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THE MEDEX PRIMARY HEALTH CARE PROJECT

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PREFACE

This evaluation was conducted as an end-of-project evaluation of a contract signed in 1978 with the University of Hawaii. The purpose of the evaluation was to document and assess services performed since the mid-project evaluation of January-February 1981. It was conducted by Alfred Haynes, President/Dean of the Drew Postgraduate Medical School, Los Angeles, California, and John H. Austin, Environmental Engineer, S&T/H/AID , Washington, D.C.

The evaluators wish to express their appreciation to Dr. Terence Rogers, Dean of the John A. Burns School of Medicine, Dr. Richard Smith and the entire staff of the Health Manpower Development Project for facilitating the evaluation in every way possible and making the assignment a real pleasure.

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EXECUTIVE SUMMARY

The Health Manpower Development Project, funded by the Agency for International Development since 1974, can be conceived as having three phases -- design, testing, and utilization. This evaluation deals largely with the last two years of the the contract which ends in June 1983. It assesses the design and testing phases of the project and examines the potential for widespread utilization.

The Health Manpower Development staff of the University of Hawaii has now completed the design and testing phases. They conceptualized a prototype three-tiered health care training delivery system and then designed prototype training materials for it. The mid-level health worker is the focal point of the prototype systems. These systems have been tested in three countries and proven to be suitable for adaptation and replication in widely different settings. The materials are unique and comprehensive. They represent one of the best primary care training resources available at the present time.

The prospects for utilization are excellent, and there is already significant interest. The challenge for the future is to exploit the investment to the maximum. This would mean continued AID technical support to assist with implementation to the development training capability strategically located around the world and to cultivate a technical assistance network and a network of users. During the utilization phase, the developers must seek marketing expertise and be responsive to potential users whether they need the complete system or simply specific components to complement their own system.

Evaluation of cost-effectiveness should be based on system operation rather than on the early adaptation phase and should be independently contracted.

Several lessons can be learned from this project which can enhance AID's effectiveness in promoting affordable health care in developing countries. Among them is the fact that systems-development is costly and time-consuming in the short run, but can be rewarding if the prototype permits easy adaptation and replication. Systems-development is wasteful if it is not followed by utilization phase. However, investment in utilization should depend upon whether or not the project has successfully met the goals set for it. It is also clear that to be maximally successful, AID Washington and the developers must achieve better working relationships and every effort should be made to facilitate better communication with the AID missions.

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The evaluation team made several recommendations for the future: (1) AID should continue to support the project to exploit the potential of the work already done; (2) AID should encourage AID-funded projects to use the system; (3) training centers should be developed; (4) technical assistance and user networks should be provided; and (5) plans should be made for research and for evaluation of cost-effectiveness at the appropriate time.

Through this project, AID has wisely developed, in collaboration with the University of Hawaii, a technology that has great promise for long-term institution-building in the health sector for Third World Countries. The work also holds great promise for strengthening existing projects. The competence and technology which have been developed under this contract should be exploited fully and rapidly to the benefit of the U.S. government as well as the developing countries of the world.

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INTRODUCTION

Background

The Health Manpower Development Project began under contract with the United States Agency for International Development (AID) in 1974. During the first two phases (1974-1978), the emphasis was on development of prototype materials which would enable developing countries to implement cost-effective primary health care systems. Using the MEDEX approach that the project director had developed for use in the United States, the mid-level health worker was to play a key role in a three-tiered system involving the physician, the mid-level health worker, and the community health worker.

During the third phase of the project (1978-83), the development of a prototype system was to be completed and tested in eight countries. As a result of the mid-term evaluation (1981),* certain observations and recommendations were made which were to affect the activities of the remaining two years of the project. This evaluation covers the two-year period since 1981.

Goals and Objectives of the Evaluation

The evaluation team was assigned two major goals. They were to document services performed under the contract, especially those performed since the mid-project evaluation; and to review contractor performance vis-a-vis the intent of the project as expressed in the log frame. To accomplish these goals, the team was to make three assessments.

1. How well did the contractor perform, both quantitatively and qualitatively?
2. Which technology was produced under the contract?
3. How can contract results contribute to AID programming in health and to international training and management in public health care?

*Frederick K. Simmons, et al. "The MEDEX Approach: An Evaluation of the work of the Health Manpower Development Staff of the University of Hawaii" Jan - Feb 1981. (Report of ADSS, AID/DSPE-C-0053, Assgn. No. 583063, AID Washington, D.C.)

Scope of Work

In order to achieve the state objectives, the evaluation team was directed to perform the following activities:

1. Collect pertinent information on elements of the contract in order to review contract outputs.
2. Provide an assessment of contractor performance. Self-evaluation, as well as external appraisals, may be a part of this assessment.
3. On the basis of the above, determine if all anticipated contract outputs were achieved.
4. Examine contract outputs and determine if the quality of such outputs is acceptable.
5. Review recent evaluations of countries in which the MEDEX system is being implemented. Based on this examination, assess technical assistance provided under the contract.

Issues To Be Addressed

In addition, the team was to address the following issues:

1. Were the recommendations of year three evaluation adopted by AID and the contractor? If not, why not?
2. What are the lessons learned, administratively and technically, from the contract which can be of use in similar projects?
3. Was the technical and administrative relationship to the host countries, missions, etc. productive?
4. One of the contract outputs was the development of a U.S. network. Has AID utilized this network? If not, why not?
5. What is the potential usefulness for the materials and approach? What are recommendations for future actions?

The Evaluation Process

The evaluation was conducted by two persons: one employed by S&T/H and an engineer by profession, the other, a physician

educator with several years of experience with the MEDEX approach. Both evaluators have had many years of experience in developing countries and with training system development in health related fields.

Prior to arrival on site, both members of the team reviewed documents made available from S&T/H. The most pertinent of these documents were the 1981 Mid-Term Evaluation, the Guyana Project Report, the Pakistan Report, the Lesotho Report and the briefing documents. An article by Dr. Richard Smith entitled "Primary Health Care -- Rhetoric or Reality" was also helpful. During the independent review of these documents, both members of the team identified specific questions and problem areas, especially those arising from the previous evaluation. This preparation for the site visit did a great deal to facilitate the process on site.

The physician (Haynes) arrived on Sunday afternoon, June 19 and began discussions that evening. He left on June 22. The engineer (Austin) arrived on June 20 and immediately joined the discussions. He left on June 25.

On site, the team met with staff members, sometimes individually and sometimes in a group. See Appendix M for a list of people with whom the team met.

In addition, the team reviewed all available documents in the 35 volume Primary Health Care Series (Appendix D). The following documents were not available in final form:

<u>Volume</u>	<u>Content</u>
3	Drugs and Medical Supplies System Workbook General Supplies Workbook Facilities and Equipment Maintenance Systems Workbook Transportation Systems Workbook
4	Communication System Workbook Personnel System Workbook Finance Systems Workbook Health Information System Workbook

- 5 District and National Planning and Management Workshop Manual
- 6 Training Process Manual: Curriculum Adaptation, Instructor Preparation, Program Management
- 7 Continuing Education Manual
- 8 Training Evaluation Manual
- 27 Student Text and Instructor's Manual - Supervising and Supporting Mid-Level Health Workers
- 28 Formulary
- 29 Diagnostic and Patient Care Guides
Patient Care Procedures
- 31 Community Health
- 34 Some Common Health Problems
Tuberculosis and Leprosy
First Aid
- 35 Community Learning Materials:
Health Problems in the Community
Caring for Your Child
Caring for Your Sick Child
Clean Home and Clean Community
Illustrations for Training Community Health Workers

Documents were reviewed at various stages of development so that the team could assess itself. Similarly country adaptations of the prototype were reviewed to see how the adaptation process was going. In addition, the team reviewed requests for the materials from various countries and organizations in order to assess the market potential. Before departure, the team met also with the Dean of the Medical School.

Through a rather fortunate coincidence, it was possible to meet with Dr. Walter Chin, Chief Medical Officer, Ministry of Health, Guyana, who was visiting Hawaii at the time of the evaluation. This direct contact with a principal of one of the

field projects permitted an opportunity to participate in a discussion of a report* which added another dimension to the assessment.

*Dennis Carlson and Michael Hamilton, "A midterm Evaluation Report of the Rural Health Systems Project of the Ministry of Health-Guyana", March - April 1983 (Ministry of Health, Georgetown, Guyana.)

II. THE EVALUATION

EVALUATION

Overview

The training delivery system developed under this contract must be understood before it can be fully appreciated. The most tangible output of the contract is the series of 35 volumes which can be used to train persons to provide primary care. This is in itself a monumental work -- the most comprehensive set of such materials available at this time. But to assess the project from this perspective alone is grossly to underestimate its value.

First of all, the development staff recognized that to train persons to work in a primary health care system, it was first necessary to conceptualize such a health care delivery system. The prototype was designed as a three-tiered system in which the mid-level health worker played a pivotal role. Based on extensive experience in places such as Micronesia and Thailand, the developers considered this the appropriate model in order to make care affordable for developing countries. There were several variations of this model. Whatever the model, the training of health workers should be relevant to that health care system in which those persons must subsequently work.

