. Well over half of the projects report using volunteers (58%), and most feel that their contribution is very important. Eight out of ten projects using volunteers use more than two for each staff employee, the median number of volunteers being fifteen per project. A word of clarification is in order with respect to the importance of traditional birth attendants. While only nine percent of the projects employ them (as shown in Table 4), a fifth of the projects use them as volunteers and a similar percentage refer patients to them or contract them on a fee-for-service basis. Similarly, albeit the number of projects using physician assistants is small (39 projects), a third of them have two or more physician assistants for each physician on the staff, and an additional eight projects have equal numbers.

In general, it is clear that considerable experimentation is taking place in the field with respect to (1) the kinds of people who are given responsibility for protecting and promoting the health of the populations being served, (2) how these workers are being prepared, and (3) how traditional patterns of health services delivery are being modified to bridge the gap between resources and needs. Respondents tend to view themselves as pioneers with regard to approach and are generally enthusiastic about their ability to provide the kinds of health services which are described in the following chapter.

CHAPTER IV

THE DELIVERY OF HEALTH SERVICES

This chapter deals with three major topics related to service delivery:

1. The range of services offered by the projects
2. Details of the types of services
3. Physical facilities and techniques of outreach used for the delivery of services

The Range of Services: Areas of Service, Comprehensiveness of Program, and Preventive vs. Curative Emphasis

Ten areas of service: most projects provide some service in each. Though no more than 70 percent of the projects identify service delivery as their major focus, every project offers one or more of some 50 services listed in the survey. The services were grouped into 10 areas of service. Approximately 80 percent of the projects are active in eight or more of these. The percentages of projects offering service in each area are as follows:

Health education	92%
Maternal health	92%
Child health	91%
Medical/surgical treatment and care	91%
Nutrition	90%
Environmental sanitation	84%
Family planning	83%
Specific protection (immunization, prophylactic medicine, etc.)	82%
Early detection and diagnosis	81%
Laboratory services	75%

Service in most areas is greater among projects that are rural, in Africa, or fee-supported. Marked differences in the percentages of projects reporting service in the ten areas include the following:

1. *African* projects show above average percentages providing services in nutrition, maternal and child health, environmental sanitation, and treatment of the ill. Family planning services are part of a higher proportion of *East Asian* projects. Relatively few *Latin American* projects provide family planning or laboratory services.
2. Above average percentages of *fee-supported* projects provide services in each area except environmental sanitation and nutrition. High proportions of those *funded by their governments* provide environmental sanitation, nutrition, maternal and child health, specific protection measures, treatment, and laboratory services. Projects financed by *religious bodies* are at the average for all projects in most areas, but a notably high proportion offer family planning services. Those supported chiefly by *foreign governments or international agencies* are least likely to provide service in every area.

3. Projects in the *most rural* areas are more likely to provide services in most areas — especially in child health, specific protections, and laboratory services — than are other projects.
4. *Slightly* greater proportions of *service-oriented* projects offer service in each area than of the training and research oriented; the differences are somewhat greater for environmental sanitation, specific protections, treatment, and especially for laboratory services.

Projects which are more comprehensive, i.e., offer a wide range of health services, tend more often to be located in East Asia, to be designed for replication, to have strong training or research components, and to be larger in staff size. Those which are more disease prevention oriented rather than curative also tend to be designed for replication with training or research features. In addition, they are more recently established and more often received funds from foreign governments. African projects were commonly more involved with treatment than with preventive services. It can be assumed that there are associations between such variable factors as design for replication, sources of funding, research and training activities and project age, and it cannot be said with certainty how strongly each factor influences these findings. Nevertheless, the results are important to health planners concerned with shifting efforts toward the preventive.

Maternal and Child Health Services

Maternal and child health services are central to the projects' programs. Because mothers and children comprise nearly two-thirds of the population of developing countries, they receive the principal attention of the projects. Programs such as nutrition, family planning, and communicable disease control are often integrated into maternal and child health services. Health education services seek primarily to influence mothers, pregnant and fertile women.

More than nine-tenths of all projects offer some maternal health and some child services, regardless of geographic location, period of establishment, or other characteristics. An exception is that child health activity is recorded by only 8 in 10 projects funded by foreign governments or focused on training or research.

Most widespread maternal health services are health education and prenatal care. Of specific maternal health services, education of mothers regarding child care ranks highest—it is provided by 9 out of 10 projects. Health education of expectant mothers and prenatal care are offered by 8 out of 10; child delivery, without obstetrical complications, by 7 and with complications by 5 in 10. Special immunizations for mothers are also given by half the projects, while cervical cytology through Papanicolaou smears is performed by 3 in 10. Smaller numbers report post-partum clinics or home visits and the teaching of breast self-examination techniques.

Deliveries with obstetrical complications, performed by half of the projects, are more frequent among projects in Africa; *not* designed for replication; *older*; financed by *fees*; and in the *most rural* areas.

Special immunizations, also provided for mothers by half of the projects, are also most frequent among *African* projects, as well as those funded by their *own governments*.

The relative rarity of *cervical cytology* may be related to the fact that it is one of the most recently developed of the services discussed here or to a lack of the necessary laboratory

facilities or treatment resources. This service is provided most often among projects in *Latin America; fee-supported*, and in the *less rural* areas.

Principal child health services are treatment, vaccination/immunization, and examination. In contrast to the educational emphasis of services for mothers, those for children are chiefly *treatment* of childhood diseases (9 of 10 projects) and deworming (8 of 10); *vaccination and immunization* to protect against specific illnesses (8 of 10); and routine physical examinations (7 of 10). Half of the projects report tuberculin testing.

Routine physical examinations are found in above average proportions of *service-oriented, African, and own-government funded* projects. *Tuberculin testing* is reported most often by *service-oriented, African, fee-supported projects*, and those *not designed for replication*.

Examples of innovations in the provision of maternal and child health services. The range and the integrated character of some projects' programs may be illustrated by these examples:

- A maternal and child health center was established at this project's hospital, for comprehensive integrated care of children under five and provision of antenatal, family planning, preventive and curative services. Though the MCH center is physically separated from the rest of the hospital, one staff delivers all services. Demonstration gardens are attached to the facility. Clinic attendance is up, waiting time is down, and congestion in the out-patient department has been reduced. Preventive services have been made more available. (Ghana, No. 624)
- Recognizing the importance of the local traditional practitioners in the health system, this project has adopted some of their practices; for example, not cutting the umbilical cord for 4-8 days after delivery, which prevents neonatal tetanus. Deliveries are done with minimum equipment (the "empty hand concept"). The maternity clinic card, which contains a record of antenatal care and family planning information, is retained by the mother and is available to the person assisting with the delivery at the home or the health facility. (Nepal, No. 239)
- Hostels with cooking facilities are provided for expectant mothers, to cope with the problems of inadequate transportation and the difficulty of predicting the date of confinement for the mothers. Thus, there is opportunity for prenatal health education and provision for proper supervision of the delivery. (Zambia, No. 108)
- A sterile cord dressing pack, including a razor blade, is sold to each expectant mother after 8 months of pregnancy so that necessary equipment for cutting and tying the umbilical cord will be available whether the child is born at home or a health facility. (Zaire, No. 125)

Nutrition

A recent publication on nutrition observes:

The interdependence of nutrition status and health status of the population is generally recognized, but, in spite of this, health and nutrition planners often do not seize the opportunities for [cooperative activities].¹

¹ *Planning National Nutrition Programs: A Suggested Approach. Volume I - Summary of the Methodology.* Prepared by American Technical Assistance Corp. Washington: Office of Nutrition, Bureau for Technical Assistance, Agency for International Development, 1973. The present discussion has been aided by that "suggested approach." The quotation is from p. 19.

The projects responding to this survey's questionnaire are aware both of the interdependence referred to and of the need to integrate nutrition services into their programs. Almost all of these projects report some kind of nutrition service, most often in the context of a maternal and child health program. This kind of service is typically rendered not by specialized nutrition workers but by other staff members with some nutrition training (e.g., nurse auxiliaries, midwives, village health workers).

This section bears on selected aspects of what may be conceived of as *the nutrition system*, consisting of a number of elements or factors whose interrelations and interactions account for the nutritional status of the population. The major elements of the nutrition system may be viewed as comprising three sub-systems: food production and supply; food processing and distribution; and food preparation and consumption.

Most of the information to be presented was obtained through two series of questions:

1. One series asks whether the project is "actively working toward definite objectives" in the area of nutrition and, if so, the nature of its *general* objectives, its *specific* goals, measures taken to reach its goals, and progress made.
2. A second set of questions ask whether the project offers nutrition services designed to intervene in the nutrition system at various specified points and, if so, which of eight listed services it provides.

Almost all projects report some nutrition activity. In response to questions on the *delivery of specified services*, 90 percent of the projects indicate that they provide at least one nutrition service. This percentage is about the same as that recorded for maternal and child health services, for health education, and for medical and surgical treatment and care (91-92%), but higher than those for other areas of service. In short, nutrition is one of the most widespread areas of program activity and interest.

Nutrition services are least frequent among fee-supported and less rural projects. If the survey projects are divided according to location, source of funds, and other characteristics, over 80 percent of each sub-group is found to provide some nutrition service.

The highest proportions active in this area are among the projects which are funded primarily by their own governments (98%); serving medium-sized target populations of 25,000-100,000 (98%); in Africa (96%); or designed for replication (95%).

By contrast, the lowest proportions are among those small groups of projects that are supported chiefly by fees (81%); serving small target populations of less than 25,000 (82%); or in the less rural areas (83%).

Project objectives and goals represent attempts to change one element or another of the nutrition system through the adoption of various strategies of intervention. About three out of four projects (74%) report that they are "actively working toward objectives" in nutrition.

Nine out of ten such projects (90%) refer to some change which their program is intended to cause (though frequently the change was inferred from rather vague language). These changes may be grouped into four categories:

1. Changes in *food production* (intended by 20 percent), such as: "Improve production of protein sources," "Teach backyard gardening, poultry-keeping..." "[Promote] fish-ponds."
2. Changes in *food intake* (sought by 28 percent) including: "Improve diet and feeding patterns," "Better use of available nutrients," "Increase protein intake."
3. Changes in the *nutritional status* of the population (the goal of 51 percent of the projects), usually put in such terms as: "Reduce malnutrition," "Improve nutritional status."
4. Changes in *morbidity or mortality* as a consequence of improved nutritional status (mentioned by 17 percent); for example: "Reduce death by undernourishment," "Reduce incidence of anemia among the mothers."

Projects not specifying a change (10%) generally couch their objectives or goals in terms of staff effort or input, such as: "Increase [people's] knowledge," "Educate mothers in child nutrition," "Survey of under 5 children and treat with...drugs..."

Targets of changes: children and mothers. Forty percent of the projects seek to change the behavior, the nutritional status or the health of "the population" or "the community" at large, or do not mention any particular target. The remaining 60 percent focus their efforts on children (44%), children and mothers (13%), or mothers alone (2%).

Extent of change and over what time span are rarely specified. It is gradually being recognized that the statement of a goal requires indicating *how much* change is being attempted and *by what date* it is to be achieved. Only 15 percent of the respondents indicate the extent of the intended change (e.g., "by 50%," "from 5/1000 to 2/1000"). Fewer still (9%) mention a specific time period (e.g., "in 5 years") for reaching their goals.

Because the elements of the nutrition system interact upon one another, a desired change may be achieved by intervening in the system at any of various alternative points, or simultaneously at a number of points. It is the latter strategy which these projects appear, in general, to be following.

Projects were asked to indicate which of a series of practices they were seeking to change. Their answers are shown in Table 5 on page 26, grouped according to the sub-system of which each practice is a part.

About 3/4 of the projects intervene in existing food consumption and preparation practices; about 1/2 in food supply and production (particularly through development of community gardens and fish-ponds); about 1/4 in food storage procedures; and about 1/10 in food processing and packing. Storage, processing and packing, of course, are not carried on by the populations served by the projects; the latter presumably do not view these processes as within the scope of their programs.

The projects which are most likely to attempt to change nutritional practices are those which are relatively new, are located in Africa, have a training or research focus, are most rural, receive funds from their own government, are designed for replication, and are located in impoverished areas. In many instances, these factors are associated with marked differences. For examples, while 41% of the projects designed for replication are trying to change food storage practices, only 15% of other projects do so. These findings are consistent with those described earlier in respect to the provision of preventive or curative services.

Table 5

Food Practices Which Projects Seek to Change

Practice to be Changed	Percent of Projects
<i>Food supply sub-system</i>	
Kind of foods planted and grown	50
<i>Food distribution and processing sub-system</i>	
Processing or packing in mills or factories	8
Food storage	28
<i>Food consumption sub-system</i>	
Food preparation and cooking	66
Kinds or amounts of food eaten	75
Dietary practices of certain age groups or for certain illnesses	75
<i>Other practices or customs</i>	32
<hr/>	
Total Number of Respondents—180	

Intervention in the system through nutrition education. As in other program areas, education is the kind of nutrition service most often reported (by 88% of the projects). Its principal target is mothers and pregnant women; it is usually provided through "well-baby clinics," "under-5" or "child welfare clinics," pre-natal clinics, or other maternal and child health centers. It may involve food demonstration classes, teaching mothers to use available protein sources, or discussions on the importance of breast-feeding. Like other nutrition services it is offered most frequently by projects financed largely by their own governments (98%) or in Africa (96%), least often by the fee-supported (81%) or East Asian (83%) projects.

Community health committees used by half of projects in nutrition programs. Forty-seven percent of the projects report making use of community health committees to extend their nutrition activities, but there is considerable variation according to the characteristics of the project. As with respect to other nutrition activity, projects most often reporting community committee involvement are those which are:

1. In the *most rural areas* (57%) rather than less rural (37%).
2. Focused on *training and research* (70%) rather than services (35%).
3. *To be replicated* (65%) rather than not so intended (28%).
4. *Begun since 1970* (58%) rather than before (37%).
5. *Funded by their own governments* (61%) rather than by foreign governments (50%), religious bodies (39%) or fees (28%).
6. In the *poorest areas* (59%) rather than in medium (44%) or least poor (40%).

But there is a difference in the regional pattern. The greatest use of community committees in nutrition is reported by projects in Latin America (56%), contrasted with East Asia (49%) and Africa (41%).

Feeding programs. After nutrition education, the provision of foods and food supplements is the most frequently encountered nutrition service. This activity has traditionally been the major response to malnutrition, especially in periods of drought, crop failure and other catastrophic conditions. Though increasingly overshadowed by education and demonstration programs, the supply of food to the starving and malnourished remains of major importance. It is reported by over half the projects, primarily for *children* (1/2 of the projects), secondarily for *mothers* (nearly 1/2) and *pregnant women* (about 2/5), and occasionally for *all persons in a target population* (among 1/5 of the projects). These programs may provide "supplementary food to 10,000 children under 5" or may involve the feeding of a score of severely malnourished children in a nutrition rehabilitation center. Projects may distribute "low cost AID food," milk or such high-protein food supplements as fish powder or plantain powder.

Though nutrition education is relatively new and feeding programs relatively traditional, their distribution among types of projects is quite similar. Those projects which are more likely to stress education are also, in general, more likely to have feeding programs. These projects are commonly *newer, designed for replication, and are in the poorest areas*. The percentages below exemplify the contrast between older and newer projects.

Persons Fed	Percent of Projects Established	
	1971-1975	Before 1971
Children	64	48
Lactating mothers	48	43
Pregnant women	47	33
All target population	28	9

Differences of similar magnitude are found between relatively large percentages of *Latin American* projects with feeding programs and smaller percentages in other regions. There are parallel though smaller differences between training projects (higher) and service projects (lower), as well as between those chiefly funded by their own governments (higher) and by fees (lower).

New sources of high-protein foods. Over a quarter of the projects (28%) operate community gardens, fish-ponds and similar units for the production of food — particularly sources of proteins. Typically, these efforts are modest — a project may find, with difficulty, funds to establish one demonstration garden or pond. In addition, other projects have encouraged local residents to copy the example. Fish culture, poultry raising, rabbit rearing and other agricultural improvements are promoted, and one project proudly reports: "1,000 vegetable gardens made."

Such activity is, of course, found more often in the *most rural* areas (38% of the projects vs. 18% in the less rural areas). It is also more frequent in the areas of *lowest economic level* (54% vs. 14% in the highest) and among *foreign-government-funded* projects (38% vs. 16% of the fee supported).

Promoting government intervention in the nutrition system. Few projects (16%) seek to enlist the aid of the government, whether by legislation or by administrative action, to promote the kinds of changes they desire in the nutrition system. Projects designed to be replicated are much more likely to seek government support than are other projects (22% vs. 9%).

Other nutrition services. Smaller proportions of projects mentioned various types of treatment and rehabilitative activities for victims of malnutrition. At least 8 percent operate nutritional rehabilitation centers; as many more provide nutritional surveillance, weighing and measuring of children, and referral of the seriously malnourished to treatment centers.

Few specialized nutrition workers are used. Less than one-fourth of the projects (23%) employ such personnel; a total of 69 nutrition workers were identified among the 180 projects. Nutrition services are provided by various types of local personnel who are given some "nutrition training."

Progress toward reaching nutrition goals. Almost all projects responded to the question: "What progress have you made toward your goals?" The answers, however, reveal a complete absence of consensus regarding how one determines the extent of achievement. Nearly a quarter of the projects (24%) gave no answer; said that it is "too soon" to report progress, as data are "not yet available"; or reported "good" or "little" progress. The great majority of projects (perhaps two-thirds) express goals which are poorly defined due to the following reasons:

1. They are so vague that it is difficult to determine if they have been reached (e.g., "To promote child health care").
2. They may be viewed only as *intermediate steps* toward unstated objectives or as necessary (if not sufficient) *preconditions* for accomplishing implicit charges. For instance, a goal may be expressed with no stated purpose: "To examine every individual who..." The achievement is noted in terms equally as lacking: "58% of target examined."

Few projects — less than a dozen — state both goals and progress in more concrete terms such as the following:

Goal	Progress
Reduce the prevalence of PCM from 5/1000 to 1-2/1000	Prevalence of PCM is about 2/1000
Reduce infant mortality by 20% and morbidity by 50% from 1973 to 1976	<ol style="list-style-type: none"> 1) Reduction of protein-calorie malnutrition from 34.51% in 1973 to 15.38% in Oct., 1975 2) Reduction of nutritional marasmus from 33.51% in 1973 to 13.28% in Oct., 1975

Two projects evaluate their efforts by comparing average infant weights in their project areas to those of similar districts which do not have such programs.