The next task was to design an educational system which would prepare persons to work in the setting conceptualized, and the developers chose to emphasize competency-based training. The two models conceptualized interfaced with each other (the delivery and training systems). The developers then tested the models in three countries (one in South America, one in Asia, and one in Africa) to determine if the models could be reasonably and easily adapted to a wide spectrum of developing countries. This testing effort is the process under evaluation. If the test is shown to be successful, the next logical phase will be the operational phase in which the prototype will be widely applied with relatively minor modifications to suit existing conditions. The real significance of this project and the justification for its cost is its ability to be replicated.

There are three major steps in the process -- development, testing, and utilization. This section of the report will document the performance since the last evaluation, evaluate the work performed in development and testing, and assess the prospects for the operational phase.

Performance Since the Last Evaluation

The major concern of the 1981 evaluation was that most potential users seemed to think that they had to use the system in its entirety or not at all. The first volume of the series, "The MEDEX Primary Health Care Series - An Overview", (Appendix A) explains the versatility of the system in that it can be adapted in total as well as in part, as program needs dictate. There are four major application areas:

- Systems Development
- Mid-Level Healthworker Training
- Operations Management
- Community Health Worker Training

Other areas of application can also be used depending on program needs (Appendix B). The project staff adequately addressed the need for flexibility. No doubt further applications of the system will suggest other possible adaptations.

Two brochures have been produced to inform potential users of the materials and systems.

- "MEDEX -- facing the challenge of health and development" (Appendix C)
- "The MEDEX Primary Health Care Series" (Appendix D)

It was hoped that a delivery system could be developed that would be flexible enough and sensitive to local conditions so that local primary health care personnel could use it under the constraints they were subjected to. To maximize adaptability, the project used a development/adaptation process which made use of experiences in five areas of the developing world. These include projects in Micronesia, Thailand, Guyana, Pakistan, and Lesotho (Appendix E). Health Manpower Development staff worked closely with the staff of the projects in these countries to encourage flexibility in application and sensitivity to local conditions.

It is too early to say if the 35-volume series coming off the press at the time of the evaluation will have the desired flexibility and sensitivity. The evaluators were unable to visit programs in the field and determine first hand the suitability of the prototype materials being used in the on-going programs in Guyana and Lesotho. However, three recent evaluations in

Pakistan*, Guyana**, and Lesotho*** indicate that the materials are proving to be suitable in varied situations. Also included in these evaluations are suggestions to improve the adaptation process. For example, in some cases the language should be simplified, in others the slides need modification. These suggestions should be taken into account in future efforts to use the system and materials. The use of additional slides has already been abandoned.

Developing the capability of the various institutions that would implement the primary health care systems was one of the goals of the project. Although there had been concern that this work had not been given enough attention, considerable effort was placed on it during the later stages of the project.

New materials were added to the series. (Appendix F). These additional materials should greatly increase potential users' ability to design, implement and carry out those aspects of the systems that are selected.

Goal 1 of the scope of work (See page 3) calls for documentation of the services performed under the contract. Services required of the contractor are delineated in the contract (Appendix G). Services performed have been adequately documented in the series of quarterly reports (numbers 11 to 20) for the period January 1981 through June 1983.

Appendix I contains a status report of materials production and services rendered at the time of the evaluation. A close comparison of the contract and amendment in regard to numbers and types of services and materials required versus types eventually given indicates some discrepancies. Careful review of quarterly reports and correspondence between the contractor and S&T/H during the interval since the last evaluation indicates that all the deviations have been negotiated and agreed upon by representatives of S&T/H.

*Frank W. Mount, James W. Martin, and James P. Carter, "Report of the Basic Health Services Project Evaluation Team", Jan. 1981 Islamabad, Pakistan.

**Carlson and Hamilton, 1983, op. cit.

***John S. Alden, Theresa A. Lukas, and W. Delano Meriwether. "An Evaluation of the Lesotho Rural Health Development (LRHD) Project," April 1982.

Goal 2 of the scope of work (See page 4) calls for a comparison of contractor performance vis-a-vis the log frame (Appendix J). The program or sector goal calls for an evaluation of the system five years after implementation. Since the time interval has not elapsed as yet, it will be necessary for AID to implement this at a later date. AID should engage a consultant who has not been involved in the development and implementation of the project to design an evaluation system, including all evaluation instruments and all procedures for training the evaluators. This evaluation should be based on indicators such as the following:

- Numbers of AID missions, private voluntary organizations, and international organizations seeking information, adapting or adopting the MEDEX approach, and utilizing this approach on a long term basis in primary health care programs.
- Translation of materials into other languages.
- The quantity and rate of outside funds (i.e., non-project funds) from AID missions, private voluntary organizations, international agencies, etc. being supplied for services from the project.
- The improvement in quality of primary health care services in systems where the MEDEX approach has been instituted.

The consultant selected to do this work must train both personnel in less-developed countries and external evaluators in how to conduct the evaluation. In addition, an information storage and retrieval system should be established by the contractor immediately so as to collect and analyze the data, during the five year implementation period.

The project originally called for the establishment of eight operational systems. Only three were established (Pakistan, Guyana, and Lesotho). This reduction was approved by AID. Details of contractor assistance, field visits, workshops, seminars, supplying of materials, etc. are contained in trip reports and quarterly reports.

Eight major outputs are called for the log frame. The actual figures for each of these outputs is as follows:

<u>Outputs</u>	<u>Number</u>
1a. Reconnaissance visits	21

<u>Outputs</u>	<u>Numbers</u>
b. Primary health care and MEDEX manpower training seminars	18
c. Curriculum adaptation workshops	3
d. Teacher training workshops	3
e. Preceptor and development workshops	1
f. Management workshops for logistic support	3
g. Continuing education workshops	6
h. Evaluation workshops	2
2. Curriculum design and training of mid-level health workers training modules (Volumes 6, 8, 9-24, 28, 29, 31)*	27
3. Community health workers training modules (Volumes 32, 33, 34, 35)	9
4. Management training modules (Volumes 2, 3, 4, 5, 25, 26, 27, 30)	14
5. Continuing education	
a. Training modules (Volumes 7 & 27)	2
b. Conferences	0
6. Less-developed country MEDEX programs	
a. Linked in a cooperative network	2
b. Conferences	1
7. US institutions	
a. Linked in consortium	2
b. Meetings for network	5
c. Other meetings	77

*Most volumes contain more than one module.

8.	Technical assistance	
a.	AID regional bureaus	5
b.	AID missions	14
c.	Less-developed country governments	14
d.	Miscellaneous	2

In January 1981 the evaluation group recommended several changes in the contract. These were considered by AID and an amendment prepared. However this was not signed until February 10, 1982, (Appendix H). This amendment stated that the contractor would provide technical assistance "for selected component parts...as requested by AID Missions...(and) in response to LDC...requests."

Three requests for technical assistance were received by the contractor. The first was in March 1981. Dr. Melvin Thorne (NE Bureau) asked the contractor to provide development technical assistance to the Yemen government during the month of March. Because of prior commitments it was not possible for the contractor to reassign a person to carry this out in March. The contractor's offer of beginning this assistance in mid April was not acceptable to the NE Bureau. Thus, the contractor was unable to respond to this request. The second request came in December 1981. AID/Pakistan requested management technical assistance. The contractor sent Ernest Petrich to Islamabad for four weeks to carry out the technical assistance effort. In January 1982 AID/India requested the services of Joyce Lyons of the contractor's staff. Since Dr. Lyons' major commitment was to the writing of modules, it was not possible to send her at that time. Dr. Lyons left the project on April 23, 1982. Since AID/India requested Dr. Lyons specifically, it was not possible to respond to this request.

The amendment also stated that the contractor should "produce 200 sets of training modules and related teaching materials, etc., which have approval of the cognizant technical office before final production." A letter from White to King of December 3, 1982, stated:

It was possible to obtain a much larger quantity of each module without increasing total cost. Based upon these factors (demand and cost) we have increased our recent print order to 1,000 copies of each module. This has been done at little increase in total cost and has resulted in a drastic reduction in per unit cost. We anticipate that there are sufficient funds in our contract to print all volumes in the series at this higher quantity.

Later in his March 10, 1983, letter to King, White stated, "we have increased the printing to 2,000 copies of each. We plan to print a minimum of 2,000 copies of all remaining modules." The changes were made with full knowledge of S&T/H.

Finally, the amendment required of the contractor "approval of the cognizant technical officer before final production." The contractor initiated the requisite council and approval of S&T/H in a letter from Bomgaars to Alden of October 16, 1980: "we would be pleased to have U.S.A.I.D. health officers and others spend time in our office reviewing any of the materials we are developing. They are best reviewed within the context of a primary health care system." Examples of seeking council and approval are contained in a series of letters from White to King, of the following dates:

December 28, 1982	March 10, 1982
April 22, 1982	July 23, 1982
May 16, 1983	July 29, 1982
June 2, 1983	August 12, 1983
June 3, 1983	November 8, 1982

The staff that the contractor had available to provide the above services and produce the training modules is given in Appendix K.

Systems Development

The design of any health care system, it is necessary to consider the people who will be served and the kind of problems they will present; the resources available, including staff, finances, facilities, supplies and equipment; how the resources will be managed; the kinds of services which will be provided (both curative and preventive); the environment in which the system will operate; and the outcomes of care to be expected. The staff of this project has considered these aspects and assembled the essentials in one package, a unique accomplishment reflecting the depth of experience drawn upon.

The design of the training delivery system for primary health care is also outstanding. There is heavy emphasis on the mid-level health worker, but this is by design. The community health worker modules are especially good because they can be effectively used even if the workers are

illiterate. The series could be enhanced by a small monograph for the physician on a somewhat higher level, but, generally speaking, the curriculum and the whole educational system is of a high quality.

The systems development materials are of special value because they permit a health administrator to see what structures and processes must be in place for a health care system to be effective. In the United States, primary health care systems fail most frequently because the support mechanism, not medical care, is inadequate. The same is true in developing countries where equipment maintenance or the availability of drug supplies and transportation can make a big difference between success and failure. A person who is given the responsibility for providing care but who is not supplied with information about support mechanisms, is being asked to make bricks without straw. The reference manuals, especially Volume 30 on health center operations, are especially helpful.

Despite the excellent design of the systems, some questions have been raised. First, there was apparently a stronger insistence on national implementation than would appear to be necessary. What is important is that the health care be considered in its totality, using a systematic rather than a categorical approach. If this can be done only at a national level, then a national approach would be a necessary condition for success. However, this is not always the case. It is the evaluators' impression that the staff must now assume a more flexible approach. Second, the prototype has been criticized in the past for not adequately balancing curative and preventive care. This criticism has been taken care of. Several of the modules are now preventive in orientation (Volumes 9, 10, 21, 22, 23 and 24) and prevention is incorporated into the manuals which originally appeared to be only curative. In the future, adaptations of the prototype might minimize this problem by using different titles, e.g., Volume 18 might be entitled, "The Prevention and Treatment of Infectious Diseases."

Systems Testing

The way the prototype model is being tested permits the developers to determine if it will work under certain specified conditions and to identify the requisites of success. The developers have assumed that three conditions are absolutely necessary for success. There must be commitment to a systems approach; certain resources must be available; and the resources must be appropriately managed. The staff felt that, at least in one case (the Cameroons), the test did not proceed

because the commitment was not present or was not at a high enough level. The other test sites demonstrated that with assistance, the prototype could be effectively adapted. The resultant modification of the prototype could in turn be even more easily adapted in other countries. The adaptation process was different in the three countries and was apparently easiest in Lesotho, probably due to the project staff's experience in earlier efforts.

The adaptations may not be improvements in all cases. Sometimes the host country may not be sufficiently oriented to the concept of competency-based training and the other institutional development principles which underlie the prototype. In some places, a health care system is not in place, what is necessary is a major change rather than merely an adaptation. Adaptation involves more than a translation of words but may involve in assimilation of new concepts and a substantial effort in institutional development.

In any case, the testing process has adequately demonstrated that the prototype can be adapted to a variety of different settings. However, it must be recognized at the outset that the process of adaptation will itself require time. Time has to be allowed for change in the health care system as well as in the training system -- it will not happen merely with a rewrite or a translation of modules. While questions have been raised about cost-effectiveness. The evaluators feel that it is totally inappropriate to try to measure cost-effectiveness during the testing stage. Development and testing costs are usually much higher than operational costs. Cost-effectiveness should be measured during the operational phase by an independent team, rather than by the developers.

Although some personnel problems were noted in the previous evaluation, the countries where tests were performed appear to be quite satisfied. There will always be some personnel problems in a project of this kind. Apparently personnel were not given an adequate orientation to the thinking of the developers until later in the stage of testing.

The Operational Phase

Development and testing have meaning only if there is an operational phase. It is in this phase that AID hopes to receive the return on its investment in previous phases. It is, therefore, appropriate to comment on the future of this project. So far this project has done an adequate job of designing and testing a model system for delivering desperately

needed primary health care throughout the world. This work will be wasted if the project does not now shift into the operational phase. For best results, some "marketing" will have to be done. A link will have to be established between those who need the service and those who have the service to offer. Developers will have to shift thinking from the product and the process to the users. It would be a serious mistake to insist on an all-or-none approach, for the service developed can be used in many ways depending on what users want. Marketing materials and techniques will have to be developed, and courses and training capability should be part of the process of dissemination.

If the marketing is successful, there may be another problem. Without help, developers will not be able to meet the demand for technical assistance. Based on the requests which have been received so far (without a serious marketing effort), neither AID or the development staff (Appendix L) has accurately gauged the response. Unless appropriate personnel can be identified for technical assistance, the potential for the project will not be realized. The network can probably be most useful in this phase.

ISSUES AND RECOMMENDATIONS

Issue I: Were the Recommendations Carried Out?

Some of the recommendations concerned the ongoing project and others post-project activities. Most of the post-project recommendations are still valid today. These will be addressed later (see page 21). Three of the five recommendations were carried out:

1. The prototype materials were refined.
2. Technical assistance was provided to countries where the materials were in use.
3. The Health Manpower Development Project has been the focal point of a continuing network.

Two are still pending:

4. A training center in Hawaii has not yet been established.
5. The MEDEX staff has been collecting data, but there is still a need for independent evaluative research.

It is possible that the problem of relationships between physician, mid-level health workers, and community health workers will still pose a problem for some. In the testing phase, the developers solved the problem by meeting with the physicians in the country. This may be the best way of dealing with the problem, that is, on a personal level, but it may be of value to address this problem more generally in the material or in a separate monograph. The relationships should certainly be clear in the system before the training begins.

The strengthening of the field program management appears to have been a direct consequence of providing for better orientation before field assignment. It was fortunate that the year-three evaluation reduced the number of test countries from eight to three. The developers and S&T/H had underestimated the difficulties of establishing demonstration sites. Relationships between Washington office of AID, the missions, and the development staff still appear to be less than ideal. This was not as serious a problem during the development and testing phases as it will be if it continues during the operational phase. If AID is unwilling to maximize the enormous potential of its investment, it runs the risk of losing the benefits of what is now an effective tool for achieving its objectives in primary health care in developing countries.

The developers appear now to be more willing and anxious to disseminate material than at an earlier stage before the material had been tested. This is understandable. The materials are now virtually in final form and are ready for use. No further refinements appear to be necessary, although there will be numerous country adaptations.

There have been no international conferences since the year three evaluation, but periodic conferences of users are envisioned for the future.

Issue 2: Lessons Learned from the Contract

Several lessons can be gained from the experience of this project. As most development projects have shown, system development is costly and time-consuming with a number of unpredictable variables. Both AID and the developers underestimated the magnitude of the development task. The developers had to learn the importance of expert editing. (Even materials produced by health care specialists who had invested so much of themselves in the generation of ideas needed the hand of an editor.) Developers had to get into the task of materials production in a way not anticipated. These lessons should be borne in mind in the operational phase, and marketing expertise should be carefully sought.

The responsibility for development in a project of this kind cannot be shared. There can only be one development team. The U.S. network sounded like a good idea, but it did not really work well. It might have worked better if the goals set for it had been thought out more carefully in advance. For members of the network, commitment to competency-based training was a necessary but not a sufficient requirement. Also, previous experience in developing countries was essential. The time for the network is now, in the operational phase.

The conditions for success in operation should now be clear from the experience in testing. For the training to be useful, there must be commitment at a high level to a systematic approach to delivery of care, and certain resources for care must be available. Management is essential, and it must be learned; otherwise the efforts to provide permanent care will be compromised.

Prototype system development is much more expensive in the short term than it is in the long term. It is also certainly better than financing pieces of a system individually. Now it is possible to adapt parts or the whole, as the circumstances demand. Cooperation between AID Washington, the developers,

and the AID missions is necessary for maximum success. When this does not exist, success may still be achieved but at greater cost in time and money.

Issue 3: Technical and Administrative Relationships

Technical and administrative relationships were not as productive as they might have been because there was apparently a lack of understanding and inadequate communication between the developers, the Washington offices of AID, and the AID missions. One gets the impression that there may not be a concensus concerning the magnitude of the task or the fact that governments have been grappling with these kinds of problems in an effort to provide primary care. These facts are thoroughly obvious to persons who are in close contact with work in the field. There are indeed numerous training manuals, but there is no training system carefully designed to fit a well conceptualized health care delivery system. There is a tremendous job of marketing ahead which will have to involve AID/Washington, the international agencies, ministries of health in countries where the system was tested, as well as the AID missions.

The relationships between the developers and the host countries appear to have been satisfactory except for a temporary problem in Pakistan due to circumstances beyond the control of the project. The issue of cooperation remains and will require special efforts on the part of all involved.

Issue 4: Was the Network Utilized?

The network idea was probably premature. It certainly was not used to the extent anticipated. Two kinds of networks are seen for the future -- a technical assistance network and a network of users. Both will be useful in different ways. The technical assistance network is seen as a way of meeting the demands for assistance in different parts of the world; the network of users is an effective way of enhancing the capabilities of each user and serves to facilitate the rapid dissemination of ideas and practices.