Examples of innovative nutrition programs. Nutrition is an area in which many projects seem to be particularly innovative. Interesting aspects of several programs have been selected to demonstrate the kinds of activity taking place in the field:

- This project urges mothers to utilize local foods that are accessible, cheap and effective in coping with malnutrition, rather than to buy prepared baby formulas for feedings. Plantain dust, nutritious and easy to prepare, is fed to undernourished babies, almost all of whom have shown great improvement in their nutritional status. (Liberia, No. 116)
- The project staff make home visits every six weeks, studying infant feeding practices and providing education concerning the diet of young children. Through these visits, the staff have been successful in getting community people to plant kitchen gardens and engage in poultry farming. (India, No. 209)
- To establish whether a child is underweight where scales are not available, this project utilizes a bangle bracelet four centimeters in diameter made of cheap material available in the area. If the bracelet slips easily over the child's elbow, it is certain that the child is underweight. This technique seems to work for children up to four years of age. (India, No. 230)
- Many children discharged from the nutrition rehabilitation center returned after six months more marasmic than at the first admission. Many mothers said they had no means of earning money and so could not buy appropriate food. A sewing school was therefore established to provide vocational education for mothers who attend the nutrition rehabilitation center. Mothers are taught to sew with needles and sewing machines as part of their education at the center. Mothers who finish the course are placed in jobs, thus supplementing the family budget and helping to break the vicious cycle of poverty, infection and malnutrition. (Ghana, No. 644)

Summary and conclusions. Interventions in the nutrition system may be viewed as tending to accomplish the following:

1. *Restore* the nutritional and health status of persons adversely affected by the system. For example, about a tenth of the projects *treat* victims of malnutrition in nutrition rehabilitation centers. This is relatively costly per person served so that few can benefit. It is not related directly to any goal of change. Its justification is that it rescues the most desperately malnourished from death. It can only return them to the situation that injured them.
2. *Alleviate* conditions created by the system before they have adverse effects. For example, *feeding* programs, operated by over half the projects, hopefully aid people before they have been severely harmed. But they must generally be continued indefinitely since they do not eliminate the causes of malnutrition.

3. *Alter the nutrition system to prevent adverse effects. Health education, in which nine-tenths of the projects are engaged, and particularly the promotion of kitchen gardens, fish-ponds, and similar measures (reported by over 1/4 of the projects) have the potential for altering the nutrition system.*²

These kinds of interventions cannot be viewed as competitive with one another. Each has its own importance, which is why even the newest projects rely on all three. A hopeful sign is that older projects seem *almost* as ready to adopt the preventive interventions as do the newer ones.

Family Planning

Although family planning is not a program area in which projects were asked to detail general objectives, specific goals and progress, about one project in five volunteered such information in connection with MCH programs or under the heading "Other." Most of these projects write of their activity as *an end in itself* (i.e., they provide information about, promote, make available, or provide family planning service). Of those specifying a further purpose, about a dozen refer to *benefits for mothers or children*: improving maternal and child health, reducing unwanted pregnancies or induced abortions, or enabling mothers to devote more attention to their children. Fewer still mention an objective such as *reducing population growth*.

Small numbers offer specific quantitative goals: "Reduce the National Population Growth Rate per annum from 3.0% in 1970 to 2.5% in 1976 and 2.1% in 1981," "Reduction of birth rate from 43 to 25.1 by 1979," "500 new acceptors per year," or "1/3 of all maternity cases in hospital to be sterilized."

Legal impediments to family planning programs are not widespread. In response to a question about "laws that restrict or regulate the activities of health delivery programs," about 1 in 10 projects replied that such laws dealing with family planning interfere "somewhat" or "very much" with their operations. Such interference is encountered somewhat more often by projects funded by foreign governments or religious bodies than by those financed by their own governments.

Most projects provide help with family planning: education, supplying contraceptives, and other services. Eight projects in ten offer some family planning service. The most common service is education and motivation toward fertility control as well as teaching of specific methods and techniques. Other services made available include: prescribing and supplying contraceptive materials (7 in 10 projects); inserting intrauterine devices (6 in 10); performing tubal ligations (4 in 10); performing vasectomies (1 in 3). Services mentioned by small numbers of projects include help with sterility or subfertility and contraceptive injections. Projects not providing family planning services sometimes noted: "No demand" or "Not culturally acceptable." Several projects not offering tubal ligation or vasectomy indicated that they make referrals to other agencies and in some cases pay for the service.³

² So, of course, have programs in family planning and those with measures to improve the standard of living of the population. But they are *outside* the nutrition system, though they impinge upon it.

³ At least three projects are engaged in research related to family planning: one on the relation of "food and fertility"; one to "study the feasibility of 'mini-laparotomy'," a method of sterilization; and one to gather "baseline data on FP acceptance, practices, and pregnancy history" in order to "compare pre- and post-project conditions."

Contraceptives are prescribed and supplied by notably high proportions of East Asian and fee-supported projects and markedly low proportions of those in Latin America and foreign-government funded. *IUD's* are fitted by above average proportions of projects in East Asia and Africa, fee-supported, planned for replication, in the most rural areas, and service-oriented. *Tubal ligations* are performed especially by the East Asian and fee-supported projects. *Vasectomies* are carried out by especially high percentages of East Asian projects, and by those designed to be replicated, supported by foreign governments or training or research oriented (and particularly low percentages of church-supported projects or those in Africa and Latin America).

Contraceptives and other family planning services are often widely available—even in the home. A broad variety of places are used to disseminate information, supply contraceptives and provide other services. Nearly a third of all projects distribute contraceptives to people in their own homes. "Contraceptive kits, loops and condoms are widely distributed," says one project. Several mention that "FP camps are held," and one describes "large vaginal tubectomy camps in village PHC's (Public Health Clinics)." Thus, the clinics and other fixed project facilities are supplemented by a variety of other channels to expand family planning service delivery.

Most projects use physicians to provide FP services, but many use nurses, midwives, and physician assistants. Less than a quarter of the projects have specialized family planning workers on their staffs—most have just one or two to a project. Two projects each report about 1,000 family planning workers, the remainder a total of about 350. In most cases, therefore, these services are delivered by other staff members.

For each of the services mentioned two paragraphs above, projects were asked: "Which staff members are permitted to do this?" and "Which staff member most often does this?" Tables 6 and 7 reveal that the process of delegating traditional tasks to health workers other than physicians has already begun.

TABLE 6

**Project Policy Regarding Who
May Perform Family Planning Services
Who May Perform**

Service	Only Physician	Registered Nurse	Trained Midwife	Physician Assistant	Other	No. Total
Prescribe/Supply Contraceptive	29%	56%	43%	25%	32%	(135)
Insert IUD	55	34	26	13	8	(116)
Perform tubal ligation	84	2/	2/	7	2/	(87)
Perform vasectomy	87	2/	2/	2/	2/	(75)

¹ All figures in this table are provisional and subject to correction

² Less than four projects

TABLE 7
**Most Frequent Sources of
 Family Planning Services**

Service	Physician	Others	%	Total No.
Prescribe/Supply Contraceptive	42	58	100	(135)
Insert IUD	61	39	100	(116)
Perform tubal ligation	87	13	100	(87)
Perform vasectomy	87	13	100	(75)

The reader must be alert to the fact that the tables do not take into consideration whether projects have certain types of workers on their staffs. For example, only 22% of the projects use physician assistants. Therefore, the finding from Table 6 that 13% of the projects permit P.A.s to insert IUD's reveals that over half of the projects which have P.A.s allow them to provide this service. Similarly, almost all of the projects with P.A.s use them to prescribe or supply contraceptives.

Assessing project achievement: most projects do not gather appropriate information. One kind of data that would help a project measure its progress is information on the *knowledge, attitudes, and practices related to fertility and fertility control* in its target population. Such data are gathered on a regular, periodic basis by 2 out of 5 projects. Less than a third use it as information to guide project management. Data on births in the area are similarly gathered by 3 out of 5 projects but are used for management purposes by less than half.

About 7 projects in 10 report that they have made comparisons either between the situation before the project began (or early in its history) and at later times, or between people who have received project services and those who have not, or both. However, only about half of the projects which report making such comparisons indicate that they use vital statistics describing births or infant deaths.

Consequently it is a rare project which is able to state in a specific quantified form both a goal ("Reduce birth rate from 43 to 25.1 by 1979") and an achievement ("Birth rate is 27 in 1975"), particularly with reference to population growth. Most of the projects referring to the achievement of family planning goals report what they view as relative success; some write more guardedly of "gradual acceptance," while a few record poor results. For example, a project whose goal is "control of population [through] ...natural method of birth control" says: "A few couples have accepted."

Most, again, report on the amount of "acceptance" or of staff input (e.g., so many persons served), which says little about the effects on the birth rate or on maternal and child health. Goals are often stated in terms of numbers of "acceptors" rather than consistent users or "adopters." In sum, there is a general absence of specific goals of achieving given objectives

within specified periods of time, an absence which is consistent with such findings in the areas of nutrition and other health services. Only rare projects discuss the measurement of effect that family planning programs have on individual or family health or discuss them as the means of allowing families to effectively regulate their fertility patterns.

Innovations in the delivery of family planning services. The kinds of family planning services mentioned above are not in themselves innovative (except the occasional utilization of injectable contraceptives). The delivery of such services by staff other than physicians is an important new development. One project reports plans to "train more staff to be FP practitioners." Parallel to this is the training of physicians in skills required in this area: "...to render sterilization services on a nationwide basis."

Also of importance is the extension of family planning to new sites. Part of this trend is the establishment of "family planning clinics integrated into antenatal, postnatal, and child welfare clinics," mentioned by a number of projects. Another part is the utilization of mobile clinics, home services, and other outreach techniques (discussed at the end of this chapter).

Another way of expanding the influence of a project's program is to enlist the support of the population itself. One project has established a "Family Planning Association to support the project," which it encourages local people to join. Another says: "We teach patients to tell their village people about the family planning needs of the nation."

Certain projects mentioned aspects of their family planning services which seem quite unique. Two particularly interesting and unusual practices are described below:

- In Bolivia, IUDs are inserted in the presence of the patient's husband with the procedure taking approximately five minutes. (No. 354)
- As a condition for a loan under a community development program, the applicant family must commit itself to no birth for one year. If they carry out their commitment, they receive a 2% rebate on their loan interest, which is placed in a special savings account to meet medical expenses. The program also provides family planning services to loan applicants. (Philippines, No. 343)⁴

Services for the Ill: Medical Treatment, Surgery, and Medical Records

Most projects provide treatment for some conditions. Most of the projects surveyed (more than 9 out of 10) offer some form of treatment of illness or of injuries. Almost all of these furnish at least *first-aid treatment*, and well over 8 out of 10 are able to examine the ill, diagnose conditions, and *prescribe the needed treatment*. About 8 out of 10 give *treatment for injuries* beyond first aid and for *communicable diseases*. *Minor surgery* is performed by 7 out of 10. A minority of the projects — some 4 to 5 out of 10 — provide *inpatient* treatment for *chronic* diseases and perform *major surgery* when it is needed.

⁴ Other aspects of this innovative program are discussed in Chapter VIII, page 62.

Treatment and surgery are more frequent among projects which are in Africa, in most-rural areas, fee-supported, older, service-oriented, not designed for replication. Treatment and surgical services (inpatient treatment for chronic illnesses, major and minor surgery) are offered by notably high proportions of these projects:

- In Africa
- Supported by fees
- Established before 1971
- Most rural
- Not a model for replication
- Service-oriented

and notably *low* proportions of these:

- In Latin America
- Supported by foreign governments
- Established in 1971 or later
- Less rural
- A model for replication
- Training or research oriented

Patient-Oriented Medical Records: a recent innovation. A recent survey of physicians in the United States, identified as being among the most innovative in the country, noted the use of patient-oriented medical records (POMR) as "the single most common innovation" encountered.⁵ POMR is, in essence, a method of organizing and orienting the patient's medical record and treatment around the complaints presented by the patient.

Nearly three-fourths of the projects say that they have never heard of patient-oriented medical records; only 6 percent currently use them. *Projects using POMR include:*

- Of East Asian projects, over 10% (but 2% of others)

- Of training and research projects, over 10% (but 4% of others)

- Of those supported by foreign governments, nearly 10% (but none of the fee-supported)

Questions about POMR were included not to compare practices in the U.S. with those in LDCs but to measure the early spread of a previously studied medical innovation. The number of the respondents expressing an interest in POMRs suggests that news of such innovations does not spread rapidly without a planned effort, as is the case of contraceptive developments.

Physical Facilities for Service Delivery

More than three-fifths of projects operate inpatient facilities. The questionnaire presented a list of types of facilities "through which your project [may] provide services" and asked how many of each of these the project operates. The list embraced *inpatient facilities* (hospitals, health centers or clinics with beds, and others) and *outpatient facilities* (without

⁵ Lewis, C. E. and Deigh, R. A. *An Annotated Inventory of Innovative Changes in Health Care in the United States, 1971-1973*. Los Angeles: University of California School of Public Health, 1973.

beds — such as clinics, health stations, health posts, pharmacies, and others). Over three-fifths of the projects have one or more *inpatient facilities*; about four-fifths have at least one *outpatient facility*. Fifteen percent have neither — that is, their services are provided from offices rather than hospitals, clinics or health stations; or through the facilities of other organizations; or through outreach mechanisms such as mobile units or home visiting (see Section G or this chapter).

Foreign-government-funded and training projects are most likely to have no facilities. Projects with *neither inpatient nor outpatient facilities* include between two-tenths and three-tenths of these types: supported by a foreign government, focused on training or research, in Latin America, in the most-rural areas, established since 1970.

In addition, substantial proportions of projects with *only outpatient facilities* are found among projects in Latin America (about one half of this region's projects), established since 1970 (about three-tenths of these projects), or designed to be replicated (about three-tenths).

In sum, 7 out of 10 Latin American projects have no inpatient facilities, nor have half of those established in the years from 1971 to 1975, nor have those funded by foreign government sources. These projects quite clearly are designed to emphasize measures of health promotion, prevention and primary health care.

Innovations with respect to facilities: flexible design, adjacent facilities for families, decentralization, integration. Innovative practices in connection with facilities fall into four groups:

- *Flexible design.* A number of projects mention new ways of using existing space and buildings to obtain greater flexibility, more room, and, in general, better utilization for health care. Most common is the use of movable bamboo and sturdier panels (Philippines, No. 208, No. 241, No. 242), (Kenya, No. 060). Floor space may then be converted to meet the need for offices, treatment and conference areas, thus improving services to the staff and providing privacy for patients.
- *Adjunct facilities for patients' families.* Adjacent to inpatient facilities, housing for patients' families has been built, frequently of modest locally-obtained materials. Families can assist in food preparation and in care of their sick member. Cost of care may be reduced, while attention by the patient's family provides more personal care within the familial environment. (Uganda, No. 033, No. 121), (India, No. 206, No. 226, No. 220), (the Philippines, No. 238), and (Bangladesh, No. 153).
- *Decentralization of facilities.* Many projects now operate or are currently building a low-cost modest facilities such as health posts, mostly staffed with minimally trained auxiliaries and located in areas of dispersed population (Venezuela, No. 437, Costa Rica, No. 422, and several countries in Africa and East Asia). Staffing patterns, supervisory practices and the range of services delivered vary considerably. While emphasis is on measures of prevention, sanitation and health promotion, some treatment is available.

- *Integration of services.* What seems to be most frequent is the utilization of a single facility to provide a widening range of services (what has been encouraged in the United States in the last two decades as "multiple service centers"). Many projects report the integrating (or incorporating) of public health services with hospital care, of nutrition with family planning activities in maternal health clinics, and so on. Integration, in another sense, is seen in numerous attempts to provide for coordinated national health planning which seeks to link local health posts to health centers to regional or provincial and national hospitals (Turkey, No. 194). (Venezuela, No. 437), (Thailand, No. 217, No. 291), and (Costa Rica, No. 422).

Project Outreach Through Mobile Units, Traveling Personnel and Home Services

The traditional health program was not thought of as a "services delivery system" but as one which established itself at a location it found convenient and waited for people to arrive. In recent decades, however, health projects have sought in numerous ways to take their programs to people or to extend their programs via new techniques.⁶ The decentralization of facilities was mentioned in the preceding section, "Physical Facilities for Service Delivery," of this chapter. Here we summarize project responses to questions concerning the operation of mobile units; the utilization of "traveling personnel," going from place to place without a mobile unit; and the provision of services to people in their homes. One or more of these outreach techniques are used by at least two-thirds of the projects.

Mobile units are operated by two-fifths of projects. A substantial minority of the projects operate one or more mobile units (specifically outfitted trucks, buses or other motor vehicles) to take services to relatively isolated areas with dispersed populations. Of the 70 projects using these units, about half operate just one each; one-fifth have at least 5 units in service. Almost all of these units operate over a regular route, providing service at regularly scheduled times and places.

Traveling staff without mobile units used by two-fifths of projects. About 40 percent of the projects have staff members who are dispatched through the project area, without mobile units, to provide service at regular times and places. Such staff members are employed by above-average proportions of projects: in East Asia (51%), designed to be replicated (49%), established after 1970 (48%), or funded by religious bodies (45%), and least often among Latin American projects (24%).

The largest proportion of these projects (about 4/5) employ various categories of paramedical personnel to provide service in this way. Next most often sent out in this fashion are health educators, sanitary inspectors and other staff members who do not provide direct health care. About a third employ nurses, and a fourth send out traveling physicians. Moreover, projects using paramedical personnel generally use three or more for this work, while those using physicians or nurses usually send out only one or two. Consequently, service of this sort is, to a very large degree, provided by paramedical staff.

⁶ Some of these will be discussed in Chapter V — health education by way of the media of mass communication; the use of other, non-health-related organizations as "transmission belts" for health information (and even for the distribution of contraceptives); the mobilization of community members as educational agents (mentioned above in connection with family planning); and the building of a network of arrangements for referrals to other agencies and from them to the project.

Over two-thirds make some services available in people's homes. Services, information or other material is provided to people in their homes by more than two-thirds of the projects, whether on a routine basis or under special circumstances. Among those offering home services are 75-85% of projects which are:

1. Designed for replication
2. In existence only since 1971 or later
3. Training or research-oriented
4. In East Asia

Chief home services include health education and nutrition programs. Asked whether each of several services is home-delivered, about 85 percent checked health information, between 50 and 60 percent reported nutrition services and supplying medicines, about 40 percent marked distribution of contraceptives, and about 20 percent wrote in home deliveries.