Issue 5; Potential Usefulness and Recommendations

The evaluators feel that the system and modules have great potential in giving guidance to primary health care programs being developed and implemented in less developed countries. The ultimate measure of this usefulness is the adaptation of

the system to satisfy local needs. Thus, in reality the evaluation of this long development process is just beginning. As indicated above, it is important for AID to establish land evaluation mechanism, including methodologies, data collection, storage and retrieval, and analysis. This must go hand in hand with the next phase of the project, but should be carried out by an independent contractor. The following recommendations should be given serious consideration by AID in its efforts to maximize the application of its investment in this project:

- AID should look for ways to use the existing products. One way to do this is for AID to suggest that the system and materials be considered for use in AID-funded projects. This will bring a fast return on the investment. The use of the system and material could be "marketed" by AID through its various missions.
- Now that the tools are available, AID should place a greater emphasis on primary health care. Interest has been stimulated in primary health care throughout the world, but there has been a lack of technological know-how necessary to achieve the desired effect. Now that expertise has been developed and documented in this project, AID needs to give primary health care high priority among its programs.
- Marketing expertise (not salesmanship) will be necessary during this phase and it must be developed soon. MEDEX must be ready to meet the demand, either itself or by the use of the technical assistance network. Technical assistance will be necessary to facilitate adaptation. There must be an effective mechanism to bring together those who have the means and the know-how to meet these needs. Responsiveness to AID regional bureaus and missions, private voluntary organizations, international agencies, etc. is a must, and the contractor must make responsiveness its highest priority.
- The network of users should be encouraged and supported. The developers must shift gears to respond to the needs of users rather than to defend their own ideas. Flexibility in application must be a primary tenet on the part of the contractor.
- To facilitate the dissemination of ideas, training capability should be developed not only in Hawaii but also in other strategic places.

- Projects around the world should provide opportunities for the inclusion of research in primary health care.
- The evaluation of country systems should begin when the systems have become operational rather than during the stage of initial adaptation. While some evaluation may be done by the developers, an evaluation done by an independent group would carry far more weight.
- The developers should vigorously explore the use of the series by nursing schools and other health training organizations.
- AID/Washington and the developers must achieve better working relationships. Every effort should be made to facilitate better communication with the missions on this matter.
- Procedures to improve better working relationships must be foremost in the initial implementation of the next effort.
- A module should be developed to indicate to the physician just what role he/she must play in the implementation of this system.
- During the adaptation process consideration should be given to using module titles which will clearly indicate their strong preventive approach.
- Measures of cost effectiveness should be developed and data collection storage and retrieval systems established for each application of the process. This should be done whether a small aspect or the total system is included in the application.
- The previously established network and its purposes should be re-evaluated and procedures developed to use it to implement the upcoming efforts.

In collaboration with the University of Hawaii, AID has wisely developed a project that has great promise for long-term institution building in the health sector for Third World countries. The work holds great promise also for strengthening ongoing efforts. The competence and technology which has been developed under this contract should be exploited fully and rapidly to the benefit of the U.S. government as well as the developing countries.

In recent years the United States has made great strides in the area of primary health care. Expanding primary health care services to improve the health status of millions in the developing world is still a great challenge. This is the challenge the project is trying to meet. The benefit to the world outweighs the cost to AID.

APPENDICES

- Appendix A: The MEDEX Primary Health Care Series - An Overview
- Appendix B: Chart Correlating HMDS Materials with Specific Components of PHC Development
- Appendix C: MEDEX - facing the challenge of health and development.
- Appendix D: The MEDEX Primary Health Care Series.
- Appendix E: The Development of Health Training and Adaptation Materials for MLNW and CHW.
- Appendix F: Operations Management for Primary Health Care
- Appendix G: Contract: MEDEX, Phase III, Primary Health Care Systems.
- Appendix H: Contract Amendment: MEDEX, Phase III (February 10, 1982).
- Appendix I: MEDEX Phase III Project status: Summary of Activities for Quarter 20, April - June 1983.
- Appendix J: MEDEX: Logical Framework.
- Appendix K: Health Manpower Development Staff, University of Hawaii.
- Appendix L: Requests for MEDEX Services
- Appendix M: List of People Interviewed

APPENDIX A

**The MEDEX Primary Health Care Series:
An Overview**

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**THE MEDEX
PRIMARY HEALTH CARE
SERIES:
An Overview**

Best Available Document

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**HEALTH MANPOWER DEVELOPMENT STAFF
John A. Burns School of Medicine
University of Hawaii, Honolulu, USA**

To Dr. Terence A. Rogers, dean of the John A. Burns School of Medicine at the University of Hawaii. A man of vision, concern, trust, and competence, he has been the solid and unfailing support needed to initiate and complete this work. He is a colleague committed to the basic tenets of primary health care, and he expresses that commitment with relevant action.

Any parts of this book may be copied or reproduced for non-commercial purposes without permission from the publisher. For any reproduction with commercial ends, permission must first be obtained from the Health Manpower Development Staff, John A. Burns School of Medicine, University of Hawaii, 1960 East-West Road, Honolulu, Hawaii 96822.

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Two people had impact on MEDEX far beyond their appreciation of their importance to the work. George Fargo gave us concepts and realities associated with his wisdom in education and training. And Satoru Izutsu gave us courage, criticism, and help in immeasurable forms from the beginning of the MEDEX effort in Micronesia.

Consultants who came to Hawaii and made noteworthy contributions to this work include Carroll Berhorst, Charles Boelen, Benjamin Essex, N.R.E. Fendall, J.P. Habitch, Antonio Navarro, Symon Satow, and Ken Tull. For help in Canada, Hawaii, and Cameroon, we wish to thank Yolande Mousseau-Gershman. For guidance and encouragement, we cannot overlook James Banta, Daniel Flahault, and Paul Ehrlich.

This work and its documentation would not have been possible without the contributions of thousands of involved health personnel who strongly believe that accessibility to primary health care is possible for the majority of the world's population. The major input into this comprehensive work came from health professionals in collaborating countries in Africa, Asia, South America, and the South Pacific. We are unable to list here all those who made substantial contributions. However, some of their names are listed in the front of this volume, along with the names of The MEDEX Group who saw this task through to the finish.

Special thanks goes to the Ministry of Health, nongovernmental organizations, and the Nurse Clinicians in Lesotho; the medex and MEDEX Program staff in the Ministry of Health in Guyana; the health technicians and staffs of Pakistan's Basic Health Services program in Islamabad, Baluchistan, NWF Province, Punjab, and Sind; the Lampang Rural Health Project in Thailand; and the medex and MFDEX/Micronesia staff in the former Trust Territory of the Pacific Islands. It is important to acknowledge contributions in many forms by the field staffs of WHO, UNICEF, and numerous nongovernmental organizations in the above countries.

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For most of us, there can be no higher gratification than seeing this part of the job completed and the Series used to promote the well-being of our fellow man. We share the belief with all those who have contributed to this endeavor that primary health care offers the best opportunity for improving human health and that primary health care development must move forward over the coming decades if we are to make the most of this opportunity.

RICHARD A. SMITH, M.D., M.P.H.

The MEDEX Primary Health Care Series: An Overview

The MEDEX Primary Health Care Series has evolved from experiences in primary health care in twenty-two countries. Most of the development and field trials of this technology for primary health care occurred in collaborative efforts between The MEDEX Group and the governments of Micronesia, Thailand, Pakistan, Guyana, and Lesotho. Recognizing that there are many strategies to train manpower and extend health services, the Series has distilled worldwide experiences in primary health care into a readable, understandable, and useful resource. The Series has put the most important aspects of developing or strengthening the delivery of primary health care services into a single, consistent, straightforward, and easily adapted prototype format. The result is a practical training and management tool for primary health care.

Planners, administrators, and trainers can use this Series to organize primary health care efforts in a way that is easily understood by all personnel in the system, no matter what their function. Or, the Series can be used as a resource to strengthen present categorical or comprehensive health activities. The Chart Correlating MEDEX Materials with Specific Components of Primary Health Care Development shows how parts of the thirty-five volume Series can be used together as a total systems approach to primary health care, or as separate planning, training, and management components to meet specific local needs.

Ministries of health, non-governmental organizations, and international institutions will find The MEDEX Primary Health Care Series a compendium of field-tested primary health care methods and materials. The Series can be useful in organizing and synchronizing primary health care efforts within an organization, a country, or a primary health care program with two or more collaborators.

O V E R V I E W

The primary health care movement promotes active community participation in health care, accessibility to essential health services, and the development of the non-health sectors which affect the well-being of populations. The MEDEX Group supports this broad perspective. The MEDEX Primary Health Care Series focuses on the effective delivery of essential health services with a strong community orientation.

The MEDEX approach and materials for primary health care development are contained in thirty-five volumes which include modules, manuals, and workbooks. Ministry of health officials in Micronesia, Thailand, Guyana, Pakistan, and Lesotho, collaborating with The MEDEX Group, have adapted and used increasingly refined versions of these materials. The published materials incorporate lessons learned in those five countries and primary health care program experiences in seventeen other developing nations.*

The Series stresses the training of middle level health personnel as trainers and supervisors as well as providers of health services. The Series also places importance on community health workers and on strengthening the associated management systems needed to support the effective delivery of primary health care services at the local level.

The MEDEX approach to primary health care development emphasizes strengthening the infrastructure in which health workers will work upon completion of their training. For example, mid-level health workers provide a clearly designated and easily accessible source of support and guidance for community health workers by serving as their trainers and supervisors. This approach avoids the serious problems associated with training community health workers as an appendage to health care, by including them as an integrated part of the overall health system.