Most home services provided by paramedical and minimally trained staff. Further insight into the level of service at home is provided by consideration of the project personnel involved. Two-thirds of the projects use nurse auxiliaries; somewhat over half, midwives; a similar proportion, community residents with minimum training (often volunteers); and more than two-thirds employ various "other persons," most of whom have slight training. Thus a large number of persons whose services are available at low cost are utilized to bring various project services to people, thus extending the project's outreach.

Little information is available on the cost of home service. Projects were asked to indicate their "annual cost per person receiving services at home," with the additional note: "...even an estimate might be very helpful." Only half of the projects offering home services replied. The answers ranged from "0" (in four cases) and figures under \$1 (in 21) to as high as \$45 (in a single case). Another question asked: "How have you calculated that cost?" About half of those answering referred to either of two methods: dividing the total cost for the service by the number of persons served or dividing specified costs by the number served.

Formulating appropriate questions in advance was difficult, and therefore the open-ended questions used were adopted to explore this area of information. Clearly the questions did not elicit the data that were desired. But it may be that the projects themselves did not have the information; that is, that they do not, in general, attempt to allocate costs in this fashion.

Innovations in project outreach. The idea of outreach is not new. Mobile units were used widely in West Africa decades ago in response to an epidemic of trypanosomiasis. Traveling health personnel are like the religious "circuit riders" of nineteenth century America. Home service resembles the provision of medical care, again, in earlier periods in western countries when they were less developed. Yet these techniques of service delivery may be viewed as innovative because they are now being rediscovered and adapted to meet present needs in the developing countries.

- One project reports: Three staff members live in the village at the invitation of the village people. The staff runs a small dispensary in the evening and sewing classes for the young. With initial staff assistance, community residents have provided themselves with a new well and pump. (Gambia, No. 101)
- Others use their outreach activities to educate and to promote the use of project facilities, rather than to provide service at the local level. For example: Village Health Workers are used as mobilizers and catalysts, rather than as an extension of the health delivery system. A VHW serves about 20 households and trains other VHW's under supervision of the health center staff. (Indonesia, No. 303)
- In another case, patients are screened at home, and only those with relatively serious conditions are referred to the health center or clinic for more skilled care. (Taiwan, Republic of China, No. 702)

CHAPTER V
THE PROMOTION OF HEALTH
EDUCATION, ORGANIZATIONS AND THE ENVIRONMENT

Health Education

Health education interests and activities reported to be very high. "Motivating people toward acceptance and adoption of health related knowledge, attitudes, and practices" is the definition of public health education presented to respondents in this Study and therefore serves as the context for the interpretation of responses.

A very high percentage of projects reported that they were actively working in public health education (79%), and an additional number (16%) reported interest in, but not actively working in, public health education. As a result of these responses, public health education emerges as one of the areas of highest interest (95%) in the entire Study.

The reported high levels of activity make it difficult to relate this extent of interest with other project characteristics. To help explain these findings, it was hypothesized that there would be pronounced concerns about low literacy and about health related superstitions, but the data analysis did *not* suggest any such relationships. Nor were concerns with beliefs and attitudes reflected by the extent to which projects collect social science information. Fewer than four out of ten conduct such studies. It is more likely that high interest in health education reflects recent shifts from hospital-based services to preventive community out-reach activities.

Educational planning remains in formative stage. Only half of the projects report having plans describing their educational goals, methodologies and resources, and even fewer (44%) can state specific projected changes. Fewer than three out of ten projects have specific health education budgets, and these appear to be an artifact of funding requirements. Table 8, page 40, reveals that educational plans are more common for projects in Asia, recently established with foreign funding, and designed for eventual replication.

Keeping in mind the fact that fewer than one-third of the projects report having professional health educators on the staff, it is likely that the project staffs do not yet have the levels of expertise needed for more sophisticated health education planning. The relatively small proportions of projects which measure the knowledge, attitudes and practices of the target populations tend to reinforce this explanation. Further study is needed to determine the *quality* of health education planning. Recent developments in the evaluation of the cost effectiveness of health education efforts should be applied to low-cost health care delivery systems.

Person-to-person health education continues to dominate. The popularity of various educational approaches is shown on page 41.

Table 8

Health Education Planning, By Specified Project Characteristics

Project Characteristic	Percent of Projects with Plans Showing Educational Goals, Methodology & Resources			Totals	
	Yes	No	Not Reported	%	No.
Region¹					
Latin America	53	47		100%	(45)
Africa	41	57	2	100%	(54)
East Asia and Pacific	60	40		100%	(75)
Period in Which Established²					
Before 1966	34	64	2	100%	(56)
1966-1970	49	51		100%	(37)
After 1970	64	36		100%	(83)
Principal Source of Funds²					
Own country's government	51	49		100%	(51)
Foreign gov't Int'l agency	66	34		100%	(32)
Foreign religious body	52	48		100%	(31)
Fees or profits from sales	34	63	3	100%	(32)
Other sources	53	47		100%	(30)
Replication Intended?²					
Yes	64	36		100%	(86)
No	38	60	1	100%	(91)
Primary Focus²					
Service delivery	42	57	1	100%	(125)
Training	71	29		100%	(34)
Research	70	30		100%	(10)
Target Population Size²					
Less than 25,000	42	58		100%	(45)
25,000 - 99,999	57	43		100%	(51)
100,000 - 999,999	57	41	2	100%	(49)
1,000,000 or more	52	48		100%	(23)
%Rural²					
Less than 50%	53	47		100%	(30)
50-85%	53	47		100%	(49)
More than 85%	51	48	1	100%	(89)

¹ Excludes "Near East and North East Asia" (6 cases)

² Excludes cases with information not reported, as follows: Period in which established (4), principal source of funds (4), replication intended? (3), primary focus (11), target population size (12), %rural (12).

Percentage of Projects Using Various Educational Methods

Method of Education	Percent of Projects Using
Person-to-Person	92
Schools	73
Community Organization	66
Mass Media	59
Total Projects (180)	

Additional analysis of this data revealed the interesting finding that, while school health activities remain popular, they are least emphasized among the more recently established projects. This finding is in sharp contrast to the more common findings of greater variety of non-clinical services among younger projects. It would seem that school health is a traditional activity which has not strongly impressed current project planners. The finding also tends to support the hypothesis that changes in orientation rather than project maturation explain differences found between younger and older projects. For example, the finding that almost twice as many of the younger projects use community organization techniques as do older projects can be more confidently explained in terms of current orientation.

Mass media is most often used in Latin America, in large projects, in those designed for replication, and those receiving government funds (both foreign and domestic). While mass media utilization has increased since 1965, this emphasis appears to be somewhat weaker now than it was a few years ago. This finding is consistent with the increasing concern for community organization approaches rather than more impersonal techniques. There is a possible danger that unimpressive experiences with the use of printed media are also inhibiting the more effective utilization of local radio stations for program support.

Organizational Relationships

With the growing emphasis on community organization, new linkages are being formed on the local, national and international levels, and the nature of traditional relationships appears to be changing. There is an increasing respect for the potential contributions of the community, and examples exist of the willingness to work with other developmental sectors such as agriculture. Indications of these changes include the greater likelihood of the younger projects having established formal referral arrangements from other organizations to the project. A large proportion of younger projects work through community health committees and delegate responsibility to local residents.

Use of community organizations characterizes projects. Two out of three projects rely on existing or newly created community organizations for project support, and many projects believe that such support constitutes the chief reason for their success. Conversely, a small number of projects cite the lack of such support as the chief reason for the failure of project efforts. Community organizations include local committees, the school, religious institutions, local levels of government, family units, drug stores and other businesses, indigenous practitioners and associations such as scouts. Numerous statements were made concerning the importance of local involvements, guidance, voluntarism, facility utilization and upkeep, the feeling of control and ownership, as well as ideological dedication. The overwhelming majority of respondents feel that community involvement results in better services, greater patient satisfaction and more rapid progress in improving health.

Consumers of health services continue to have only limited responsibilities. The extent of consumer involvement in three phases of project activity was:

	Great Deal	Some	None
Consumer involvement in planning	8%	38%	45%
Consumer involvement in implementation	15%	44%	32%
Consumer involvement in evaluation	13%	36%	38%

Projects established within the past five years are more likely to have consumer involvement at all three stages of management than projects established earlier although this development is found primarily in respect to the implementation stage. The discovery that consumers are being involved in planning and evaluation to any degree is indeed welcome and is consistent with the earlier finding of such involvement with respect to training activities. Table 9 reveals that, while the degree of community control tends to be limited to consultation or accepting proposals, there are significant numbers of projects which report delegating broader decision-making power to the community. This policy is particularly true in determining where health facilities are to be located.

TABLE 9

DEGREE OF CONTROL GIVEN TO COMMUNITY REPRESENTATIVES

Percentages based upon 96 projects
working with community committees or groups

Type of Decisions	Consulted on choices and permitted to express opinions	Propose policies, but professionals make decisions	Share equally in decisions with professionals	Policy and administrative control; they alone make decisions
Time of service	36	24	27	6
Location of facilities	34	18	27	16
Selection of services to be offered	39	30	27	1
Purchase and sale of drugs	32	28	17	5
Allocation of project funds	40	18	17	6

Contributions of volunteers held to be very important, as are economic and social links. Fifty-eight percent of the projects (105 projects) use volunteers, with 18 percent using them to provide medical diagnosis and treatment, and substantial numbers of projects using volunteers as community educators, medical assistants, clerks, referrers of patients, and as a means of mobilizing local support. For example, such support results in the donating of almost half of the operating funds for an Indian health project. (No. 251) Volunteers provide emergency transportation for villagers in Sierra Leone (No. 084) to the hospital.

Many reports were received describing innovative ways of linking health goals and activities to broader economic and social sector activities. In Indonesia, health support comes in the form of a "project vessel" which transports economic goods and health workers from one island community to another. In Ghana, a sewing school was established as a means of achieving the nutrition goals of the project. (No. 644) In one barrio in the Philippines, a community-owned drugstore now makes drugs available to the people at a low cost.

National-level organizations support most health projects. Three out of four projects (78%) have formal relationships with their domestic governments. Ministries of health play the strongest part, but ministries of agriculture, education, finance, community development, public works and justice are all cited. In the case of the ministry of justice, for example, projects expressed a need for guidelines and regulations so as to avoid the tenuous situation of having local authorities making legal interpretations. Laws or their absence were of particular concern to research projects, to projects in Latin America, and those in suburban rather than highly rural areas.

Domestic universities are another organizational structure having linkages with projects. Thirty-nine percent of the projects indicate such relationships, most frequently with the Medical School. This is the case in Ghana (No. 073), Somalia (No. 099), and Korea, (No. 308) as well as other countries, where students use the project for field training, where staff are utilized as lecturers, or where professors provide technical assistance (e.g., development of a record system). Few projects receive direct financial support from local universities. Teaching hospitals are often linked into the referral system of projects.

Eight out of ten projects have at least one formal relationship with a non-governmental organization. Religious organizations are most commonly cited (47%), but voluntary health agencies such as the Red Cross and Planned Parenthood were commonly mentioned (45%), as were professional societies (30%), unions and cooperatives (14%), and businesses (12%). Projects supported with foreign funds are quite likely to also have formal local relationships.

Foreign-supported projects often bypass national and regional levels. About half of the projects studied receive some support from foreign religious institutions and one-fifth do so from foreign governments. International voluntary health agencies are related to a third of the projects, while relatively few have relationships to foreign professional societies, businesses or unions. A relatively large number of projects (one-third) receive some support from foundations, most of which are foreign. Relationships between these voluntary health organizations and their counterparts in other countries are, in most cases, minimal. As a result, many foreign voluntary organizations work directly at the community level, bypassing national and regional resources in the country. This situation inevitably creates difficulties in achieving project replication and self-reliance through local resources. Further information is needed about the positive and negative value of these relationships and the expected outcomes at the time these links were formed.

Project relationships categorized. Seven common types of relations were studied.

1. Management information: securing statistical data, assessments of political, economic or social support, assistance in evaluation, reports of related activities (20% report such support).
2. Community participation: described earlier as a major activity;
3. Financial and technical assistance: most common type of support for projects related to official national and international agencies.
4. In-kind assistance: involves sharing or loaning of facilities, staff and equipment, as well as the coordination of goals;
5. Manpower: expansion of resources through volunteers, training community health workers, securing loan of governmental staff and advisors.
6. Referral system: two out of three projects make regular referrals to government hospitals and specialty institutions, such as family planning clinics. One out of four projects have referral agreements with other non-governmental organizations.
7. Model for replication: Almost half of the projects (48%) were designed as models, but details about how replications are to be brought about are lacking (see Chapter VIII for further discussion).

Environmental Health

Interest in environmental health high but extent of services remains low. Upon being asked whether their projects were interested in health problems related to the environment, five out of six projects said that they were. Such levels of interest certainly seem justified in light of the fact that the majority of respondents believe that communicable or filth-borne diseases are the leading causes of illness and death, as discussed in Chapter II. Approximately half of the respondents believe that inadequate drinking water, household water and waste disposal systems interfere with the achievement of project goals. However, upon being asked about the extent to which projects are actively doing something to correct these conditions, positive responses were surprisingly few.

It was noted earlier from Table I in Chapter II that only 39% of the projects under study reported that they were actively pursuing environmental sanitation objectives. Those responses were somewhat affected by the requirement of having specific objectives. Upon being asked simply whether the projects were providing specified environmental services, 47 percent of the projects reported that they were building family privies, 38 percent treat water supplies, and 19 percent are involved in the building of community waste disposal systems. No indication of any trend toward increased concern with the environment was identified. On the contrary, there are proportionately fewer programs in the more recently developed projects than in those established prior to 1965. It is somewhat encouraging to note that most of those projects which do have environmental objectives can state specific goals and, in three out of four cases, report examples of progress toward their goals. As might be expected, rural projects show greater concern with drinking water while more urbanized projects are concerned about waste disposal.

In brief, with the exception of educational services, *fewer than half of the projects are actively involved in making the environment safer*. Of those which are, most are dependent upon other than project resources such as special governmental contributions or resources made available by the communities being served. Technical activities such as securing an ample supply of clean water and constructing inexpensive privies which are suitable to local conditions can be expected to require local experimentation, special funding, training in maintenance and repair of mechanical systems, supplies, and probably advisory support. Projects with funding from international foundations are likely to have access to such support and to report greater activity. It will be recalled from Chapter III that fewer than one out of five projects have a sanitarian or sanitation inspector on staff.

Few innovative activities reported. Adding strength to the conclusion that environmental health has an unexpectedly low priority among the projects under study is the lack of examples of innovations cited by respondents. Only a few isolated responses such as those from Sierra Leone (No. 084) and S. Korea discuss sanitation innovations specifically. An appraisal of reasons for project success and an analysis of responses to open-ended questions fail to reveal any additional projects of note. An important exception is a comprehensive health project in Thailand (No. 252) which is founded upon the groundwork laid by a very active, earlier village sanitation project. The earlier project developed a system for organizing community action, inexpensive water-seal privy and well construction techniques, and a supportive administrative system. There were a few citations involving home safety and cleanliness from Ethiopia and Iran (No. 167), but no evidence suggesting that concern about the impact of an unsafe environment has generated major project responses.

CHAPTER VI

PROJECT PLANNING AND MANAGEMENT

Planning and management, or administration, are a combination of activities directed toward some common purpose and conducted by people with the assistance of other resources such as machines, money, and information. The approach here is a pragmatic one of exploring those ideas which are feasible, acceptable, and efficient from the local point of view. Administration remains a crucial ingredient in project effectiveness and efficiency.

"Administration" means many things to many people. What emerges is an obvious need for the adoption of uniform framework and set of terminology for describing, measuring and evaluating administrative activities.

Wide variety of innovations described. Upon being asked to describe administrative activities which were considered by the respondents to be innovative, ten projects described activities related to *data collection, storage and analysis*, including the design of reporting systems, the training of record keepers and the conducting of health surveys. Five projects described activities related to the drawing up of *priorities* in preparation for actual planning. The design of models, concern about replication and assessment were mentioned. Other projects felt that their *plans* and how they were developed were innovative, examples being the obtaining of the services of a health planner; establishing community or block-level organizations for participation in planning; and designing a program budgeting system. Some projects pointed to *decisions* which had been made about obtaining funds, working out cooperative arrangements and even the training of personnel in effective decision-making. The largest group of respondents (40 projects) described *operational activities* such as personnel practices, training of staff and volunteers, strengthening supervision, establishing new facilities such as "mini health centers," the planning of regionalized services, health insurance schemes, and the control of supplies and equipment, including drugs.

Decisions are made primarily by project officials at headquarters. Some 80 percent of the projects report that decisions about project plans, activities and assessments are made with in-puts from funders, administrators and staff members. There continues to be a reluctance to include consumers in the making of administrative decisions, as discussed in the previous chapter. Similarly, upon being asked where decisions are made about such things as budgeting, hiring and extending services, only one out of three projects report allowing local units to make such decisions, a process which could be expected to pave the way for increased local control by consumers.

Incomplete planning commonplace. While the use of written plans, accounts, procedures and budgets is not necessarily evidence of efficient and effective programs, their existence does shed some light on the status of administrative practices. Six out of ten projects have detailed plans for service development and slightly more (66%) have written procedures. An even larger number (74%) report having written budgets. However, the absence of a written budget by one-fourth of the projects is of concern. Furthermore, even when budgets do exist, they are often incomplete or of limited use. For example, while half of the projects have general budgets, only one in three have education budgets. The projects which were *least* likely to have written plans, procedures and budgets were established prior to 1966, were not designed for replication and have very limited training and research activities.

Budgets often of limited value. There are many ways of preparing periodic budgets, including traditional line-item budgets, those organized by services or similar activities, combinations of the above or separate budgets organized by other components. Only 2 percent of the projects report being able to calculate *all* project expenditures for each service delivered although almost half of the projects attempted to identify the major costs of services, and three out of ten projects attempted to determine the costs of a service per person (55 projects). Thus, the great majority of projects are unable to unit cost their activities so as to serve as a basis for evaluation and decision-making about replication. Interesting is the finding that even among projects designed for replication, only one out of three can provide unit cost data. For the interest of the reader, Table 10 provides a breakdown of accounting approaches for the 55 projects with unit cost data.