The MEDEX Primary Health Care Series uses a competency-based approach to training as opposed to a theory-based approach. The competency-based training curriculum is problem-oriented and therefore includes only that information essential to training the worker to do his job. Competency-based training uses locally appropriate training materials and active learning methods such as demonstrations and practical field work to teach skills. Skills development is the primary focus of competency-based training. By

* Afghanistan, Belize, Cameroon, China, Colombia, Ethiopia, Gambia, India, Indonesia, Jamaica, Liberia, Nepal, Nicaragua, Senegal, Sudan, Tanzania, and Venezuela

O V E R V I E W

focusing learning activities on tasks which are most important in helping people improve and safeguard their health, training time is reduced and the training effort is made more efficient.

The MEDEX approaches and materials are designed to be applied together as a system for developing or strengthening national primary health care programs. Major emphasis is placed on the interrelatedness and interdependency of each operational and manpower level of the primary health care system. However, many parts of the approaches and materials can be used separately. When parts of these materials are used separately, the users should consider development of other parts of the primary health care system. For example, a program which elects to use the materials related to training mid-level or community-level health workers should do so only if it already has, or is in the process of developing, effective management support for those workers. See Chart 1.

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Chart 1. Chart Correlating MEDEX Materials with Specific Components of Primary Health Care Development

Best Available Document

If your interests are in these specific components of PHC development,

then MEDEX MLHW and CHW training materials of use to you will include those marked (✓)

	1. The MEDEX Primary Health Care Series An Overview	SYSTEMS DEVELOPMENT MATERIALS					MID-LEVEL HEALTH WORKER TRAINING MATERIALS					Basic Clinical Knowledge and Skills Modules								
Comprehensive National/Regional PHC Development	<input checked="" type="checkbox"/>																			
Comprehensive District/Local PHC Development	<input checked="" type="checkbox"/>																			
Working with Communities	<input checked="" type="checkbox"/>																			
Training PHC Trainers	<input checked="" type="checkbox"/>																			
Training PHC Service Providers (Training MLHWs and CHWs and orienting doctors and nurses)	<input checked="" type="checkbox"/>																			
Training PHC Administrators and Management Specialists	<input checked="" type="checkbox"/>																			
Training and Orienting PHC Planners, Evaluation Specialists	<input checked="" type="checkbox"/>																			
Training and Orienting Senior Officials	<input checked="" type="checkbox"/>																			
Training and Orienting Technical Advisors	<input checked="" type="checkbox"/>																			
Training and Orienting International Agency Staff	<input checked="" type="checkbox"/>																			
Strengthening Organization and Functioning of PHC Delivery Systems	<input checked="" type="checkbox"/>																			
Strengthening PHC Planning and Evaluation System	<input checked="" type="checkbox"/>																			
Strengthening Specific PHC Management Support Systems																				
Drugs and Medical Supplies	<input checked="" type="checkbox"/>																			
General Supplies	<input checked="" type="checkbox"/>																			
Facilities and Equipment Maintenance	<input checked="" type="checkbox"/>																			
Transportation	<input checked="" type="checkbox"/>																			
Communication	<input checked="" type="checkbox"/>																			
Personnel	<input checked="" type="checkbox"/>																			
Finance	<input checked="" type="checkbox"/>																			
Health Information	<input checked="" type="checkbox"/>																			
Strengthening Specific PHC Program Areas																				
Immunization	<input checked="" type="checkbox"/>																			
MCH	<input checked="" type="checkbox"/>																			
Nutrition	<input checked="" type="checkbox"/>																			
Environmental Health	<input checked="" type="checkbox"/>																			
Child Spacing	<input checked="" type="checkbox"/>																			
Oral Rehabilitation	<input checked="" type="checkbox"/>																			
Providing Community Development Services (Linkages)																				
Education	<input checked="" type="checkbox"/>																			
Agriculture	<input checked="" type="checkbox"/>																			
Self-Reliance	<input checked="" type="checkbox"/>																			

O V E R V I E W

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Characteristics Assumed in

The organization of primary health care services varies greatly in the five countries which have used MEDEX materials. Similar variations are expected in countries which will adapt and use the materials in the future. In writing The MEDEX Primary Health Care Series, assumptions have been made about primary health care organization and the physical working environment of personnel to be trained with the materials. Some of these assumptions are shown below.

Chart 2. Characteristics of the Primary Health Care System Assumed

	Service Area and	
	Community 200 - 1,000	Sub-District 5,000 - 20,000
FACILITIES AND EQUIPMENT	Room in home or small health post	Health center with: 2 to 4 rooms 2 to 3 overnight beds No laboratory Refrigerator Safe water supply Latrine
DRUGS AND SUPPLIES	Approximately 20 drug and supply items	Approximately 100 drugs and supplies, including IVs
PERSONNEL	CHWs	1 MLHW and 2 to 3 additional health workers
SUPERVISION	MLHW	Supervisory MLHW and district health officer
WORK SCHEDULE	Part time in community	MLHW in the health center 6 half days per week and in the community 4 half days per week
REFERRAL AND TRANSFER TIME	To MLHW: 1 - 2 hours	To hospital: 6 - 12 hours
TRANSPORTATION	Foot and bicycle	Bicycle or motor scooter Community means: taxi, bus, truck, boat, animal
COMMUNICATIONS	Messenger Postal service	Messenger Community means: telegraph, telephone, radio, postal service

Development of the Series

These assumptions in no way limit the use of the materials to the system described. They only point out that in situations where a given country's primary health care system varies significantly from the characteristics on the chart, special attention should be given to adapting the materials to those conditions.

in the Development of the MEDEX Primary Health Care Series

Population Base	
	District 100,000 +
District hospital with: 25 to 100 beds Laboratory and transfusion capability Operating room 24-hour emergency services X-ray services Electricity Refrigeration	District health office
Drugs and supplies for a hospital	Drugs and supplies for health centers and CHWs
1 to 5 physicians Support staff	District health officer (MD) Supervisory MLHW Additional PHC workers
Daily outpatient departments	Supervisory MLHW in the field 15 days each month
4-wheel vehicle Motor scooter	Community means: taxi, bus, truck, boat, animal, train
Messenger Telephone or radio	Community means: telegraph, telephone, radio, postal service

Language and Illustrations

The training materials in The MEDEX Primary Health Care Series are prototypes designed for easy adaptation to a country's specific needs. Primary health care program directors should adapt the materials to meet the unique circumstances under which their programs operate. The training materials are written in a format and at a language level which is intended to make them easy to understand, adapt, and translate.

Essential technical language is included in the training materials because mid-level health workers frequently will communicate with nurses, doctors, sanitarians, and other health workers. Technical medical language has been eliminated from community health worker training materials where possible. Local conditions, disease patterns, and resources should guide further adaptation of the prototype materials. The adapted materials can be scaled to the educational and technical level desired by each country.

Rather than developing racially, culturally, and environmentally identifiable illustrations which would be changed in adaptation, The MEDEX Group selected Africa as background for the Series' illustrations. Adaptation of the prototypes should substitute local illustrations to make the materials consistent with the local environment.

Advantages of Using Prototype Materials

Prototype training materials serve as a guide, not a prescription, for developing primary health care services. Also, they are appropriate for small projects as well as nationwide programs, allowing coordination at all levels and scales. Prototype materials also provide:

- A uniform and consistent format for training and operations
- Proven methods based on diverse primary health care programs
- A starting point from which to develop or improve a specific primary health care system or its components

O V E R V I E W

A time-saving approach to the development of training and management materials

A comprehensive approach to primary health care system development, including suggested steps to follow in implementing and managing successful primary health care services

A guide to major problem areas and technology

An adjunct to standard methods and materials already in use so they can be used in part or as a total teaching system

The MEDEX Primary Health Care Series has three major components. These are Systems Development Materials, Mid-Level Health Worker Training Materials, and Community Health Worker Training Materials.

Chart 3. The MEDEX Primary Health Care Series

Volume 1 The MEDEX Primary Health Care Series: An Overview

Systems Development Materials

- 2 *Student Text and Instructor's Manual: Management Analysis Training Module*
 - 3 *Drugs and Medical Supplies System Workbook; General Supplies System Workbook; Facilities and Equipment Maintenance System Workbook; Transportation System Workbook*
 - 4 *Communication System Workbook; Personnel System Workbook; Finance System Workbook; Health Information System Workbook*
 - 5 *District and National Planning and Management Workshops Manual*
-

Mid-Level Health Worker Training Materials

Training Providers of Health Services

Training Trainers

Training Supervisors

TRAINING PROGRAM DEVELOPMENT MANUALS

- 6 **Training Process Manual**
- 7 **Continuing Education Manual**
- 8 **Training Evaluation Manual**

COMMUNITY HEALTH MODULES

- 9 *Student Text:* Identifying the Preventive Health Needs of the Community; Meeting the Preventive Health Needs of the Community; Training and Supporting Community Health Workers
- 10 *Instructor's Manual:* Identifying the Preventive Health Needs of the Community; Meeting the Preventive Health Needs of the Community; Training and Supporting Community Health Workers

BASIC CLINICAL KNOWLEDGE AND SKILLS MODULES

- 11 *Student Text:* Anatomy and Physiology; Medical History
- 12 *Student Text:* Physical Examination
- 13 *Instructor's Manual:* Anatomy and Physiology; Medical History; Physical Examination