Table 10
Cost Accounting Approaches Used by Projects
Having Record of Cost Per Person Served

	Number of Projects
1. Among 19 projects not having records of cost per <i>service</i> , cost per person is computed by:	
a. Total costs divided by total people served	12
b. Estimating costs for classes of patients	1
c. Estimating personnel time for types of services; using average materials and other costs	6
2. Among 36 projects having records of cost per <i>service</i> , cost per person served is computed by:	
a. Total costs divided by total people served	13
b. Estimating costs	2
c. Actual materials and estimated time	1
d. Actual materials and average time	8
e. Cost per person times services per person	1
f. Other	<u>11</u>
Total	55

Projects receive only modest financial support. Over half of the projects (54%) report that the lack of operating funds interferes with the achievement of project goals while a smaller number (31%) report interference due to a lack of travel funds. While most of the projects are searching for ways of solving this problem, one-fourth of the projects report taking no action at all. In response to more open-ended questions, eight projects state that the level of financial resources is the chief reason for their project's success or failure, and uncertainty about funding levels is a major complaint. Domestic governments, foreign religious groups, and international agencies are most frequently cited as major project funders. Over half of the service delivery projects in the survey receive some funds from foreign religious groups, whereas only one of the ten research projects receives such support. Few of the projects

principally sponsored by religious groups receive foreign government funds. Universities and foundations are major funders of only a few projects. The collection of fees for services and profits from sales of drugs and supplies are most used by projects serving the smaller-sized target populations.

Project funding arrangements are split roughly half and half between those that have indefinite long-term funding commitments and those with fixed periods of funding as in an experimental or demonstration project. Half of the projects having short-term funding commitments optimistically report that they expect government agency or private group support when the present funds expire. About 10 percent of these short-term projects expect to be discontinued.

Funds generated locally essential to projects. Locally-generated funds collected from users are both barriers to access for services and ways to encourage expressions of support from consumers. They also may bring in an amount of discretionary funds which may be directed more freely by the project staff to solve priority problems. One-third of these projects are dependent on fees and profits as their major source of funds (more than 75% of budget). While charging policies differ, the largest group (37%) provides some services free and charges for others. Smaller numbers of projects use sliding scales, fixed amounts, or one-time registration charges. Services are completely free in almost one-fourth of the projects. The need for operating funds is not the only reason given for charging for services. In some cases, respondents felt that such charges constituted a way of insuring consumer involvement.

Informal communications with staff commonplace. The degree of formality in personnel controls gives one a perspective on the supervisory style of a project. The survey asked whether a project had formal standards and procedures for supervision. Slightly over half of the projects reported having both standards and procedures. Projects not having such controls tended to serve small target populations, to be training focused, to have foreign religious or fee-for-service support, and to have begun before 1966.

Communication among project workers tends to be verbal, in the form of oral messages, meetings, or informal notes. Relatively few projects rely on formal letters, and only 13 projects rely mainly on newsletters as a means of keeping employees informed. An additional 41 projects do use newsletters occasionally. Similarly, informal observations constitute the major technique for supervision while reviewing oral reports, reading records, reviewing written reports and other techniques are much less frequently reported.

Incentive payments used but infrequently. Incentive payments to staff members may be used for a variety of purposes. Only 28 percent of the projects use pay incentives. The reasons most frequently given for offering such payments are:

For "hard work"	(9 projects)
For assuming supervisory responsibility	(6 projects)
For agreeing to live or work in rural areas	(4 projects)
For spending nights away from an assigned post	(3 projects)
For overtime work	(3 projects)

In sum, extra payments are made for work "above and beyond the call of duty," for the most part. Single respondents mention using "incentive pay" to attract qualified people in short supply, or even as a reward for regular attendance at work.

Though respondents were not asked whether their arrangements yielded the intended effects, it seems probable that some, at least, find the results satisfactory — or they would, presumably, discontinue the payments.

These personnel management activities are examples of some of the types of actions being taken by projects. Other practices are mentioned elsewhere in this report. It is clear that each of these personnel interventions can serve a useful purpose if properly arranged for the project conditions, size, and structure. By further experimentation, undoubtedly many new, low cost administrative approaches will be found to be effective in serving the needs of projects like those surveyed here.

CHAPTER VII

EVALUATION

Health planners and officials of funding agencies have increasingly recognized evaluation as a critical concern in developing optimum means of providing health services to large numbers of people. Although the results of this survey revealed an awareness by project leaders of the importance of evaluation, they also reflected a wide range of conceptions and misconceptions of the purpose and necessary elements of evaluation. Especially confused was knowledge of formal evaluation, such as that often encouraged by funding agencies.

A series of questions was asked as to whether and how often certain kinds of epidemiological data were gathered; whether or not certain comparative techniques of evaluation were used; what use was made of evaluative data and what, if any, were the reasons for its non-use. Other information on the status of evaluation in these projects was derived from questions asking the project respondent to identify project goals and estimate progress toward them, on the means of evaluating training programs, and on availability of data allowing cost estimates of services by patient or service.

Many projects do not collect basic data. Results indicated that fewer than 60 percent of the projects surveyed collect basic epidemiological information, i.e. prevalence of morbidity (51%), mortality (53%), natality (56%) information. Although 83 percent of the projects record number of patient visits, only 52 percent keep an "unduplicated" count of persons served. The lack of such data would make impact evaluation difficult. Furthermore, fewer than half of the projects collect data on utilization of staff, facilities, or major equipment, restricting the feasibility of intermediate evaluation. Similarly, fewer than half of the projects engaged in training have an evaluation system for their training programs. Finally, fewer than half of the projects gather cost data in a manner allowing a project to determine cost by service and 31 percent to determine cost per person served. These kinds of data are useful, if not essential, in determining the feasibility of replication and in planning project improvements.¹

Claims of collecting and utilizing data may overstate situation. A similar reservation has to be made regarding the "encouraging" response that 69 percent of the projects make comparisons between the early of pre-project situation and the later project situation with respect to project goals and objectives. When asked what kinds of statistical data are used for such comparisons — morbidity, infant mortality, general mortality, natality, and health related KAP — only in the case of general mortality was it found that at least half of the projects utilize such data. A question thus exists as to the basis for comparisons projects are making. Only 31 percent of the projects indicate they made comparisons between receivers and non-receivers of services.

In attempting to characterize projects which do use evaluative techniques, utilization rates of several evaluative techniques were cross-tabulated with the standard variables appearing throughout this report. These techniques include: analysis of staff task assignments, measurement of staff workload, utilization rates of facilities, comparison of the pre-project

¹ See Appendix B for the identification of projects reporting various evaluative activities.

or early project situation and that in later times, and comparison of receivers and non-receivers of services. The researchers found that considerable caution was needed in interpreting responses to questions concerning evaluative activities. For example, upon being asked whether the projects measure the attitudes of the population in regard to satisfaction with facilities and staff, three out of four said that they did. However, when later asked for specific details about measures of satisfaction, only one-fifth of the projects were able to respond. Those projects tended to be designed for replication and were more recently established.

An analysis of a number of variables which might help to explain whether projects collect, analyze, and utilize data in different ways did not result in clear interpretations. For example, while projects which were designed for replication tended to be more advanced in this respect, the results were not always consistent. To some extent, data utilization requires a period of project maturation and low levels of responses are not necessarily discouraging. In fact, it was often observed that middle aged projects were considerably more active than the older projects. For example, while only 11 per cent of the oldest projects measure population satisfaction, over a third of the 1966-70 group did so. And, while it might be ideal for the newer projects to build up evaluative procedures from the beginning and have them develop with the project, in the course of launching a new project, evaluation is often given a low priority.

A majority of the projects gathering evaluation information report they are not able to use the data to increase progress toward goals or to improve project management, planning, and budgeting. Reasons for not utilizing such data tend to be internal ones, related to the project — "disorganization," "too early to tell yet," and "lack of statistical expertise" — rather than lack of funds or political reasons.

Some projects report such data have been helpful in justifying additional staff, in adjusting staff hours, and in reducing or adding patient services according to community needs. Seventeen percent of the respondents report use of the evaluation data in "information systems." There is thus some recognition of the relevance of formal evaluation for limited purposes. From this Study, however, it is possible to say that an understanding of its importance to low cost health delivery and of its necessary components are missing. In interpreting the results of the Study, and in view of the lack of formal evaluation, an attempt was made to ascertain if projects were doing a more informal kind of evaluation, characterized by Edward A. Suchman² as an "on-going, continuous activity of assessment and improvement." Goals and objectives would be regarded as prerequisites to this kind of judgmental activity. In this regard, project spokesmen were asked if they were "working toward definite objectives in 16 areas of interest common to low cost health delivery systems." Projects indicating active involvement in a particular area were then asked to state their objectives, specific goals, and steps toward them. Although 91 percent of the actively involved projects indicated objectives, only 69 percent were able to state specific goals for each activity.

In brief, while large numbers of projects report collecting a variety of data, relatively few are able to use this data to improve their operations. Informal data collection systems, like informal goals and objectives, are likely to be more useful in keeping funding officials informed than in determining the relative effectiveness or efficiency of project activities.

² Suchman, E. A., "Action for What? A Critique of Evaluative Research," in Weiss, C. H. (Ed.), *Evaluating Action Programs*. Allyn & Bacon, Boston, 1972, p. 57.

Formal health evaluations are rare. Four of the projects responding to the survey do have formal evaluation systems. These are the Lampang Health Development Project in Thailand (No. 252), also known as DEIDS/Thailand, the Danfa Comprehensive Rural Health and Family Planning Project in Ghana (No. 073), the Strengthening of Health Services Project in Guatemala (No. 425), and Companiganj in Bangladesh (No. 195). In these cases, evaluation plans as well as project design and implementation are the subject of testing.

Suchman's classification of demonstration projects (pilot, model or prototype), according to the degree of emphasis on research or operations³ provides a useful framework for studying evaluation objectives in these projects. The first, the *pilot project* is one of trial and error in which "new approaches...can be tried out on a flexible and easily revisable basis." Such a program needs quick and easy feedback, emphasizing feedback of results. Rigorous design is not essential. The second, the *model program* represents the "end result of a series of productive pilot projects" and puts the activities into effect under the most desirable circumstances. Rigorous control and examination of program components and conditions are needed. Finally, the *prototype project* provides for application of project results in a practical setting. Rigorous controls are not possible, but an attempt should be made to specify which aspects of the project are relatively more successful than others and among which population subgroups.

Each of the four projects studied seems to fall primarily under this third category since, although control groups are used, a primary emphasis is placed on providing services to a target population. It is unlikely that services would be denied to persons not in that target population either in terms of population characteristics or residence, or that extraneous influences affecting the population have been thoroughly excluded. Moreover, even in these cases where the evaluation is regarded as relevant to project success and to replication, program implementation had to precede the complex process of collecting baseline data. Nevertheless, in each case, the project staff, funding and assisting agencies have tried to develop designs to test evaluation hypotheses or to assess the effectiveness of project approaches against some scale. These, in addition to the Narangwal project and perhaps a few others, are proposed as the subject of further analysis which will serve as the basis for formulation of guidelines for the evaluation of low cost health delivery. In each of the three projects, initial more rigorous evaluation designs have had to be adapted to changing project conditions, pressures for speedier implementation, and shifting target groups due to urbanization, modernization and migration. These are fundamental factors affecting most health delivery projects in LDC's.

Confusion exists about evaluative needs. The evaluation designs being implemented in these projects are somewhat controversial, reflecting feelings of some host country officials that the emphasis on evaluation is primarily a result of the interest of outside funding agencies and is excessive if not irrelevant to service delivery. Convincing these persons, as well as project staff of the other low cost health delivery systems, of the relevance of evaluation to their task requires development of simple impact indicators (benchmarks) of health status and guidelines of how data might be collected and monitored at reasonable cost. Such indicators tend, however, to focus attention on the end product alone and usually cannot be evaluated in a short enough period to be helpful to host country project managers. On the other hand, positive evaluation of intermediate aspects of a project such as training, administration or even services do not guarantee an effective end product.

³ Suchman, E. A., *Ibid.*, p. 59.

What is needed, therefore, is development of impact indicators that are tied back in some hypothesized if not proved relationship to other aspects of the project such as services, training, or administration. Such "system" evaluation lessens the tendency to collect excessive amounts of data and can be useful in clarifying the different evaluation objectives of funding agents and project management staff.

Given the current state of the art in health evaluation, in particular, and in program evaluation, in general, this task will be difficult both substantively and "politically" (e.g., separating the demands of funding agent and project). Nevertheless, specification of relationships and their testing could be a first step in insuring that project administrators can use evaluation data in management.

There are many reasons to believe that field health workers want and need help in improving their evaluative activities. The fact that they commonly collect information but seem unable to make good use of it suggests this. Perhaps more revealing were the very frequent requests for extra copies of the questionnaire and the spontaneous comments about how valuable it was to go through the exercise of completing it. Given so lengthy a research instrument, a remarkably large number of recipients not only completed it but did so with as much detail toward the end of the questionnaire as they did for the opening questions.

CHAPTER VIII

INNOVATIONS IN THE DELIVERY OF LOW-COST HEALTH SERVICES

Introduction

Study concerned with the kinds of innovations being tried. Throughout the questionnaire, respondents are asked for specific information about activities or policies which they believe to be new in terms of the reporter's education, past experiences or knowledge of how things are usually done. This Study accepts the inherent subjective definition of innovations and makes no attempt to judge whether responses fail to be innovative by some standard. The intent of this Report is pragmatic, and it can be anticipated that readers will want to know not only what types of innovations are being tried and by whom but also whether they appear to be successful and worthy of replication. Judgments such as these are not easily made based on the collection of data covering so broad a field and limited to data from mailed questionnaires. The success of an innovation and its potential for replication is influenced by so many technical, cultural, administrative and other factors that it would be indeed dangerous to urge replication or rejection in this way.

Interested readers are urged to contact colleagues in the field through the use of identification lists provided in Appendices A and B, or through the American Public Health Association.

Foreign funding conducive to innovative attempts. Two-thirds of the projects in the survey report that they have made changes or introduced new or unusual ideas concerning philosophy, objectives, goals, or problems since their project started. Projects that are primarily funded by foreign governments or organizations report such changes more often (72%) than projects funded by other sources. This is especially true with respect to innovations in training content and techniques, the introduction of family planning activities, the use of attitudinal studies, health education efforts including mass communications, and the reliance on community volunteers. However, foreign funding is not always associated with innovative practices. This is consistent with the finding that projects funded by foreign organizations have the highest rates of involvement in actively evaluating the potential replication of their innovations of any funding group. Finally, in response to a question concerning the consequences of the adoption of an innovation on the social relations and behavior of the community, projects funded by foreign governments and organizations constitute the only group in which the majority of the projects (55%) foresee the definite possibility of social disruption if their innovations were replicated.

Projects believe their innovations are replicable. Responses to three other questions concerning the respondent's perception of difficulties of adopting their project's innovative elements are revealing:

Seventy-six percent of the projects reported that their innovative elements could be tried out and *easily* abandoned if they proved unsuccessful; thirteen percent reported that they could be abandoned only with difficulty.

Sixty-six percent of the projects reported that their innovative elements were simple and easily understood; twenty-three percent reported that they were complex and hard to grasp.

Sixty-seven percent of the projects reported that the results or consequences of their innovative elements can be observed fairly quickly and easily; twenty-one percent felt that the results of their innovations could be observed only after a long time, or with difficulty.

It was found that the small number of projects projecting difficulties with replicating their innovative elements tend to be funded by religious organizations who tend to see their daily operations as inseparably linked to the local community and, thus, not easily adopted elsewhere. Such a pessimistic assessment does not appear to be justified if one looks at the actual operation of the projects. It would appear that many of these innovations could be replicated elsewhere.

Projects with a target population between 25,000 and 99,000 tend to be more innovative and more receptive to adopting innovations. Seventy-eight percent of the projects in this group report that they have made changes or introduced new or unusual ideas concerning philosophy, objectives, goals, or problems since their project started (compared with the average of 66% of all projects reporting such a shift). This group consistently ranks low in perceiving problems of replicating their innovations elsewhere. It appears that a "medium" target population of 25,000 to 99,000 people is conducive for experimentation. Smaller projects (1,000 to 24,999) are restricted in terms of staff size and scope. Larger projects (100,000 or more) must expend most of their energy in servicing their population. Similarly, the flexibility associated with the medium target population group should allow them to adopt innovations more easily than projects of other target sizes. It can also be noted that projects with a target population between 25,000 and 99,000 tend to rank higher on a number of items concerning quality and scope of services throughout this Study.

Many categories of innovations disclosed. Far more descriptions of innovations were reported than could be included in a summary report or perhaps even in a full report, particularly if these reports are to be made meaningful through the inclusion of information describing the project settings. A selection of innovations which have not yet been presented are included in Part B of this Chapter. The highlights of these findings follow:

More innovative behavior is reported in respect to health manpower training and utilization than for any other area of activity. Projects tend to seek to compensate for shortages of physicians and paramedical workers; the latter, however, is viewed as more serious than the former. There are numerous efforts to provide improved in-service training and career development, and to tap the potential of community residents for providing a variety of educational, preventive and curative health services. A third of the projects train "unusual" students, while many try to give socio-cultural insights and communication skills and employ dynamic teaching methods.

There is a shift of emphasis from curative toward preventive health services, with resulting attempts to secure cooperation from institutions other than hospitals. Great varieties of institutions on the international, national and local levels are increasingly involved in project activities, and the programs are growing in complexity.

Local communities are being given increasing responsibility for programmatic decisions rather than simply informing them or seeking consent. Communities are being drawn in not only in terms of operational decisions but also for planning and evaluation of services, including such issues as staff acceptability. Local committees, schools, religious

institutions, businesses, indigenous health workers, voluntary organizations are all of growing importance. There are reasons to believe that this process will result in increased appropriateness of services, their acceptance and long-term social and financial support. This development is particularly noteworthy in respect to family planning and nutritional activities.

There appears to be a shift from nutritional efforts which focus on education and supplements toward changes in production for half of the projects. Activities include seed improvement, fertilizing, fish ponds and agricultural techniques.

Non-physicians are being given major roles in family planning recruitment, education, examinations, prescribing and treatment. Tasks once limited to physicians are being performed by new types of workers such as physician assistants and trained community volunteers, as well as by newly trained or re-trained traditional health staff and indigenous workers such as midwives.

Innovative behavior in respect to evaluation, environmental sanitation, and a variety of administrative practices is *not in evidence*.

Moderately strong relationship between innovativeness and being a model for replication. Upon being asked whether their projects were designed as models to be replicated, almost half (48%) replied that they were. Responses to specific questions about innovative behavior were analyzed in terms of answers to the question about being a model and are shown in Table 11, on page 57.

In most respects, being designed as a model is associated with innovative behavior for the items listed. It would be an error to assume that this finding shows a cause and effect relationship in that the analysis permits no such assumption. Other factors such as sources of funding or orientations of health planners could be responsible for these findings. Furthermore, the claim of being designed as a model for replication is seriously weakened by the finding that only a few projects are conducting rigorous evaluations of their efforts. Nevertheless, one would expect that planning a project as a model for replication would impose an orientation conducive to innovative behavior. A logical sequence would be that planning for replication would lead to the identification of specific goals and objectives; measures of progress would be determined; data would be collected which would reveal rates of progress toward those objectives, and attempts would be made to overcome weaknesses through innovations. The possibility exists that the relationship observed would be stronger if projects which were designed for replication in their entirety were separated from those which have more limited elements intended for replication. A check of consistency, based on asking for additional information about being a model later in the questionnaire, revealed that about half of the projects which feel that they were designed as models believe that that designation applies to only certain aspects of their activities. Additional data, including innovativeness scores in respect to manpower training, are available and will receive more intensive analysis in the future.

Additional Innovations

Throughout the preceding chapters, many project innovations have been cited under the appropriate categories. (See Index of Innovations for locations of innovative examples within the Report.) This section is devoted to summaries of other innovations deemed

Table 11
Percentage of Projects Performing Selected
Activities Relating to Innovations (N=180)

	Project Intended For Replication	Project Not Intended For Replication
(a) Made changes or introduced new or unusual ideas since the project started	74	59
(b) Adopted any innovations in the past five years	51	45
(c) Developed inexpensive substitutes for sophisticated and expensive equipment	40	34
(d) Adopted new ideas in the design and use of facilities	41	37
(e) Made arrangements to promote replication of their innovations	65	24
(f) Involvement with other agency interested in replicating project's innovations	73	47
(g) Calculated the cost of replicating project's innovations	81	66
(h) Training own health manpower	81	66
(i) Teaching person to person communication skills	70	38
(j) Teaching how to work effectively with local system, beliefs, etc.	60	34

important but not included, or not fully described, in other parts of the Report. The following examples of innovations are presented one by one and grouped according to category. An effort has been made to select examples which are particularly interesting and informative:

Innovations With Regard to Facilities

- This project discovered that the vaccinating of its population was ineffective due to the malfunctioning of parafin refrigerators at the health station level as well as to the high cost and unsuitability of other existing refrigerators. To overcome this problem, a mobile vaccination team was created, on a trial basis, to deliver the vaccine from the MCH Clinic to one of the area districts. Thus far, the system is proving advantageous in terms of cost. Furthermore, local farmer associations are becoming involved and are assisting in the mobilizing of people to be vaccinated. (Ethiopia, No. 118)
- This project installed within its mobile unit (land rover) a large wooden cupboard (divided into sections) with a door that drops down to form a table from which to work. The drop-leaf table has an adjustable leg, and the cupboard has ample space for storage of medicines to be dispensed. The staff and patients are pleased with the innovation since the cupboard compensates for the lack of a stationary facility and helps to cope with the problem of dust. It is also easily accessible which saves times and allows for more comfortable working conditions. The one drawback to the use of the cupboard is its weight; it must be loaded and unloaded each week. (Ethiopia, No. 078)

Innovations of a Medical Nature

- In Nepal two young women, paralyzed by spinal fractures, were suffering from decubiti ("bed sores"). One of the project staff remembered reading that "water beds" were effective in preventing this affliction. The women, therefore, were placed on "water beds" and, as a result, the "sores" began to heal slowly and no new ones appeared. Not only was the innovation successful, but it was achieved very simply by the use of a \$10 air mattress. (Nepal, No. 229)
- An innovative practice of this project is the adoption of a traditional local remedy which is reported to have a multi-purpose function. If the leaves of the "Neem" tree are boiled, the resulting liquid serves to cure a variety of skin ailments. Furthermore, a diabetic who consumes the leaves can eat food as he wishes with no need of insulin. The project claims that some people, after using insulin for years, have substituted it with the "Neem" leaf. Urine analyses of these people show that the sugar level remains at "trace" or "negative." The tree also plays another role in health care: small branches function effectively as tooth brushes. (India, No. 220)

Innovations With Regard to Health Education and Promotion

- By making use of certain Catholic customs, this project found a means of influencing the population toward acceptance of family services. The project staff discovered that, during gatherings on Holy Innocent Day and at the Christmas Carol Pageant, they were given the opportunity to advocate family planning to relatively large

numbers of people. This tactic is unusual in that it introduces a controversial subject among Catholics by means of traditional Catholic customs. Previously, it had been very difficult to reach the Catholics of this area who are very traditional and deeply religious. The project staff found, however, that this approach appealed to the emotions of the people and that they showed unexpected acceptance of the project as well as excellent cooperation in its educational programs. (Sri Lanka, No. 701)

- In this project area, the word "runche" conveys the local interpretation of malnutrition. The term implies that a spell placed on a child is the cause of his illness. The project staff have realized that, by understanding and accepting the local concept as well as by using the word for diagnosis, it is much easier to convince people of the proper treatment for victims of malnutrition. (Nepal, No. 239)

Innovations With Regard to Manpower

- In India, a project providing child development services was encountering, as do many projects, difficulty in overcoming problems of communication between villagers and the mobile supervisory staff. The project discovered that a locally accepted woman working within her own village was much more successful in motivating the mothers and the community to utilize basic services. Previously, existing services were not reaching the rural, tribal areas with any positive impact, nor did members of the communities visit health centres for their needs. The project determined that a local person is much more effective in persuading people to accept the services offered. It is expected that, due to this new approach, the under-utilization of expensive services and the lack of coordination at the "grass-root" level will be overcome. (India, No. 713)
- This project is concerned about the importance of exposing students to the community under "normal" community conditions in ways which permit the effective application of knowledge and skills learned in the classroom. To achieve this, a live-in program has been designed for trainees and their families, and experiences are arranged which are intended to increase one's sensitivity to local problems and attitudes and to develop skills in organizing and working through community groups. One aspect of the program, for example, is that the students are expected to live in facilities "typical" of the village homes and to accept the same inconveniences. This approach has increased awareness to the nation's problems and has insured the "humanization of very sophisticated would-be doctors." The project reports that anxiety of trainees and their families over the safety of their children has been temporary and unfounded. (Colombia, No. 373)

Administrative Innovations

- This project has initiated two practices which help to insure the delivery and utilization of its services:

Medical workers accompany census officials and tax collectors in order to immunize and check for communicable diseases. This practice was suggested by local leaders since relatively few people were visiting the clinics. As a result, more than 90% of the population is receiving immunizations.

- 2) Fines are imposed on mothers who fail to visit the MCH clinics with their children. The fining was also suggested by local people, and it is supervised by locally elected councilmen. After a six-month trial, clinic attendance is up to 80-85% and increasing. (New Guinea, No. 260)
- In an effort to gain community support for family planning activities, this project sought the involvement of interested and influential, as well as formal and informal, community leaders as the initial step in contacting individuals and groups. The involvement of these leaders has created awareness and social support of certain health activities and has helped to solve the problem of existing but poorly utilized services. This approach has also aided in neutralizing unfavorable influential sources in the community. A second activity of this program is the establishment of contraceptive depots in the villages, making contraceptives available near where people live and free of cost. The depot holders were selected such that every sub-cultural group in the community is represented. Both of these project activities have aided in diminishing cultural, religious, and psychological barriers between the target population and its acceptance of family planning services. (India, No. 304)
 - This project, having recognized the combined problems of population increase and food shortage, set out to provide family planning information and services as well as techniques for increasing food production and improving agricultural practices in general. Voluntary community leaders who are members of the National Farmers Organization participate in the program, and consequently there is better coordination and utilization of existing services and facilities. As a result of this approach, the project has better acceptance of family planning practices than the nearby non-project area. (India, No. 312)
 - A project in Ghana was facing two seemingly unrelated problems. On the one hand, there was a high incidence of communicable diseases in the community. On the other hand, the project staff was finding it necessary to contend with mothers bringing to the Health Centre not only their sick children but all the healthy ones as well, since there was no one to care for them in the mother's absence from home. Given the small space for consultation and the fact that the children cried if left outside to wait for their mothers, arrangements had to be made to supervise the "extra" children. To solve the problem, the community helped to build an "adventure playground" where the children not in need of medical attention could be left to play. The idea of a playground is not new, but this particular one is unusual in that it also serves as an immunization center to fight communicable diseases. The project reports that the Health Centre is "full of kids" from the time the doors open and that, consequently, health education has also become an important aspect of project activity. (Ghana, No. 644)
 - At this Health Center, medication in tablet form was being dispensed from large stock bottles to patients on an individual basis. The Center pharmacy found that it was unable to deal efficiently with the large numbers of people waiting for medication. It was decided, therefore, to have the tablets pre-packaged in standardized amounts by using old newspapers and magazines made into small bags. This method proved less expensive in that there was no need to hire an additional compounder; people with little or no training could perform the packaging. As a consequence, the dispensing of medication is carried out much more quickly and service has therefore improved. (Bangladesh, No. 164)

- This project assists with a community program designed to emphasize preventive services as part of an overall plan for community development. The "Special Integrated Financing Program" is an innovative scheme through which people may borrow money and receive a 2% rebate on the loan interest if they meet the following conditions: 1) no birth for one year, 2) a vegetable garden must be planted, 3) environmental sanitation must be improved, and 4) nutrition content of the diet must be upgraded. The two percent rebate is placed in a special savings account to meet medical expenses. (Philippines, No. 343)

APPENDIX A

LIST OF RESPONDENTS BY REGION AND COUNTRY

AFRICA

Country	Respondents
Botswana	<p>066 Health Information System Project c/o AMMB P.O. Box 355, Gaborone Mrs. Betsy Stephens Project Administrator personal address: P.O. Box 438, Gaborone</p>
Cameroon	<p>072 Mvolyé Family Health Project University Center for Health Sciences Yaounde Gladys E. Martin, M.D. Coordinator of Project</p> <p>082 Hopital Adventiste de Koza B.P. 38, Mokolo North Cameroon Jacques Steveny, M.D. Medical Director</p> <p>139 Bansa Baptist Hospital P.O. Box 9, NSO N.W. Province D. Lemke, M.D. Doctor in Charge</p>
Ethiopia	<p>055 Gambo Leprosy Control Center P.O. Box 22, Sheshemane Sr. Maura O'Donohue, M.M.M. Medical Director</p> <p>076 Door of Life Hospital and Clinic AMBO Shoa Province David L. Sorley, M.D. Physician in Charge</p> <p>078 Awash Community Health Services P.O. Box 37, Nazareth Paul T. Yoder, M.D. Project Director</p>

Ethiopia (cont)

- 118 Wollo and Tigre MCH Schemes
Box 610, Dessie Wollo
Ken Grant, M.D.
- 119 Ethio-Swedish Pediatric Clinic
Department of Pediatrics, Faculty of Medicine
P.O. Box 1768, Addis Ababa
Dr. Demissie Habre
Associate Professor and Head
- 654 UNICEF Assisted Health Care
P.O. Box 1169, Addis Ababa
Tiruneh Sinnshaw
Assistant Programme Officer

Gambia

- 101 W.E.C. Mission
Box 86, Banjul
M. Ropp, M.D.
Missionary Doctor

Ghana

- 073 The Danfa Comprehensive Rural Health and
Family Planning Project
University of Ghana Medical School
P.O. Box 4236, Accra
Dr. F. K. Wurapa
Field Coordinator
- 620 Tema District Council Clinic
P.O. Box 1, Amasaman
Anna M. Kurtz
Registered Nurse-in-Charge
- 624 Evangelical Presbyterian Church Hospital
P.O. Box 5, Adidome (Volta Region)
R.C. Brown, M.D.
Medical Superintendent
- 644 Mamobi Health Education Project
Korobabi Polyclinic, Ministry of Health
P.O. Box 184, Accra
Esther Sophia Boohene, M.D., M.P.H.

Ivory Coast

- 104 Hôpital Protestant de Dabou
B.P. 115, Dabou
Paul Snell
Medical Superintendent

Kenya

- 007 Friends Medical Services
Friends Hospital
P.O. Tiriki
Mary Glenn Hadley
Sister Tutor

Kenya (cont)

- 030** Preventive Medical Program
P.O. Box 410, Kisumu
Edna Thimes
- 060** Kenya Netherlands Project for Operations
Research in Outpatient Services
Research Center, Box 20752, Nairobi
Dr. L.C. Vogel
Project Leader
- 621** Tumu Tumu Hospital
PCEA Hospital Tumu Tumu
P.O. Karatina
Arie van Oosterwyk
Medical Superintendent
- 622** Chogoria Hospital and Community Health
Presbyterian Church of E. Africa Hospital
Box 5035, P.O. Chogoria via Meru
Dr. G. C. Irvine
Medical Superintendent
- 641** Family Planning Association of Kenya
P.O. Box 30581, Nairobi
Dr. J. Kabiru
Honorary Secretary/Treasurer

Lesotho

- 056** Comprehensive Health Care Project
Scott Hospital Region
P.O. Box MJ9, Morija
M. Verhage, M.D.
Project Director
- 605** Lesotho, Strengthening Health Services
c/o W.H.O. Representative
P.O. Box MS214 Maseru
J. T. Lema
Medical Officer/Public Health

Liberia

- 116** Cape Palmas Vicariate Health Project
Catholic Mission, Harper, Cape Palmas
Sister M. Sponsa, R.N.
Coordinator of Health Service

Niger

- 608** Equipes Sanitaires de Village
Ministry of Public Health
Niamey
Dr. J.J. Paviot
W.H.O. Representative

Nigeria

- 003 Rural Health Centre
P.O. Box 9, Zungeru, Niger State
Cecily Bourdillon
Medical Officer
- 011 ECWA/SIM Community Health Project
S.I.M. Jos, North Nigeria
Dr. E. J. Cummins
Medical Secretary
- 043 Moniava Hospital and Leprosy Settlement
Ogoja, Cross Rivers State
P.E. Fitzgerald
Midwife-Tutor
- 068 Nigerian Family Health Project
Institute of Child Health
University of Lagos
PMB 1001, Surulere, Lagos
Mrs. Anne Bamisaiye
Research Fellow
- 081 Lafiya Program, Lardin Gabas Health Project
Church of the Brethren Mission
Garkida via Gombe, Gongola State
J. Roger Schrock
Coordinator of Medical Services

Rhodesia

- 080 Comprehensive Approach to Malnutrition
Silveira Hospital
Pvt. Bag 9021, Fort Victoria
Dr. Richard Stoughton
personal address:
117 E. Green Bay Street
Shawano, Wisconsin 54166

Sierra Leone

- 084 The Eastern Clinic
Mobai via Baiima
Dr. B.M. Kobba
Medical Director

Somalia

- 099 Strengthening of Health Services
W.H.O. Office
P.O. Box 374, Mogadiscio
Dr. S.N. Otoo
W.H.O. Senior Officer

South Africa

- 636 Lutheran Medical Foundation
P.O. Box 88
Dundee 3000 Natal
Dr. E. Hestenes
Executive Secretary

Sudan

140 Leprosy Control Program
Sudanaid, P.O. Box 6011
Khartoum
Luka Monoja
A/General Secretary

Tanzania

004 Bedded Dispensary/Maternity Clinics
Buhororo Box 12, Ngara P.O.

Sr. Annette Roberge
Missionary R.N.