GENERAL CLINICAL MODULES

- 14 *Student Text:* Respiratory and Heart; Gastrointestinal; Genitourinary
- 15 *Instructor's Manual:* Respiratory and Heart; Gastrointestinal; Genitourinary
- 16 *Student Text:* Skin; Dental, Eyes, Ears, Nose, and Throat
- 17 *Instructor's Manual:* Skin; Dental, Eyes, Ears, Nose, and Throat
- 18 *Student Text:* Infectious Diseases; Other Common Problems
- 19 *Student Text:* Trauma and Emergency
- 20 *Instructor's Manual:* Infectious Diseases; Other Common Problems; Trauma and Emergency

MATERNAL AND CHILD HEALTH MODULES

- 21 *Student Text:* Prenatal Care; Labor and Delivery; Postnatal Care
- 22 *Instructor's Manual:* Prenatal Care; Labor and Delivery; Postnatal Care
- 23 *Student Text:* Problems of Women; Diseases of Infants and Children; Child Spacing

O V E R V I E W

- 24 *Instructor's Manual: Problems of Women; Diseases of Infants and Children; Child Spacing*

HEALTH CENTER MANAGEMENT MODULES

- 25 *Student Text: Working with the Health Team; Working with Support Systems*
- 26 *Instructor's Manual: Working with the Health Team; Working with Support Systems*
- 27 *Student Text and Instructor's Manual: Supervising and Supporting Mid-Level Health Workers*

REFERENCE MANUALS

- 28 Formulary; Diagnostic and Patient Care Guides
- 29 Patient Care Procedures
- 30 Health Center Operations
- 31 Community Health
-

Community Health Worker Training Materials

- 32 Introduction to Training, Clean Water and Clean Community, Prevention and Care of Diarrhea
- 33 Healthy Pregnancy, Feeding and Caring for Children
- 34 Some Common Health Problems, Tuberculosis and Leprosy; First Aid
- 35 Community Learning Materials: Health Problems in the Community, Caring for Your Child, Caring for Your Sick Child; Clean Home and Clean Community; Illustrations for Training Community Health Workers
-

The MEDEX Primary Health Care Series

SYSTEMS DEVELOPMENT MATERIALS

The Systems Development Materials train program participants to analyze their primary health care management support systems and to recommend ways to improve them. Prototype materials are provided to help managers organize and conduct district and national workshops to strengthen planning, organization, evaluation, and management support for primary health care.

Systems Development Materials include a module for training management analysts, workbooks for use in analyzing management systems, and a manual for conducting district and national planning and management workshops.

Management Analysis Training Module

The Management Analysis Training Module helps the management analyst trainee develop the necessary skills, knowledge, and attitudes to strengthen management support systems for primary health care. The module guides the trainee through a complete study of one or more management support systems using a set of management system workbooks.

Management System Workbooks

The management system workbooks help the management analyst to gather information for a study of a management support system, to develop and analyze study findings, conclusions, and recommendations, and to prepare written and oral reports of the study. A workbook is available for each of these management support systems: drugs and medical supplies, general supplies, facilities and equipment maintenance, transportation, communication, personnel, finance, and health information. Each workbook gives the beginning management analyst a structured approach to information gathering and analysis in that system. The workbooks help ensure that the management analysis studies will be of sufficient quality to provide an information base for subsequent systems improvements.

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District and National Planning and Management Workshops Manual

The District and National Planning and Management Workshops Manual serves as a basic resource for planning and conducting workshops in health planning and management at the district and national levels of the health system. The workshops are part of a continuing process for improving the management of primary health care programs. This process brings together policy level officials and field personnel in a workshop setting to review analytical studies of management support systems, confirm or revise findings and conclusions, examine alternatives, and develop plans for improving the systems to better support the delivery of primary health care services.

The manual contains guidelines for planning and conducting a workshop, including prototype workshop programs, exercises, evaluation questionnaires, and final report outlines.

MID-LEVEL HEALTH WORKER TRAINING MATERIALS

The Mid-Level Health Worker Training Materials which can be adapted to the specific needs of a country include procedures and materials for preparation of instructors, evaluation of trainees, preparation for the community phase of training, and development of a continuing education program. Instructors will also use the materials to train nurses, medical assistants, and other middle level providers of health services. The materials ensure that students acquire the skills and knowledge they will need to provide primary health care services, to manage a small health facility, and to train community health workers. These materials also train instructors and supervisors to teach, supervise, and support mid-level health workers.

Mid-Level Health Worker Training Materials contain three training program development manuals, three community health modules, three basic clinical knowledge and skills modules, eight general clinical modules, six maternal and child health modules, three health center management modules, and five reference manuals.

The training program development manuals contain material for adapting the prototype curriculum and preparing instructors to use competency-

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based teaching methods, evaluating the trainees, and developing a continuing education system.

The community health modules prepare students to assess the preventive and promotive health needs of a community, to work with the community to meet its priority health needs, and to work with community health workers. Students spend three months of their training program in communities at sites similar to those to which they will be assigned after graduation.

The basic clinical knowledge and skills modules give students the background and information they will need to interview and examine patients and diagnose a problem or condition. Students will also learn the basic disease processes described in the general clinical modules.

The general clinical modules train the students to diagnose, treat, and prevent common clinical problems. After completing a given module, the mid-level health worker will be able to:

- Obtain relevant medical history information by interview

- Appropriately examine the patient

- Use the medical history and physical examination findings to assist in diagnosing a patient's problem

- Provide treatment and care for a patient who has any one of the problems or conditions in that module

- Determine whether or not a problem or condition diagnosed requires care which he cannot provide and transfer or refer the patient to a hospital

- Inform the patient about what he can do to eliminate, reduce, or prevent the problem

The mid-level health worker will also be able to use the information in the general clinical modules when advising family, community, and health team members about how to protect and improve their health status.

The maternal and child health modules provide instruction and experience in managing problems and conditions of women and children. Students learn to examine pregnant women, to monitor pregnancies, to assist in labors and deliveries, to examine newborns, and to treat the common problems and conditions of women and children. In addition, students learn to assist couples in planning their families.

The three health center management modules explain how a ministry of

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health, health workers, and communities cooperate in a working primary health care system. The modules explain mid-level health workers' management duties and responsibilities as well as fundamental techniques for managing a health team and using support systems. Mid-level health workers also learn how to supervise and support other mid-level health workers, as part of their continuing education.

The five reference manuals are regularly used by the students during the course of their training. They must be used to correctly answer review questions and exercises. By the end of their training, the students are familiar with the contents of each manual and are able to use it effectively when they are at work in a health center. The references facilitate the rapid and accurate diagnosis and treatment of health problems as well as the efficient management of health center operations. Like the training modules, the reference manuals must be adapted to fit the conditions of specific country programs.

Each prototype mid-level health worker training module has a student text and an instructor's manual. Each student text contains a task analysis table showing the major tasks related to that module and the knowledge and skills required to carry out those tasks. Each student text also has a student guide which lists the learning objectives and learning activities for the module. Schedules show how the training time is allotted for each activity. In addition, each module contains review questions and review exercises. Skill checklists are included when appropriate so the students can rate each other on the skills they are learning. These checklists are the same checklists the instructors use to evaluate the students.

The instructor's manuals contain teaching plans related to the units in the student text. Instructor's manuals also contain answers to the review questions and review exercises. Where photographic slides are considered valuable learning tools, sample slide narratives and sketches of recommended slides are included in the instructor's manual.

Training Program Development Manuals

Training Process Manual: Curriculum Adaptation, Instructor Preparation, Program Management

The Training Process Manual will help training program managers establish, prepare for, and conduct a competency-based training program that is specific to

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a country's needs, using The MEDEX Primary Health Care Series. The manual provides step-by-step guidelines to prepare program managers to:

Make policy decisions and establish guidelines for the training program, including recommendations for necessary policy decisions

Plan and guide the adaptation process for the prototype mid-level health worker and community health worker curriculum

Prepare instructors using teaching methods and techniques recommended for competency-based training

Establish a system for managing the training program

The manual includes information, activities, and supporting materials to accomplish these tasks. Among the materials is the Community Phase Orientation Program which prepares mid-level health workers and supervisors for the three-month community phase of training. It provides definitions of and an orientation toward:

The community phase supervisor's scope of work

The logistical arrangements for supervision

The criteria and methods for evaluating mid-level health worker performance regarding management of health center operations; community health activities; and community health worker selection, training, and support activities

Continuing Education Manual

The Continuing Education Manual makes continuing education part of the mid-level health worker supervisory system. Designed for use in a workshop, it prepares the program manager and his staff to train supervisors who will make continuing education of mid-level health workers a regular part of their responsibilities. The manual addresses these components of the systematic approach to continuing education:

Determining whether mid-level health workers are meeting previously identified community health needs

Evaluating the job performance of the mid-level health worker, identifying his continuing education needs, and stating learning objectives

Evaluating manpower, facilities, and material resources available for continuing education

Developing plans for implementing continuing education for mid-level health workers

Evaluating the effectiveness of continuing education programs

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The components of a competency-based training program introduced in the Training Process Manual are applied in the continuing education program for mid-level health workers.

Training Evaluation Manual

The Training Evaluation Manual is a tool for carrying out systematic evaluation of students during the training program. The manual includes logs for recording results of test scores and performance evaluations. It provides prototype evaluation materials, including pretests and posttests for each module, and a certification log which is a composite record of students' knowledge and skills. The manual also includes prototype schedules for conducting student evaluations.