053 Namanyere Hospital Road to Health Scheme
P.O. Sumbawanga

Christine H. Dearden
Medical Officer

628 St. Benedict's Mission Hospital
Peramiho P.O. Box 19

Dr. A.A. Konberg
Procurator, Benedictine Fathers

630 St. Walburg's Hospital
Nyangao, P.O. Box 1002
Lindi

Sr. Andrea Polt
(for Sr. Regia, Doctor in Charge)

Tunisia

133 Project Avicenne
7 Rue El Mazri
El Omrawe Tunis, Tunisie A.N,
Soeur Huguette Allard SGM
Chef de Projet

personal address:
c/o St. Thomas More Residence
15-501 Bypass
Chapel Hill, NC 27514

Uganda

033 Kalongo Hospital
Private Bag, Lira

Dr. G. Ambrosoli
Doctor in Charge

121 Kasangati Health Centre
Institute of Public Health
Makerere Medical School
P.O. Box 7072, Kampala

Dr. Josephine M. Namboze
Associate Professor

Uganda (cont)

144 Church of Uganda Hospital
Community Health Programme
P.O. Box 5 Ngora
Dr. J. Maitland
Medical Superintendent

Upper Volta

616 Développement des Services de Santé
BP 7019, Ouagadougou
Dr. F. Martin-Samos
OMS Representative

Zaire

016 Vanga Hospital
Vanga s/Kwilu
CBZO BP 4728 Kinshasa 2
Daniel E. Fountain, M.D.
Physician in Chief

070 Centre Médical Evangélique
Nyankunde BP 55 Bunia, Haut Zaire
Philip Bernard Wood, M.D.
Doctor

122 Pimu Medical Service
Hôpital de Pimu, BP 23
Lisala, Equateur
Dr. David Masters
Medical Director

124 Hôpital de CBFZ
Tondo, Dépêche Spéciale
Mbandaka
Miss G.S. Evans, SRN, SCM

125 Cercle Médical de l'Hôpital de la CBFZ
Yakusu BP 147
Kisangani
Miss D.M. West

132 Bulape Community Health Project
BP 117 Kananga
Dr. Richard Brown
Medical Director

623 Centre Mère et Enfant/Fomeco
BP 169, Kinshasa
W. Van Pelt, M.D., M.P.H.
Project Director

Zambia

- 018 Macha Mission Hospital
Box 340, Choma
David E. Byer, M.D.
Medical Officer in Charge
- 063 Community Health Programme of the
Salvation Army Hosp.
Chikankata, P.B. S2, Mazabuka
Dr. P.A. de Plessis
Chief Medical Officer
- 627 Women's Training Centre
Mindolo Ecumenical Foundation
BP 1493, Kitwe
Mrs. Harriet Mubanga
Head of Programme

NEAR EAST & NORTH ASIA

Iran

- 167 Village Health Worker Training Project
Department of Community Medicine
Pahlavi University, Shiraz
S. Zimmer (for Dr. H.A. Ronaghy)
Research Assistant for Department
Chairman

Jordan

- 162 Lutheran World Federation Health Center
Amman, P.O. Box 402
Dr. Farouk Daher, M.D., D.C.H.
- 166 Southern Baptist Hospital
Ajloun
John Roper, M.D.
Chief of Physicians

Turkey

- 194 Entimesgut Rural Health Project
Institute of Community Medicine
Hacettepe University, Ankara
Nusret H. Fisek, M.D., Ph.D.
Director and Professor

Yemen

- 156 Mother and Child Health Center
c/o C11R c/o British Embassy
P.O. Box 1287, Sana's
Mrs. Patricia David
Medical Sociologist

EAST ASIA & PACIFIC

Bangladesh

- 151 Swedish Save the Children Federation
P.O. Box 2124, Dacca 2
Hans Otterstad
Chief Medical Officer
- 153 Christian Hospital Chandraghona
Chittagong Hill Tracts
Dr. S.M. Chowdhury
Medical Superintendent
- 164 Patharghata Health Center
P.O. Box 152, Bandel Road
Chittagong
Sr. Patricia Travaline
Consultant to Project
- 169 Medical Assistant Training Programme/
Comprehensive Health Care for Rural
Population
14/15 Motijheel Commercial Area, Dacca
Dr. A.H. Abdur Rahman
Project Director
- 195 Companiganj Health Project
P.O. Basarhat, Noakhali
Colin McCord
Associate Professor
personal address:
Johns Hopkins University
615 N. Wolfe St., Baltimore, MD
- 818 Bangladesh Association for the Aged &
Institute of Geriatric Medicine
78, Dhammandi Res Area, Road No. 5
Dacca
M. A. Wahid
Secretary

**China, Republic of
(Taiwan)**

- 702 Prevention of Infant Death Project
103, Min Chuan Rd., Taichung City
Taiwan
Hung Fu-Teh
Section Chief, Health Education and
Nutrition
Taiwan Provincial MCH Institute

**China, Republic of (cont)
(Taiwan)**

**722 Comprehensive Public Health Nursing
Services**

7-2 Kung Yuan Road
Taipei City, Taiwan 100

Hsiu-Ching Chen
Chief Nurse, Director Public Health
Nursing Section
Taipei Public Health Teaching &
Demonstration Center

personal address:
318, Yen-Shou St., Sung Shan District
Taipei City

Fiji Islands

254 J.P. Bayly Clinic
Fellowship of SS. Francis and Clare
P.O. Box 417, Suva
George R. Hemming, M.D.

Guam

262 Family Health Program/Catholic Medical
Center
P.O. Box 8840, Lamuning, Guam 96911
Sister Jean Marie Menke
Coordinator

India

206 Arogyavaram Development Society
P.B. No. 13, Madanapalle,
Chittoor (DL) A.P.
India Pin-517325

Dr. K. Suresh
Chief Medical Coordinator

209 Innovative Project for Family Planning
Program
Kasturba Medical College
Manipal (576119), Karnataka State
Dr. Y. Subrahmanyam
Professor of Social Preventive Medicine

212 Mobile Ophthalmic Unit Service
Gujarat Blind Relief & Health Assn.
P.O. Bochasan 388140 (Dist. Kheda)
Gujarat State

Dr. R.R. Doshi
Honorary Secretary and Eye Surgeon

218 Raipur Pallottine Association
Pallotti Ashram
Raipur-492005 (MP)

Rev. Lancelot J. Reis, SAC
Administrator

India (cont)

- 220 Community Health Program
Nazareth Hospital
Mokama P.O. 803 302 Patna Dt.

Sister Mary Jude
Administrator
- 223 Christian Hospital for Women & Children
Berhampur, Ganjam District
Orissa 760 001

Dr. E.J. Marsh
Medical Superintendent
- 226 Moorshead Memorial Christian Hospital
Post G. Udayagiri, District Phulbani
Orissa State

Dr. M.R. Krishna Murthy
Medical Superintendent
- 227 Maharashtra Arogya Mandal
Hadapsar, Poona

P.V. Kunhamboo
Administrator
- 230 The Voluntary Health Association of India
C-45 So. Extension, Part II
New Delhi 110049

James S. Tong
Executive Director
- 235 St. Luke's Hospital
Community Health Program
Vengurla, Maharashtra 416 516

Ronald S. Seaton, M.D.
Medical Superintendent
- 237 Program for the Promotion of Health &
Hygiene
I.H.M. Hospital
Bharananganam, Kerala State, S. India

Sister M. Michael Thakadyel
Directress
- 244 Integrated Health Services Project
c/o Miraj Medical Center
Miraj District Sangli
Maharashtra 416 410

Dr. Eric Ram
Project Director

India (cont)

- 245 Integrated Health Project
Deenabandu Medical Mission
R.K. Pet- 631 303, Tamilnadu
Prem C. John, M.D.
Medical Director
- 247 Christian Medical College Hospital
Ludhiana-141001, Punjab
Mrs. H. Dhillon
Director, Community Medicine
- 248 Mini Health Centers/Voluntary Health
Services
Medical Center
Adyar, Madras-20
K.S. Sanjivi
Director of Projects
- 250 Christian Fellowship Community Health
Center
Santhipuram, Ambilikai 624612
Dr. Jacob Cherian
Director
- 251 St. John's Hospital
P.O. Pirappencode, via Venjaramood 695607
Kerala
Fr. Lawrence Thottam
Director
- 261 Mitraniketan Health Center
P.O. Vellanad, Trivandrum District
Kerala 695 543
Dr. Jean Kohler
Director of Health Service
- 304 Gandhigram Institute of Rural Health &
Family Planning
Gandhigram P.O., Ambathurai R.S.
Madurai District 624 309
Dr. P.R. Dult
Advisor to the Director
- 305 Non-Formal Education for Rural Women/An
Experiemntal Project for the Development
of the Young Child
Council for Social Development
53, Lodi Estate
New Delhi 110 003
Dr. K.S. Bhat
Deputy Director

India (cont)

- 306 Nutrition Education Unit & Public Health Project**
Campbell Hospital, Jammalamadugu (PO)
Chuddapah (DI), Andhara Pradesh
Mrs. G. Martha Margaret
Community Health Nurse
- 312 Family Planning & Agriculture Production Project**
Bharat Krishak Samaj (Farmers Forum India)
A-1, Nizamuddin West
New Delhi 110 013
Dr. D.A. Bholay
Secretary General
- 315 Holy Cross Hospital & Community Health Services**
Kamagere P.O. 571443, Kollegal
Karnataka, S. India
Sister Doris
Sister in Charge
- 317 Basic Health Services/Multipurpose Workers Scheme**
Director of Health Services, Government of Maharashtra
Government Dental College Building
Bombay 400 001
Dr. N.S. Deodhar
Joint Director of Health Services
- 332 Chinchpada Christian Hospital**
Chinchpada, D. Dhulia, Maharashtra
O. Uptigrove
Medical Superintendent
- 344 Seva Sadan Hospital**
Barhalganj, District Gorakhpura U.P.
Miss A. Lindeberg
Nurse Superintendent
- 345 Mission Dispensary/Swedish Mission**
Chauri Chaura, District Gorakhpur, U.P.
Miss Y. Johansson
Missionary

India (cont)

346 Christian Leprosy Eradication Project
P.O. Seorahi, Dist. Deoria U.P.

Reverend E. Gunnar
Executive Secretary

personal address:

Fellowship of Baptist Churches
P.O. Barhaj, Dist. Deoria U.P.

350 Community Health/Swedish Mission Hospital
Triuppultur, Ramnad District
Tamil Nadu

Dr. Fredric John
Medical Superintendent

710 UNICEF Assisted Basic Health Services of Government of India in Rajasthan
11, Jor Bagh, New Delhi 110003

G. K. Pillai
Programme Officer

713 Integrated Child Development Services
Begumpet, 16, Umanagar, Hyderabad (AP)
India 500016

Dr. H.S. Nayak
UNICEF Field Representative, SEIO

Indonesia

204 Rumah Sakit Umum Bethesda
Kotak Pos 20
Singkawang, Kal Bar
Wendell Geary, M.D.
Physician

228 Casuarine Coast Project
Misi Katolik Basiem-Agats
via A.M.A. Sentani, Irian Jaya
Anthony van de Wouw, MSC
Catholic Missionary

303 Klampok Community Health Program
H.C. Emanuel, Klampok, Banjarnegara
Jateng

Lucas Hendrata, M.D.
Chairman

personal address:

Yayasan Indonesia Sejahtera
Jalan Musium 4, Jakarta

Korea

- 294 Fatima Hospital**
Sin Am Dong 302-1, Daego 630
Sister Mary Agnes Salber, Hospital Director
Sister Mary Daniel Park, Director
Medical Record Department
- 299 Chunseong Gun Community Health Program**
School of Public Health
Seoul National University
28 Yom Keum Dong, Jomgro Ku
Seoul
Hyung Jong Park, M.D.
Dean
- 300 Presbyterian Medical Center Rural
Health Program**
Jeonju, Chun Puk Do-520, S. Korea
Dorothy Knight
Supervising Nurse
- 307 Kojedo Community Health Project**
Shil Jun Lee, Hachung Myon
Kojedo, Kyung Nam, S. Korea 603-27
John R. Sibley, Director
Future Director:
Dr. Kyung-Shik Lee
Koje Health Council, Kohyun, Kojedo
Kyung Nam
- 308 Yonsei Community Health Teaching
Project**
Yonsei University Medical College
Department of Preventive Medicine
COP Box 1010
Seoul
Dorothea Sich, M.D., MPH
Associate Professor
- 340 Family Planning Committee (Aeyuk)**
Korea National Christian Council
Kwangwha Moon P.O. Box 420
Seoul
Mrs. Elva D. Harper
Acting Director, Family Planning Program
personal address:
Methodist Mission
P.O. Box 16, Taejon
Korea 300

Nepal

- 211 Lalitpur Integration Project
P.O. 252, Kathmandu
Mona R. Bomgaars
Former Director
personal address:
1261 3rd Ave., SW
LeMars, Iowa 51031
- 229 Team Hospital
Dandeldhura Mahakali 131000
Maynard Seaman, M.D.
Medical Director
- 239 Shanta Bhawan Community Health
Program
Shanta Bhawan Hospital
P.O. 252, Kathmandu
Mona R. Bomgaars
Former Director
personal address:
1261 3rd Ave., SW
LeMars, Iowa 51031
- 258 The Baudha-Bahunipati Family Welfare
Project
Family Planning Association of Nepal
P.O. 486, Kathmandu
John S.C. Carr
Project Advisor
- 295 Health Manpower Development
Institute of Medicine
Tribhuvan University
P.B. 1240, Lazimpat
Kathmandu
Dr. Mathura P. Shrestha
Program Officer
personal address:
10/508, Mahabaudha
Kathmandu

New Guinea

- 260 Nazarene Hospital
Box 456, Mt. Hagen
Western Highlands, Papua
Jack T. Patton, M.D.
Medical Superintendent
- 339 Mogoro Fugwa Health Sub Centre
P.O. Box 16, Koroba SHP, Papua
Frances Leak
Registered Nurse

Philippines

- 208 Integrated Approach of the Public Health Program in the Delivery of Health Services to Jawi-Jawi**
Holy Family Hospital, Bongao
Jawi-Jawi
Sister Carmella Canlas
Certified Public Health Nurse—Midwife
- 238 Kansalakan Mt. Clinic and Huntington Beach Mt. Clinic**
"Mountain Clinics"
Guihulngan, Negros Oriental
Fr. John W. Peterson
Director
- 241 The Lorma Hospital Mobile Family Planning and Medical Clinic Program**
Carlatan, San Fernando, La Union
Dr. Beatriz G. de la Cruz
Chief, Medical Ancillary & Family Planning Services
personal address:
Pagdaraoan, San Fernando, La Union 0501
- 242 Katiwala Project**
Development of People's Foundation, Inc.
Bajada, Km. 5, Davao City
Elpidio S. Bajas
Project Coordinator
- 273 Cebu Institute of Medicine, Community Medico**
Social Services
Paknaan Mandaue City, Cebu
Dr. Florentino Solon
Chairman, Department of Preventive Medicine
personal address:
Cebu Institute of Medicine
79 F. Ramos St., Cebu City
- 309 Bohol Province MCH/Family Planning Project**
P.O. Box 23
Tagbilaran City 6301
Ms. Pat B. Mariano
Director of Evaluation
- 333 Barangay Health Aide Project**
c/o Cebu Institute of Medicine
79 F. Ramos St., Cebu City
Dr. Tomas L. Fernandez
Physician Manager

Philippines (cont)

**343 Integrated Community Health Project of
San Luis, Pampanga
Institute of Community and Family
Health
11 Banawe, Quezon City
Dr. Fe del Mundo
Director**

**700 Voluntary Sterilization for Public Health
Professionals in the Philippines
c/o Philippine Public Health Association
Bureau of Quarantine, Port Area, Manila
Alberto T. Rous
Executive Secretary, PPHA**

Sri Lanka

**701 Negombo Family Health Project
c/o Mr. S.B. Ranarajah, 35, Sea St.
Negombo
A.C.L. Mendis
Programme Manager
personal address:
561, 3rd Avencie, Lady Catherine
Model Town, Ratmalana**

Thailand

**217 Urban Life Clinic
c/o The Bangkok Christian Hospital
124 Silom, Bangkok 5
Prasone Chairatana, M.D.
Director**

**219 A System Development of Community
Health Care & Health Manpower
Faculty of Public Health
Mahidol University
420/1, Rajvithi Road, Phya-Thaj
Bangkok 4
Dusanee Suttapreyasri, M.D.
Assistant Professor**

**252 Lampang Health Development Project
(DEIDS/Thailand)
c/o Dr. Somboon Vachrotai
Director General, Department of Health
Ministry of Public Health, Bangkok
Dr. Somboon Vachrotai
Project Director**

Thailand (cont)

- 282 National Family Planning Program**
Family Health Division, Ministry of Public
Health, Bangkok
Somsak Varakamin, M.D.
Director, Family Health Division
- 283 Ramathibodi's Community Health Program**
Department of Surgery, Ramathibodi
Hospital
Rama Vi Road
Dr. P. Buri
Professor and Chairman
Department of Surgery
- 291 The Planned Parenthood Association of
Thailand (PPAT)**
467 Phaya Thai Building, Sri-Ayudhaya Rd.
P.O. Box 1658, Bangkok
Mr. Suparek Chuengcharoen
Chief of Field Operation Division
- 334 Bangkla Baptist Hospital**
Bangkla, Chacheungsao
John H. Tatom, M.D.

LATIN AMERICA/CENTRAL AMERICA

Costa Rica

- 361 Family Planning Services**
Population Office
USAID, c/o American Embassy, San José
Léon López
Chief, Population Office
- 367 "Salud en Comunidades Rurales"**
Ministerio de Salud
Apartado 10.123, San José
Dr. Herman Weinstok W.
Ministro de Salud
- 422 Programa de Salud para Comunidades
Rurales**
Ministerio de Salud
Apartado 10.123, San José
Dr. Herman Weinstok W.
Ministro de Salud

El Salvador

- 353 Programa Credho Salud Física y
Organización Comunal**
Apartado (01) 6, San Salvador
Vicente Alfredo Salguero
Coordinador Ejecutivo

El Salvador (cont)

358 Family Planning and Health Services
 USAID Mission to El Salvador
 c/o American Embassy
 San Salvador
 Samuel Taylor
 USAID, Health and Population Officer

405 Aldea Infantil S.O.S.
 Padres Franciscanos
 Sonsonate
 Rev. Flavian Mucci
 Director Espiritual

413 Medical Clinic
 S. Pedro Puxtla, Ahuachapán
 Rev. G. Vellardita, OFM

Guatemala

364 Hospital Jacaltenango Rural Health Program
 Jacaltenango, Dept. Huehuetenango
 Dorothy Erickson
 Médico Directora

389 Promotores de Salud
 Apartado 5, Huehuetenango
 Madre Francisca
 personal address:
 Centro San Lucas
 5 Ave. Norte BNo.408
 San Miguel

406 Programa Médico para Fincas
 Santiago Atitlán, Sololá
 Dr. Salvador R. Baldizón B.
 Director

425 Fortalecimiento de Salud Rural
 5 Av. 13-Zona 9 Guatemala
 Dr. Juan Jacobo Erdmenger
 Director

439 Industrial and Occupational Health Program
 Av. Hincapié, 14-37, Zona 13 Guatemala
 Dr. Werner Ascoli
 Director

441 Clínica Behrhorst
 Apartado 15, Chimaltenango
 Mary Hamlin de Zúñiga, M.P.H.
 Asesora, Salud Pública
 personal address:
 Apto. 7, Chimaltenango

Haiti

453 Centre d'Education pour les Petits
Déshérités
Boxes 130-A (ét. 699 Affaires), de Jacmel
Sequin

Albert Deroneth
Pasteur-Educateur

454 Dispensary—Church of the Nazarene
Box 1323, Port-au-Prince
Joan Read and Lois Ford
Registered Nurses

463 Centre de Santé—Hôpital L'Espérance
Pilate
Madelein Giroux
Responsable

Mexico

363 Centros de Salud de la Iglesia Presbiteriana
entre los Tzeltales
Apartado 8, San Cristóbal de Las Casas
Chiapas

J. Samuel Hofman
Profesor

Nicaragua

379 Clínica Nazareno
Valle Pantasma, Apartado 3, Jinotega
Charlotte Greene
Enfermera Titulada-Misionera
personal address:
Apartado 3911, Managua