Community Health Modules

Identifying the Preventive Health Needs of the Community

Identifying the Preventive Health Needs of the Community will prepare the mid-level health worker to assess the needs of a community related to environmental health, nutrition, and maternal and child health. After completing the module, the mid-level health worker will be able to assess healthy and unhealthy practices and conditions in a community in a manner which is sensitive to the cultural and social background of the people. The mid-level health worker will also be able to use basic principles of preventive and promotive health teaching to assist people in changing health practices.

Meeting the Preventive Health Needs of the Community

The module Meeting the Preventive Health Needs of the Community prepares the mid-level health worker to assist a community in developing and implementing a plan to meet the priority health needs identified by the community. It also prepares the mid-level health worker to evaluate health promoting activities with people from the community who have carried out these activities.

Training and Supporting Community Health Workers

The Training and Supporting Community Health Workers module prepares mid-level health workers to train, guide, and support community health workers. The mid-level health workers are also oriented to the role of the community in the selection and support of community health workers.

Basic Clinical Knowledge and Skills Modules

Anatomy and Physiology

Anatomy and Physiology provides the elementary information on anatomy and physiology a student will need to complete a basic medical history and physical examination of a patient and to understand the basic disease processes described in the clinical modules. After completing this module, the student will be able to describe the structural components of the human body, explain the basic physiologic functions of the body, and identify and locate the general anatomical regions of the human body and the organ systems contained in each.

Medical History

After completing the Medical History module, the student will be able to interview patients to obtain appropriate information regarding each patient's current state of health, which includes his presenting complaint, history of the present problem, review of systems, and past medical history. He will also be able to record that information.

Physical Examination

After completing the Physical Examination module, the student will be able to physically examine patients and identify and record the relevant physical examination findings.

General Clinical Modules

Common Problems—Respiratory and Heart

Students learn to manage these common respiratory and heart problems:

Pneumonia	Tuberculosis
Acute bronchitis	Congestive heart failure
Chronic bronchitis and emphysema	Rheumatic heart disease
Bronchial asthma	Angina pectoris
Pleural effusion	Myocardial infarction
	Hypertension

Common Problems—Gastrointestinal

Students learn to manage these common gastrointestinal problems:

Amebiasis	Pinworms	Acute abdomen
Giardiasis	Tapeworms	Acute appendicitis
Peptic ulcer	Hookworms	Intestinal block
Gastroenteritis	Viral hepatitis	Hemorrhoids
Roundworms	Cirrhosis	Anal fissures

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Common Problems—Genitourinary

Students learn to manage these common genitourinary problems:

Urinary tract infection	Enlarged prostate gland
Stones in the urinary tract	Prostatitis
Nephritis	Scrotal swelling
Nephrotic syndrome	Gonorrhea
	Syphilis

Common Problems—Skin

Students learn to manage these common skin problems:

Impetigo	Tropical ulcers
Scabies	Herpes simplex
Lice	Eczema
Ringworm	Onchocerciasis
Tinea versicolor	Contact dermatitis
Cellulitis	Skin reactions to drugs
Boils and abscesses	

Common Problems—Dental, Eyes, Ears, Nose, and Throat

Students learn to manage these common dental, eye, ear, nose, and throat problems:

Sty	Dental abscess
Conjunctivitis	Acute upper respiratory infection
Trachoma	Acute otitis media
Cataracts	Chronic otitis media
Vitamin A deficiency	Mastoiditis
Foreign body in the eye	External otitis
Cuts and ulcers in the cornea	Wax in the ears
Eye emergencies	Acute sinusitis
Canker sores	Acute bacterial tonsillitis
Gingivitis	Foreign body in the ears, nose, and throat
Acute ulcerative gingivitis	Nose bleeds
Tooth decay	

Common Problems—Infectious Diseases

Students learn to manage these common infectious diseases:

Typhoid fever	Louse-borne typhus
Tetanus in children and adults	Meningitis
Rabies	Diphtheria
Malaria	Leprosy

Other Common Problems

Students learn to manage these other common problems:

Low back pain caused by muscle strain or sprain of the sacroiliac joint	Stroke
Low back pain caused by disk disease	Grand mal epilepsy
Osteoarthritis	Petit mal epilepsy
Rheumatoid arthritis	Anemia
Septic arthritis	Cancer
Simple goiter	Diabetes mellitus
Hypothyroidism	Acute confusion
Hyperthyroidism	Anxiety
Headache	Depression
	Acute alcohol intoxication
	Chronic alcoholism

Trauma and Emergency

Students learn to manage these problems of trauma and life-threatening emergencies:

Shock	Dislocations
Unconsciousness	First degree burns
Blocked airway	Second degree burns
Acute respiratory failure	Third degree burns
Snake bite	Trauma to the eye
Poisoning	Trauma to the head
Bleeding	Trauma to the spinal column
Lacerations	Trauma to the chest
Fractures	Trauma to the abdomen
Sprains	

Maternal and Child Health Modules

Prenatal Care

Prenatal Care prepares students for the treatment and care of the woman who is experiencing the common conditions that occur during pregnancy. Students learn to recognize risk factors in a pregnant woman and to provide treatment or refer her, as appropriate. Problems considered are:

Severe anemia	Preeclampsia and eclampsia	Bleeding late in pregnancy
Diabetes	Fetal death	Malaria
Heart disease	Bleeding early in pregnancy	Sickle cell disease
Ectopic pregnancy		
Septic abortion		



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Labor and Delivery

Labor and Delivery prepares students to assist in the normal delivery of an infant and to care for or refer mothers experiencing any of these complications:

Fetal distress	Face-up presentation
Maternal distress	Face presentation
Urine in the bladder	Breech presentation
Premature labor	Transverse presentation
Incomplete fetal rotation	Multiple pregnancy
Small or abnormally shaped pelvis	Prolapse of the cord
Early rupture of the bag of waters	Rupture of the uterus
Retained placenta	Preeclampsia or eclampsia
Prolonged labor	Bleeding
Breathing problems of a newborn	Postpartum bleeding
	Emergencies in a newborn

Postnatal Care

Postnatal Care prepares students to provide care for postnatal mothers and their infants and to treat or refer patients with these common postnatal problems:

Swollen breasts	Colds
Lack of breast milk	Simple jaundice
Hemorrhoids	Simple swelling of the scalp
Cracks on nipples	Bleeding into the scalp
Breast abscess	Fractures
Puerperal sepsis	Diarrhea
Unrepaired perineal tears	Fever
Mother with a dead baby	Low birth weight
Cradle cap	Jaundice
Diaper rash	A newborn without a mother

Problems of Women

Students learn to manage these reproductive system problems of women:

Pelvic inflammatory disease	Tumor of the ovary
Non-specific vaginitis	Breast lumps
Trichomonal vaginitis	Menstrual cramps
Monilial vaginitis	Side effects of contraceptives
Cancer of the uterus or cervix	Menopause
Fibroid tumor in the uterus	Atrophic vaginitis

Diseases of Infants and Children

Students learn to manage these common problems of infants and children:

Malnutrition	Whooping cough
Diarrhea and dehydration	Measles
Tetanus of the newborn	Mumps
Septicemia in the newborn	Chicken pox
Gonococcal conjunctivitis of the newborn	Poliomyelitis
Thrush in the newborn	Rheumatic fever
Croup	Sickle cell anemia
	Osteomyelitis

Child Spacing

The Child Spacing module prepares students to counsel individuals or couples about child spacing methods, the advantages and disadvantages of those methods, and the common side effects and complications associated with them. In addition, the students learn the clinical skills they will need to assist individuals or couples seeking child spacing methods. The module also prepares students to counsel individuals and couples who want to have children but cannot.

Health Center Management Modules

Working with the Health Team

In *Working with the Health Team*, the health team refers to the mid-level health worker, those with whom he works in the health center, and the community health workers. Students study these topics: working with a health team, health team functions within the national primary health care system, managing a health center, supervising a health center, team problem solving, team work plans and schedules, and evaluating program and team performance.

Working with Support Systems

Working with Support Systems is the main management module of the mid-level health worker training program. The module is designed to teach mid-level health workers how to manage the resources normally available at a health center. These resources are divided into eight support systems: drugs and medical supplies, general supplies, facilities and equipment maintenance, transportation, communication, personnel, finance, and health information. These are the same support systems for which the Management System Workbooks are designed.

Supervising and Supporting Mid-Level Health Workers

Supervising and Supporting Mid-Level Health Workers prepares experienced mid-level health workers to supervise other mid-level health workers. It is a continuing education module and assumes mastery of the knowledge and skills provided by the basic mid-level health worker training course. It may also be used to train other health professionals to supervise mid-level health workers, if these professionals already have a mid-level health worker's knowledge and skills. Using competency-based training principles, the module builds upon basic mid-level health worker training, and covers the supervisory and support functions required of a supervisor. Topics include leadership and team building, communication skills, handling grievances and disciplinary problems, decision making, planning and evaluation for supervisors, evaluating mid-level health workers' performance, and providing continuing education.

This module includes text material followed by practical exercises. Some exercises take only an hour; others take several months of field work to complete. The module is designed for a training period of three to four months, of which about three weeks are spent in the classroom.

Reference Manuals

Formulary

The Formulary is for use with the Diagnostic and Patient Care Guides and the Patient Care Procedures. It contains information that mid-level health workers will need to use and dispense drugs safely and effectively.