380 Clínicas Rurales de la Misión Hermanos
en Cristo
c/o Cara Musser, Apartado 4663
Managua

Glen Heise
Coordinador de Servicios Sociales

Trinidad

462 The Family Planning Association of
Trinidad and Tobago
143 Henry Street, Port-of-Spain

Mrs. Joyce Bicep
Ag. Economist II

personal address:
Ministry of Health
Sackville St.
Port-of-Spain

LATIN AMERICA/SOUTH AMERICA

Bolivia

- 354 Consultorio Gran Poder
Casilla 483, La Paz
Dra. Ruth W. Tichauer
Médico Cirujano
- 382 Obra Médica de la Iglesia del Nazareno
Casilla 5958, La Paz
Mrs. Tom Spalding
- 384 Enseñanza de Medicina de la Comunidad
Universidad Mayor de San Simón
Casilla 558, Cochabamba
José Ruiz Guzmán
Director del Proyecto
- 393 Proyecto Salud y Comunidad
Hospital Metodista
Casilla 4826, La Paz
Rosario Andre Dalence, M.D.
Directora
- 433 Salud Pública Rural-Proyecto Experimental
Demostrativo
USAID, P.O. Box 673, La Paz
Alberto Gumiel Benitez, M.D.
Asistente Administrativo
- 444 Public Health Project Yungas-Alto Beni
Casilla 356, La Paz
Harry A. Newman
Director
- 508 Plan Quinquenal de Salud
Casilla Correo Central 3419, La Paz
Dr. Raul Urquiza Rojas
Jefe, Dpto. Médico
personal address:
Abdon Saavedra 2334
Sopocachi, Casilla 3419, La Paz
- 509 Equipo de Médico Móvil de Velasco/San
Ignacio de Velasco
Dpto. Santa Cruz
Angela Flatz
Supervisora
Servicios de Salud

Brazil

351 Programa de Saúde da Comunidade
 Centro de Saúde-Escola de Paulinia
 Rua Costa e Silva, s/n
 Paulinia - 13.140 S.P.

Julio Henrique Basso
 Director

369 Fundação Municipal de Saúde
 Unidade Sanitaria P. Morais
 35715 Prudente de Morais, M.G.

Sister Anna Motta, M.D.
 Medical Officer in Charge

personal address:
 Rua Maranhão, 1050
 30000 Belo Horizonte

504 Centro de Saúde-Escola
 R. Major Mateus 587
 18600 Botucatu, S. Paulo

Cecilia Magaldi
 Prof. Titular M. Preventiva

Chile

420 Programa de Extension de Servicios de Salud
 Materno-Infantil y Bienestar Familiar
 en Chile

Ministerio de Salud, Huérfanos 1273
 Of. 810
 Santiago

Rebeca Vargas Carvacho
 Administrador Público de Salud

Colombia

370 Centro Asistencial San Pedro Claver
 Carrera 75 B No. 38-18 Sur
 Apartado Aereo No. 16029, Bogotá

Dr. Juvenal Rodas
 Médico Jefe

371 Futuro Para la Niñez
 Apartado Aereo 4445, Medellin

Amparo Muñoz Parra
 Asistente Promoción Social

372 Centro Parroquial San Mateo
 Calle 78 No. 50-23
 Bogotá 9

Antoine Delaere
 Vicario Cooperador

Colombia (cont)

- 373 Centro de Investigaciones Multidisciplinarias
en Desarrollo Rural (CIMDER)-Norte del
Cauca
Apartado Aereo No. 3708, Cali
Dr. Oscar Echeverri
Director
- 374 Centros Médicos Juventudes de la ONU
Avenida 9 A No. 12-66
Barrio Granada, Cali Valle
Enrique Laureano Gómex Ortiz
Director Mundial
- 447 Proyecto de Nutrición Universitaria
Apartado Aereo 2188, Dpto. Pediatría
Universidad del Valle, Cali
Luis Fajardo
Director
- 507 Asociación Acción Unida Comisión de Salud
Apartado Aereo 18, Montería, Córdoba
Dr. Julian Ramos Ruiz
Médico Coordinador

Ecuador

- 355 Programa de Promotor de Salud entre
Shaur
Shell, Pastaza, Macuma
Casilla 7
Nettie Buhler
Course Coordinator and Promoter

French Guiana

- 518 Groupe Inserm U79
Groupe de Recherche sur les Arbo Virus
Pasteur Institute Research Project
B.P. 304 Cayenne
97305 Cedex, French Guiana

Paraguay

- 360 Programa de Protección a la Familia
Edificio "Patria," 5^o Piso
Tacuarí 335, Asuncion
Odón Frutos
Senior Project Assistant/Pop/USIAD
personal address:
c/o American Embassy, Asunción
- 515 Sector de Salud de Misión de Amistad
General Santos y 8 de diciembre
Asunción
Lucia Elvira Ybarra de Feral
Coordinador Médico

- Peru** 392 Posta Sanitaria de Pevas
Apartado 216, Iquitos
Sr. Alice Dubé Audet
Enfermera Encargada
- Venezuela** 437 Programa de Medicina Simplificada
Ministerio de Sanidad y Asistencia Social
Centro Simón Bolívar, Edif. Sur, Caracas
Dr. Emilio López-Vidal
Adjunto-Salud Pública International
personal address:
Qta. Piritál - 1ª Avd. El Casquillo
Urb. Avila, La Florida, Caracas

ADDITIONAL RESPONDENTS

Although the data of the following twelve projects were received too late to be included in the analysis, we are grateful to the respondents for the time and effort required to complete the questionnaire.

AFRICA

- Nigeria** 042 Mambilla Baptist Hospital
Warwar, Gembu via Yola, Gongola State
Willi D. Gutowski, M.D.
- 079 CBM Ruram Health Program
CBM, Garkida, Gongola State
Dr. David Hilton
Medical Consultant
- Tanzania** 035 Rulenge Hospital
Postal Agency Rulenge via Bukoba
Sister Jeanne D'Arc Goyette
Matron
- 667 The Medical Work of Mbulu Synod of ELCT
Haydom Lutheran Hospital, P.O. Mbulu
Sven Hinderaker, M.D.
Doctor in Charge
- Zaire** 123 Based on Bolobo Hospital, Rural District
c/o CBFZ, B.P. 397, Kinshasa 1
Georgina E. Mackenzie, S.R.N.

EAST ASIA & PACIFIC

- India**
- 233 Indo Dutch Project for Child Welfare
6-3-885, Somajiguda
Hyderabad—500 004
Andhra Pradesh
Dr. Herbert W. Butt
Director of Indian Bureau
- 349 Maternal and Child Health Care Clinic
Christian Hospital, Champa Dist.
Bilaspur, M.P.
Dr. T. Mathai
Medical Superintendent
- Bangladesh**
- 816 Gonoshasthya Kendra (People's Health
Centre)
P.O. Nayarhat, Via Dhamrai, Dacca
Mary Clare Doherty
Secretary
- Pakistan**
- 325 A Critical Study of Health Manpower
Training Programme in Pakistan
Armed Forces Medical College
Rawalpindi
Col. Ashraq Ahmed
Director of Research
- Philippines**
- 284 Community Council for Health Protection
Comprehensive Community Health
Program
Zone 78 Leveriza St., Malate, Metro
Manila
Metodio A Palaypay, M.D.
Assistant Professor
personal address:
11 Road One, Project Six, Quezon City

LATIN AMERICA

- Colombia**
- 381 Puesto de Salud
Argelia, Cauca
Hanny Rolli
Enfermera
personal address:
Casa Regional SMB
Apdo. Aereo 783, Popayan
- El Salvador**
- 424 Ampliación de la Red de Servicios de Salud
Calle Arce No. 827, San Salvador

APPENDIX B

KEY TO CHART OF MAJOR CHARACTERISTICS

Questions	Columns	Total Projects
1 In which of these is your project involved most?		
a) Training	1a	34
b) Research	1b	11
c) More than one answer	1c	7
2 Does your project provide these environmental sanitation services?		
Building family privies	2	83
3 Does your project provide nutrition services which try to change the dietary practices of certain age groups or for certain illnesses?	3	35
4 Does the project have a plan that specifies the changes in beliefs and behavior that the project will attempt to bring about?	4	80
5 Have those traditional health practitioners been incorporated into your project's program in these ways?		
a) As paid project staff	5a	9
b) As paid volunteer workers	5b	38
c) Through contract, with fee for service	5c	8
d) Through referral by project staff to practitioners	5d	21
e) Through referral by practitioners to the project	5e	40
f) In some other way	5f	27
6 Have traditional birth attendants (midwives) been incorporated into your program in these ways?		
a) As paid project staff	6a	15
b) As paid volunteer workers	6b	37
c) Through contract, with fee for service	6c	10

Questions	Columns	Total Projects
7 Have you made any changes in or developed novel approaches to the design of facilities or the assignment and use of space for patients, patients' family members, isolation of patients with communicable diseases, staff members?	7	64
8 In your project what degree of control do community representatives have over the following kinds of decisions? <i>Selection of services to be offered</i>		
a) Share equally in decisions with professionals	8a	25
b) Have policy and administrative control — they alone make the decisions	8b	1
9 In <i>planning</i> your project, to what extent were <i>consumers</i> involved?		
a) Some	9a	68
b) A great deal	9b	16
10 Has your project a way of determining the cost of delivering services per person served?	10	54
11 Does your project train (or pay for training) physician assistants? (the X's in column 11 represent "yes" answers to both question 11 and question 12)	11	32
Are they paid while being trained? (the X's in column 12 mean these projects answered "yes" to question 11 but "no" to question 12)	12	8
Is there a system for evaluating the trainees in terms of the skills they have acquired?	13	124
Has an assessment been made of the quality of health services delivered by your project?	14	131
Have you made comparisons between the situation before the project began (or early in its history) and the situation at later times?	15	31

Chart of Major Characteristics

COUNTRY	PROJ. #	CHARACTERISTICS																									
		1a	1b	1c	2	3	4	5a	5b	5c	5d	5e	5f	6a	6b	6c	7	8a	8b	9a	9b	10	11	12	13	14	15
NIGERIA	003					X	X						X				X			X							
TANZANIA	004	X			X	X		X	X	X						X	X				X	X					X
KENYA	007				X	X																	X		X	X	
NIGERIA	011				X	X						X										X			X	X	
ZAIRE	016				X	X	X													X		X	X		X	X	
ZAMBIA	018				X	X	X					X									X				X	X	
KENYA	030					X	X	X					X							X							
UGANDA	033																X								X	X	
NIGERIA	043																X					X					
TANZANIA	053				X	X						X							X			X		X	X	X	X
ETHIOPIA	055					X	X					X							X		X			X	X	X	
LESOTHO	056				X	X	X										X			X				X	X	X	X
KENYA	060		X			X											X					X			X		
ZAMBIA	063				X	X						X	X				X								X	X	
BOTSWANA	066					X	X													X					X	X	
NIGERIA	068			X		X	X				X	X	X				X					X			X	X	
ZAIRE	070										X	X	X				X					X			X	X	
CAMEROON	072	X				X											X								X	X	
GHANA	073		X		X	X	X		X		X	X			X		X		X		X	X		X	X	X	X
ETHIOPIA	076					X																			X	X	
ETHIOPIA	078					X			X			X			X							X					
RHODESIA	080					X													X		X			X	X	X	
NIGERIA	081	X			X	X			X					X	X						X				X	X	
CAMEROON	082				X	X																				X	X
SIERRA LEONE	084	X			X	X					X			X			X			X					X	X	
SOHALIA	099			X	X	X			X	X	X	X		X	X				X						X	X	
GAMBIA	101										X									X						X	
IVORY COAST	104				X	X											X				X	X			X	X	
LIBERIA	116				X	X	X										X				X	X			X	X	
ETHIOPIA	118					X	X										X				X	X			X	X	X
ETHIOPIA	119					X											X	X			X	X			X	X	X
UGANDA	121	X			X	X	X										X			X			X		X	X	
ZAIRE	122				X	X																					
ZAIRE	124				X	X							X												X	X	
ZAIRE	125					X											X									X	X
ZAIRE	132					X	X					X														X	X
TUNISIA	133	X				X	X													X						X	X
CAMEROON	139					X	X													X					X	X	
SUDAN	140																										
UGANDA	144					X																			X	X	

Chart of Major Characteristics (cont)

COUNTRY	PROJ. #	1a	1b	1c	2	3	4	5a	5b	5c	5d	5e	5f	6a	6b	6c	7	8a	8b	9a	9b	10	11	12	13	14	15
BANGLADESH	151																							X	X	X	
BANGLADESH	153				X	X		X			X	X		X			X								X	X	
YEMEN ARAB REPUBLIC	156					X											X								X	X	
JORDAN	162					X																			X	X	
BANGLADESH	164					X																			X	X	
JORDAN	166					X																X			X	X	
IRAN	167	X			X	X																X			X	X	X
BANGLADESH	169	X			X	X	X													X			X			X	
TURKEY	194				X	X	X										X						X				
BANGLADESH	195				X	X	X			X		X		X				X		X		X	X		X	X	
INDONESIA	204				X												X								X	X	
INDIA	206				X	X											X			X					X	X	
PHILIPPINES	208				X	X	X		X						X	X	X		X	X					X	X	
INDIA	209				X	X																	X				
NEPAL	211				X	X			X						X								X				
INDIA	212			X	X	X									X		X										X
THAILAND	217				X	X											X								X	X	
INDIA	218																										
THAILAND	219		X		X	X	X		X						X							X			X	X	X
INDIA	220				X	X	X						X	X			X						X		X	X	X
INDIA	223				X																				X	X	X
INDIA	226				X	X	X	X	X			X	X	X	X		X			X		X					X
INDIA	227						X													X		X					
INDONESIA	228		X															X									
NEPAL	229				X	X												X					X		X	X	
INDIA	230	X					X														X				X	X	
KOREA	234													X				X							X	X	
INDIA	235				X			X			X				X		X	X		X					X	X	
INDIA	237				X	X														X					X	X	
PHILIPPINES	238				X	X	X					X	X				X					X		X	X	X	
NEPAL	239				X	X			X	X	X	X	X		X		X						X		X	X	
PHILIPPINES	241				X	X	X	X		X	X				X		X			X							
PHILIPPINES	242				X	X	X				X	X					X			X		X			X	X	X
INDIA	244		X		X	X	X		X		X	X				X	X			X		X			X	X	X
INDIA	245	X			X	X	X		X			X				X	X	X		X					X	X	
INDIA	247				X	X	X		X	X		X				X	X			X					X	X	X
INDIA	248				X			X							X					X		X			X	X	
INDIA	250	X			X			X			X				X								X		X	X	
INDIA	251				X	X	X			X					X		X	X		X		X			X	X	
THAILAND	252		X		X	X	X		X			X			X					X		X	X		X	X	

Chart of Major Characteristics (cont)

COUNTRY	10J. #	1a	1b	1c	2	3	4	5a	5b	5c	5d	5e	5f	6a	6b	6c	7	8a	8b	9a	9b	10	11	12	13	14	15
FIJI ISLANDS	254				X					X																	
NEPAL	258				X	X		X	X		X	X								X		X			X	X	
NEW GUINEA	260	X				X	X										X	X			X		X		X	X	
INDIA	261				X	X	X				X						X	X		X					X	X	
GUAM	262					X		X													X	X				X	
PHILIPPINES	273	X			X	X	X		X						X		X	X		X		X	X		X	X	X
THAILAND	282						X			X						X				X					X	X	
THAILAND	283	X			X	X	X		X		X				X								X		X	X	
THAILAND	291	X			X	X		X		X							X			X						X	
NEPAL	295		X																	X		X					
KOREA	299				X		X										X	X		X					X	X	X
SOUTH KOREA	300				X	X	X																X		X	X	
INDONESIA	303				X	X			X			X			X		X	X		X					X	X	
INDIA	304	X			X	X												X		X					X	X	
INDIA	305		X			X	X						X				X				X					X	
INDIA	306					X	X				X				X					X							
KOREA	307				X	X	X				X	X						X		X			X		X	X	
KOREA	308	X			X	X	X										X	X		X					X	X	X
PHILIPPINES	309			X	X	X	X								X					X		X				X	X
INDIA	312	X			X		X								X	X		X			X						
INDIA	315					X																X					
INDIA	317						X						X				X								X	X	X
INDIA	332										X		X	X	X				X						X	X	
PHILIPPINES	333	X			X	X	X		X			X		X		X		X		X				X	X	X	X
THAILAND	334					X					X						X								X	X	
PHILIPPINES	337	X					X							X											X	X	
NEW GUINEA	339					X											X								X		
KOREA	340	X				X				X	X	X							X		X				X	X	
PHILIPPINES	343																										
INDIA	344					X											X								X	X	
INDIA	345																										
INDIA	346																X									X	
INDIA	350																	X		X		X					
BRAZIL	351	X				X																			X	X	
EL SALVADOR	353	X																		X							
BOLIVIA	354				X	X		X		X	X						X			X		X					X
ECUADOR	355					X	X	X				X											X		X	X	
EL SALVADOR	358				X	X	X	X							X									X	X	X	
PARAGUAY	360															X			X		X	X			X	X	
COSTA RICA	361	X					X								X				X		X		X				

Chart of Major Characteristics (cont)

COUNTRY	PROJ. #	1a	1b	1c	2	3	4	5a	5b	5c	5d	5e	5f	6a	6b	6c	7	8a	8b	9a	9b	10	11	12	13	14	15
HAUTE VOLTA	616	X			X								X														
GHANA	620					X																			X	X	
KENYA	621					X					X	X										X	X		X	X	
KENYA	622	X			X	X												X					X		X	X	X
ZAIRE	623					X																			X	X	
GHANA	624				X				X			X	X									X			X	X	
ZAMBIA	627				X	X	X																		X	X	
TANZANIA	628				X	X																			X	X	X
TANZANIA	630				X	X	X																				
SOUTH AFRICA	636			X		X														X					X	X	
KENYA	641						X													X				X	X	X	
GHANA	644			X		X	X					X	X				X							X	X	X	X
ETHIOPIA	654				X		X						X										X				
PHILIPPINES	700	X					X																				
SRI LANKA	701	X					X						X		X										X	X	
REPUBLIC OF CHINA	702					X	X		X		X	X						X		X					X	X	
INDIA	710					X		X					X	X			X						X		X	X	
INDIA	713				X	X			X				X	X					X			X	X		X	X	
REPUBLIC OF CHINA	722																X			X					X	X	
BANGLADESH	818		X			X	X										X			X					X	X	

APPENDIX C

PROJECT AND POPULATION CHARACTERISTICS

This report is based on 180 questionnaires completed by projects delivering health services in 54 of the developing countries.¹ This chapter presents information on the following project characteristics: their location by region; their size; the periods in which they were established; their present state of development; the chief sources of their funds; their relative emphasis on service, training, or research; and their expectation of being replicated.

Regional distribution: most are in East Asia, few in Near East. Regions referred to are those distinguished by AID; the projects responding are distributed as follows:

41% (75 projects) in East Asia and the Pacific (principally the countries of the Indian subcontinent, Indonesia and the Philippines)

31% (56 projects) in Africa (excluding Egypt)

25% (44 projects) in Latin America (Mexico, the Caribbean, Central and South America)

3% (5 projects) in the Near East (Greece, Egypt and Western Asia through Iran)²

Project size: half cover areas of 1,000 or more square kilometers; few nationwide. Projects serving a whole country were not planned to be included in this survey. However, about a tenth of those replying are nationwide in area, albeit limited in scope of services. One-fifth are confined to one or more provinces or regions of a country, over half cover one or more rural areas, and the remainder are in one or more urban areas. The areas served range from relatively small to relatively large. A fifth of the projects serve areas under 100 km² (less than 36 square miles); a quarter, areas of 10,000 or more km² (over 3,600 square miles). Other measures of project size include the number of persons served, the size of the project staff, the range of services and the number of facilities operated.

Over half of the projects were established in the 1970's. The projects surveyed have had relatively short lives. Over half came into existence in the 1970's, and another quarter in the 1960's. Only six percent date back to the period before 1930. Nearly half of the *African* projects were organized between 1971 and 1975, but only a fourth to a fifth of those in the other regions.

Trends through time can be identified only with caution. Comparisons between newer and older projects are made throughout this report. Such comparisons are not always easily interpreted. The data reflect only the status of projects which responded at a particular point in time. No information is available concerning how long ago non-responding projects were established or the numbers of projects which were begun in the past and have since gone out of existence. There is only limited information about changes which existing projects may have undergone since their points of origin.

¹ This represents a rate of response of 47%. (See Appendix D on Methods.)

² Only five projects in this region are included, due to various difficulties in identifying appropriate projects in the region and to a response rate markedly lower than in other regions (see Appendix D on Methods). The lack of a French language questionnaire undoubtedly influenced this rate. Consequently, no separate data are presented for Near East and North Asia projects.

Where a difference is noted — e.g., that new projects more frequently report a practice than old ones — at least two interpretations are possible:

1. That older projects are old-fashioned, have not changed through time and are still functioning as they did earlier, while newer projects are more ready to adopt innovations.
2. That older projects are "mature" and fully-developed, while newer projects are "immature" and will, through time, come to resemble the older ones more closely.

The data do not tell which of these is true; there is undoubtedly an element of truth in both. The likelihood is that the first explanation most often applies. However, statements about "trends" or changes through time must be made with caution.

Few projects have reached full development. Half of the projects report that they have not yet developed fully, according to their plans. One in six place their complete development after 1980. (One in four did not offer a date, so that even more than half may be still expanding.) Even many of the old projects (two-fifths of those set up before 1966) put their full development at some year after 1975.

One-third expect to terminate by late 1980's. While two-thirds of the projects expect to continue indefinitely, a significant minority expect to come to an end in the next 10-15 years. Among these are nearly half of those established since 1970 and six out of ten funded by their own governments, foreign governments or international agencies. These include eight of the ten research-oriented projects. This expectation is noteworthy because in a number of cases it will be seen that this group of projects is most likely to offer the widest range of services and to place the greatest emphasis on innovative practices.

Nearly half are supported chiefly by government funds. Most projects are funded through several sources. Here projects are classified in terms of their *chief* source of financial support. Nearly half receive the greatest part of their funds from governmental sources — about three-tenths from the government of the country in which they are located, or through bilateral or multilateral programs of other governments or international agencies. Less than a fifth find most of their funds by charging fees for service (or by selling drugs and supplies), and similar proportions are supported principally by foreign religious bodies or by other sources (including, particularly, foundations).

Though most projects stress service delivery, emphasis on training and research is frequent among newer, East Asian, and government-funded projects. Not all of the projects are concerned exclusively with health; about two out of five are equally involved in other areas of interest.

Every project delivers some health services, many engage in some training activities, and a smaller number conduct some kind of research. Over two-thirds have a *primary* service-delivery focus, while one in five are primarily active in training, and ten projects are chiefly research-oriented.

The training and research projects, though not numerous, constitute nearly half of those financed by foreign governments and a quarter of those funded by their own governments; over a third of projects established between 1971 and 1975; nearly a third of those in East Asia, but only about a sixth of those in Africa, established before 1971, or supported by fees or religious bodies.

Replication intended by half of projects, especially the newer, the government-funded, and the training-oriented. Just half of the projects indicate that they were designed to be replicated, though not all of these have specific plans. Among those so designed are one-half to two-thirds of the projects in East Asia and in Latin America; projects established since 1970; projects financed by their own or foreign governments; or projects oriented toward training or research.

Relations among project characteristics. The preceding paragraph reveals a most important point: that projects described as possessing one characteristic (e.g., intention of being replicated) are *to some extent* the same ones as described in connection with another (e.g., recency of establishment). That is, there is an overlapping of these categories. Consequently a difference between regions frequently reflects the relative ages of projects (or some other characteristic) rather than some specific regional quality.

Projects varying in key characteristics are compared to account for the range of answers to a question. It is manifestly important to know whether there are differences between projects located in one region compared to those in the others. Again, it is useful to know whether projects established more recently differ from older ones in program emphases. Such comparisons are made throughout the report, principally in terms of seven project characteristics.

1. *Period of Establishment* — through 1965, 1966-1970, and 1971-1975. Often the two earlier periods are combined because of the small number in the middle group, and reference is made to "older" and "newer" projects.
2. *Region* — East Asia, Latin America, and Africa. As noted above, the small number of projects in the Near East/North Asia group are omitted from comparisons.
3. *Chief Source of Funds* — The project's own government, a foreign government (or international agency), a foreign religious or church body, or fees collected from the people served. Some 30 projects funded by other sources are omitted from comparisons because of their heterogeneity. The small numbers of projects in each of the other groups (except those funded by their own governments) require caution in interpreting differences between categories.
4. *Primary Focus* — service delivery, training or research. Because of their small numbers, training and research projects are usually treated together.
5. *Whether designed as model to be replicated elsewhere* — yes or no.

In addition, two aspects of the *population served* by the projects are often used in comparison. They are:

1. *The percentage of the population which is rural* — less than 50, 50-85, more than 85. Because so few projects fall in the first category, frequently only two are referred to — the “more” or “most” rural (more than 85%) and the “less” rural (85 percent or less).
2. *The size of the project's target population* — in thousands of persons: 1-24; 25-99; 100-199; 1,000 or more. Frequently these are combined into the “smaller” (i.e., 1-99 thousand) and the “larger” (100 thousand or more).

Populations in project areas range from 1,000 to over 10 million. Slightly over half of the projects serve areas with populations of 100,000 or more inhabitants. Of these larger projects, about half have populations of 500,000 or more. On the smaller side, about a quarter of the projects are in areas of under 50,000 persons.

Of the projects in areas of 1 million or more residents, 28 are designed to serve either a whole nation or one or more whole states or provinces.

Project area populations are overwhelmingly rural, though some include large urban groups. Four out of ten projects are in areas with over 100,000 rural inhabitants. Over half have smaller numbers of rural residents in their areas.

Half the projects report no urban population; about three in ten have urban populations of under 100,000, while two out of ten are in areas with urban residents ranging upward from 100,000.

Of the 108 urban project areas, about half include *urban slums* ranging in size from one thousand to four and a half million residents. About 25 projects serve preponderantly urban slum communities.

In sum, fewer than a fifth of the projects serve areas that are less than half rural, while half of the projects are in areas that are over 85 percent rural in population.

Projects which are *research oriented* are outside of Latin America, are *most recently established* and tend to serve *highly rural areas*. Unexpectedly, projects funded by religious bodies tend to be somewhat less rural. The fact that the younger projects often serve more rural populations indicates increasing attention to these areas.

Target population is usually equivalent to whole population of area. Seven out of ten of the projects are committed to serving all persons in the areas in which they are located. Half of the remainder focus their attention on the health problems of women of childbearing age and children. A small number single out the poor (variously described) as the target of their programs.

Since the target population is so often synonymous with the whole area population,³ the size of the populations need not be repeated. However, it may be noted that larger target populations (of 100,000 or more) are found somewhat more often among the African, the older, and the less rural projects.

³ Actually, about two-thirds of the projects' target populations include all area residents; nearly a quarter include less than that, ranging down to ten percent of the total; and under a tenth of the projects have target populations of less than ten percent of the area's total population.

Total target populations to be served by projects probably close to 150 million persons. Of the 180 projects, five indicate target populations of over 10 million each, or a total of 72 million. The remaining projects report a total target population of just over 70 million. Taking into account 12 projects that did not supply this information, the total population which these projects are committed to serve is probably between 140 and 150 million persons.⁴

Half of projects provide most of the health services in their areas. Nearly one-half of the projects say that they provide two-thirds or more of the health services in the project area. Close to a quarter of the projects report that they supply between one and two-thirds, the remainder less than a third.

Most projects probably reach less than half of their target populations. A series of questions was asked concerning the numbers of persons receiving project health promotion services (health education, environmental sanitation, etc.) and receiving other project health services, as well as the numbers among these who were within the target population. Since about three projects in ten failed to supply part or all of the requested information, the proportions calculated are *minimum* percentages. Over 40 percent of the total projects report that less than half of the target populations received their services during 1975; about half as many claim that half or more of their target populations were served. Given the great sizes of target populations sometimes stipulated, reaching even half of them with services (other than half education and environmental sanitation) must be viewed as a considerable achievement.

Though communicable diseases are the chief cause of project area deaths, chronic and nutritional illnesses are also major sources of mortality. Nearly three-fifths of the projects name a communicable disease as the number one cause of death in their area, which accords with general knowledge concerning mortality in the less developed countries. About one-quarter list a chronic disease, accidental injuries, conditions related to childbirth, or ill-defined conditions such as "old age." More than one in ten point to malnutrition and starvation as the major cause of death in their area (e.g., anemia, scurvy, kwashiorkor, dehydration).

Infant mortality: an indicator of health status and socio-economic level. Infant mortality rates in the areas served by these projects, as is the case generally in the less developed countries, are quite high. Although a quarter of the projects did not supply this information, nearly two-fifths report rates of 100 or more deaths of infants under age one per 1,000 live births. Another fifth mention rates of 50-99. Fewer than one in ten have rates less than 20, which are comparable to those in the more developed countries. Infant mortality is commonly associated with a population's general socio-economic level. This may serve as a bridge to the following discussion on the cost of health services and the extent to which the projects' populations can afford the cost.

Most projects charge for some or all services. About four projects in ten provide some services free but exact a charge for other services. Another two in ten, though offering few or no free services, use a sliding scale of charges based on estimated ability to pay. One in ten has a fixed charge for most or all services. This leaves about a quarter of the projects which render all services without charge and a few which require a one-time registration fee, thereafter rendering all services free.

⁴ One nationwide project which estimates its target population as 75 million is omitted because it is essentially a training program rendering little direct health service.

System of charges related to source of funding. The *no-charge* system is found most often among projects funded by their own governments (about four in ten of these projects), in about half as many of the foreign-government-supported, in few of the religious-body-financed and, of course, in virtually none of those sustained by fees or charges for supplies. The *one-time registration fee* is reported almost entirely by those whose chief support is foreign governments. Both church- and fee-supported projects rely much more often on a *sliding scale* than do the government-funded. *Fixed charges* are most frequently used by projects relying on fees or profits from sales.

Size of charges for four routine services. Projects were asked how much they charged for each of four services:

- 1: A single dose of anti-malarial pill.
- 2: A routine adult immunization or injection.
- 3: A single treatment for a skin rash.
- 4: Suturing, dressing and bandaging a simple to moderate injury.

Half of the projects make no charge for each of the first two; three-eighths give the third or the fourth free. Most of the remaining projects make charges up to \$1.00.

For all four of these services, a third of the projects exact no charge; a tenth of them charge under \$0.50; a tenth, from \$0.50 to \$0.99; and the remainder, a total of \$1.00 or more.⁵

Payment for these charges is made in cash to almost nine-tenths of the projects; the remainder receive their payment in the form of labor, goods, or other services.

Few households can afford major medical costs and many cannot even afford to pay for minor costs. Responses to a series of questions about the ability of the community to pay for various medical costs were used for the construction of a Score of Affordability. Table C-1, page C-7 presents this data for five project characteristics.

Though the differences are not great, they are consistent with differences with respect to other characteristics, forms of service, etc, discussed below. These figures show that low Affordability Scores (i.e., extent of poverty) are associated more often with projects which are more recently established, in East Asia, in the most rural areas, funded by government agencies, or designed to be replicated. In general, only a small fraction of the people being served by these projects could afford to pay for even routine medical costs. It is not clear why people living in the areas of more recently established projects seem less able to pay for medical care, but this probably reflects the fact that younger projects tended to be in more rural areas, as are government supported projects.

⁵ About one in ten gave incomplete information.

Table C-1

**Proportions of Projects with Low Affordability
Score, by Selected Project Characteristics**

Characteristic		Percent of Projects with Low Affordability Score (i.e., extent of poverty)
Period in which established	Before 1971	18
	1971-1975	28
Region	Africa	15
	Latin America	22
	East Asia	31
% Rural	Up to 85%	17
	Over 85%	29
Source of Funds	Fees	9
	Religious	19
	Own Government	25
	Foreign Government	28
To be Replicated?	No	16
	Yes	29

APPENDIX D

METHODOLOGY

Introduction

The State of the Art Study, including the survey instruments, coding and analysis procedures, has generated considerable interest among public health workers who desire full and accurate information about their own projects as well as those in other places. No such tool previously existed. As a result, the American Public Health Association is in the process of developing a detailed monograph which will provide a model for field modification and use. The methodological descriptions presented in this summary will accordingly be kept brief.

The Identification of Projects for Study

With the preparation of a conceptual framework and a set of working definitions, as presented in Chapter I, the process of identifying suitable projects for study was initiated in 1975. It was quickly learned that no widescale effort of this type had been carried out before and that no convenient listing was available. The early process therefore consisted of making direct contacts with official and voluntary agencies which might support or have knowledge of field projects being supported in the less developed nations of the world. Agencies of the United Nations, the U.S. Government, foundations and religious groups were contacted. A number of prior APHA activities, including studies of voluntary health agencies, literature searches and personal working experiences of staff members assisted in this process. Interviews were conducted with experts, and informal relationships were established with a number of key field workers who served as correspondents. This entire process resulted in the identification of 1,158 health-related projects, of which 824 were deemed suitable for further study. Two-page Project Identification Sheets were prepared and mailed to the field, and 250 (33%) were returned. Only 235 contained sufficient data to be useful. This relatively low response rate reflected the general lack of information about the nature of these projects, incomplete addresses and names of possible respondents, language barriers, and so forth. An analysis of the respondents showed that there was an apparent over-representation of projects supported by religious organizations, and greater efforts were therefore made to identify other types of projects through official agencies. A total of 384 projects were located for possible inclusion in the Study in this manner. Projects felt to be suitable recipients of the questionnaire were mailed packets containing the questionnaire, cover letters, two black felt-tip pens to help insure legibility, and pre-addressed return post-cards which stated that the packets had been received and would be returned by a specified date.

Development and Testing of the Questionnaire

During the process of identifying potential recipients, a very preliminary draft of a questionnaire was developed. It soon became apparent that so many topics might be explored in reference to field health projects that it was necessary to select only those elements with high priority. This process was carried out with the cooperation of officials

representing both AID and the Office of International Health, Department of Health, Education and Welfare. A total of 70 topics were selected which served as the basis for the development of the final version of the questionnaire. This draft was field tested among 16 field workers with important information obtained regarding the instrument's understandability, the likelihood of securing appropriate responses to each question, and the willingness of workers to complete it. A search was also made for questionnaires which had been developed by others for similar purposes but, with few exceptions, little of value was located. The overall result was the modification of the final version into a shorter edition with a Spanish translation, an emphasis on innovations, and less stress on detailed project description. Opportunities to record innovative activities came in the form of requests for descriptions of activities which the respondents felt to be innovative and in the posing of questions on topics which the researchers felt likely to be innovative, such as the extent of community control and the training of physician assistants. In addition, during the analysis phase, responses were examined to identify innovations which were not identified as such by the respondents or the researchers by design. For the convenience of the respondents, the questions were grouped into nine sections and consisted of combinations of closed and open-ended questions.

Section A. Project Services

This is principally a list of various services (preceded by the question: "Does your project provide these services?"), such as nutrition services, family planning, maternal and child health, health education, and others, itemized in detail. In addition, there are items dealing with services provided in the home — by whom, with what kinds of kits or supplies, at what cost, etc. The last questions focus on the size of the population receiving any project service.

Section B. Staff, Volunteers and Other Health Workers

In this section the questionnaire asks about numbers and types of staff and the division among them of various types of tasks usually performed, in Western practice, only by physicians (i.e., delegation of functions). Further questions look at the use of volunteers, traditional health practitioners, traditional birth attendants (midwives), and persons with private business or professional activities.

Section C. Project Facilities

This section focuses on the numbers of facilities of various types operated by the project and innovations in their use.

Section D. Relations with Other Projects, Organizations or Agencies

The first part deals with relations between the project and governmental agencies, universities, voluntary associations, etc. The second asks about referral arrangements and practices.

Section E. Community Involvement

These questions concern the project's relations with community health committees or similar community representatives; particularly, with the degree of control exercised by community groups over decisions concerning project activities.

Section F. Project Management

A number of topics are covered in this section, including:

1. Centralization vs. decentralization of decision-making within the project.
2. Such financial matters as cost accounting, budgeting, and sources of funds.
3. Personnel management — supervision, training, staff development.

Section R. Information and Evaluation

Attention is given to kinds of information systematically gathered and the various uses to which it is put — for management information or other purposes. Questions are asked concerning methods of evaluating various aspects of the project; for example, questions dealing with quality assessment, types of data or techniques used for evaluation, and the perceived utility of evaluation as a management tool.

Section S. Innovation and Replication

This final section returns to the basic concern of the Study. It asks about possible innovations or changes in the project's basic philosophy or goals and innovations that seek to bridge the gap between the indigenous and the Western health care systems. It invites the respondent to describe in detail one or two recent innovations (if his project has made any), the need they were designed to meet, the reason for choosing *these* methods, and the results, both good and bad. The last questions deal with plans for replication of any aspect of the project and with factors influencing the *replicability* of the project.

Rather than risk embarrassing respondents by forcing them to indicate all activities in which they might be engaged but were not, it was stressed that there were no "right" or "wrong" answers but only different methods some projects use. When possible, respondents were allowed to indicate that they were interested but not presently active in certain areas. A small number of questions were introduced to permit checks of internal consistency.