The Formulary is divided into two sections. The first section includes information about how to take a drug history, how to calculate drug doses, the importance of giving instructions to the patient, and how to label containers of drugs before dispensing them. The end of the first section includes a discussion of common drug interactions.

The second section includes information about specific drugs. The drugs are listed according to categories of use. Each drug entry includes a description of:

- The form in which the drug is supplied and what dosages are available
- The conditions for which the drug can be used
- The usual adult and child dosages
- The most common side effects of the drug
- Precautions to take when using and dispensing the drug
- Proper storage to maintain the effectiveness of each drug
- Information to tell the patient about the drug

Diagnostic and Patient Care Guides

The **Diagnostic and Patient Care Guides** are based on the diseases and conditions that are described in the general clinical modules and the maternal and child health modules. The symptoms and signs of each condition described in the training modules are also listed under each disease or condition in the **Diagnostic and Patient Care Guides**.

Patient Care, which follows the Symptoms and Signs, provides a summary of the care that is recommended in the training modules. Because antibiotic dosages are required so frequently, they are summarized separately in a **Guide for Calculating Antibiotic Dosages**.

Patient Care Procedures

Patient Care Procedures provides detailed instructions for performing all of the procedures presented in the training modules. Each procedure contains:

- A list of all the supplies necessary to perform the procedure

- A reason for performing the procedure

- A description or an explanation of possible difficulties a student may encounter

- The steps for performing the procedure, in the order they should be performed

- Possible patient responses to the procedure

- Patient advice to give while performing the procedure and after

Health Center Operations

The **Health Center Operations** manual contains the official policies, procedures, and forms used at the health center level of a primary health care system. It contains sections on the eight management support systems and on how to organize and manage a health center. Other sections discuss how a national primary health care system is organized and how it functions, and guidelines for the mid-level health worker on how to plan, carry out, and evaluate work at a health center.

Community Health

The **Community Health** manual provides practical information to help students, community members, and leaders carry out community health activities. It is divided into five sections, each of which deals with a different area of community health and community work. Each section includes aids or tools that will help students with their work in the community. These aids and tools include charts, checklists, schedules, guides, step-by-step instructions, and simple lists. They are designed to supplement what students have already learned about the process of planning and carrying out community health activities.

COMMUNITY HEALTH WORKER TRAINING MATERIALS

The Community Health Worker Training Materials are designed for training literate and non-literate community health workers to carry out specific tasks. The teaching approach emphasizes dialogue between trainer and trainee. Other methods employed include role-play, demonstrations, stories, and extensive use of visual aids. The Community Health Worker Training Materials include workbooks and community learning materials to train community health workers. The workbook format teaches through dialogue between the trainer and the community health worker trainees. The community health worker materials are thus geared toward practical skill development through maximum interaction with the trainer. The approach allows appropriate and useful training that community health workers can apply to local needs. The workbooks emphasize preventive and promotive skills, but include selected basic curative skills as well.

The workbooks can be used to train new community health workers or to provide continuing education for community health workers. The community health worker workbooks are used along with the community health modules, in particular Training and Supporting Community Health Workers, to prepare mid-level health workers to train community health workers.

Community Health Worker Workbooks

Introduction to Training

The first workbook explains the community health worker's role, the training process, and the training materials.

Clean Water and Clean Community

This workbook discusses the use of water in the community. It describes how water gets dirty, how to make sure that water is clean, and how to protect water. The workbook explains why people need latrines. It shows how to keep the community clean by building latrines, rubbish pits, and compost pits.

Prevention and Care of Diarrhea

Prevention and Care of Diarrhea discusses why children in the community get diarrhea. It explains how community health workers can help people prevent diarrhea in children. The workbook also tells how children can get seriously ill

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with diarrhea and what community health workers can do to prevent children from becoming seriously ill with diarrhea, including the preparation and use of oral rehydration solutions.

Healthy Pregnancy

Healthy Pregnancy discusses how a woman can have a healthy pregnancy and delivery. It includes information on prenatal care and also discusses child spacing.

Feeding and Caring for Children

Feeding and Caring for Children discusses how a mother can take care of her baby. The workbook includes information on breast-feeding and on the kind and amounts of food a child needs to grow up healthy. The workbook shows how to prepare food for a young child and explains when children need immunizations.

Some Common Health Problems

Some Common Health Problems explains how a community health worker can take care of some common health problems in the community, such as scabies, red eye, and fever. The workbook also discusses personal habits that help people stay healthy.

Tuberculosis and Leprosy

Tuberculosis and Leprosy includes information on how these two common health problems spread. It tells how a community health worker can help prevent these problems and care for people with tuberculosis and leprosy.

First Aid

First Aid describes how a community health worker can provide first aid for people who have minor accidents in the community.

Community Learning Materials

Health Problems in the Community

This booklet with pictures shows some common health problems in the community. Community health workers can use this booklet to learn about and discuss health problems in the community.

Caring for Your Child

This booklet has pictures that show parents how to take good care of their young children. This booklet relates to the **Feeding and Caring for Children** and the **Healthy Pregnancy** workbooks. Community health workers can use this booklet to discuss these subjects. Parents can also use this booklet to learn how to have a healthy pregnancy and how to care for young children.

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Caring for Your Sick Child

This booklet with pictures describes what parents can do at home to care for children with some common health problems.

Clean Home and Clean Community

This booklet with pictures will help community health workers discuss what people can do by themselves and with others to make their community clean and healthy.

Illustrations for Training Community Health Workers

This volume is a compilation of important illustrations from the workbooks in a large-size format. These illustrations can be used in the training of community health workers and also as community learning materials.

Development of The MEDEX Primary Health Care Series

Background

The concept of primary health care has developed over the past twenty-five years. Changing development theories in the sixties are among the early factors which helped shape the primary health care movement. In discussing the emerging role of health in development in 1978, The MED-EX Group focused on the need to examine development processes that could line "trickle down" and "percolate up" theories into a perspective that connects the periphery with the center. In this way, the rural and urban poor at the social and geographic periphery could benefit from centrally located technical capabilities and resources, instead of being isolated from them.

Knowledge that categorical health services such as oral rehydration, family planning, and immunizations could be delivered and sustained more effectively in an integrated delivery system became, for some, the driving force to pursue a non-fragmented approach to delivering essential health services. In the sixties and seventies emerged a far-reaching awareness that adequately trained lay people could provide such integrated services. Also, there was an increasing realization that the community is the proper locus as well as the focus of such services. These were among the stimuli in the sixties and seventies that moved the World Health Organization (WHO) and its member states through and beyond the early concept of basic health services which made the rural health center a pivotal point for health care delivery.

Looking beyond technical medical solutions to other factors which also impinge on health, a number of related philosophies and activities converged within a relatively short time in the mid-seventies. The World Health Organization recognized that essential health services for most of the world's population was a possibility. From its leadership position, WHO conceptualized the idea of "Health for All by the Year 2000." Almost at the same time, the International Labor Organization and the United

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Nations Children's Fund (UNICEF) were promoting the basic needs strategy which elevated health to a prominent position in development undertakings. UNICEF and WHO together adopted and promulgated primary health care as the strategy to achieve the goal of health for all by 2000.

The culmination of these actions and related trends was the meeting on primary health care organized by WHO and UNICEF in Alma Ata, USSR, in 1978. Representatives of 134 governments and 67 international agencies who attended that conference endorsed the principles of primary health care. That meeting legitimized primary health care and may prove to be the single most important step toward improving human health and well-being taken in this century.

Aware of these occurrences, and frequently as a participant, The MEDEX Group developed and tested a primary health care technology that would ultimately support the concepts and provide tools to implement the health services component of the overall primary health care strategy. The MEDEX Primary Health Care Series has been shaped by these events. As a product of the global primary health care movement, these approaches and materials represent a contribution to the worldwide effort to achieve health for all by the year 2000.

The MEDEX Group's Experience

Since 1974, The MEDEX Group's Health Manpower Development Staff has collaborated with five countries in the development of primary health care programs. These countries differ in their geography, climate, language, culture, and health service organization and traditions. What they have in common, however, is a commitment to develop a national system of comprehensive and well-supported primary health care services. During this same period, The MEDEX Group also collaborated with health professionals in many other countries and international assistance agencies. Through these experiences, the MEDEX approaches and materials evolved. The first programs took place in the United States in the late sixties and early seventies. They focused on technical assistance for the training of mid-level health workers in rural areas of the United States suffering from a shortage of doctors. Because of political and socioeconomic considerations, the emphasis at that time was on curative care.

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In Micronesia, The MEDEX Group began its first collaborative health program in a developing country. Two important concepts emerged. First, it became obvious that mid-level health workers could train and supervise community health workers, and that community health workers could serve as a vital link between the mid-level health worker and the local communities. Second, the continuous revisions of training materials within the Micronesian program led to the concept of developing prototype materials for adaptation and use elsewhere.

In Thailand, where The MEDEX Group provided technical assistance for the mid-level health worker training component of the Lampang Health Development Project, prototype mid-level health worker training materials based on experiences in the United States and Micronesia were adapted, translated into Thai, and used successfully. The experience in Thailand once again demonstrated the critical importance of ongoing supervision and logistical support for mid-level health workers and community health workers in a primary health care system.

In Guyana, MEDEX prototype training materials, revised on the basis of experience in Thailand, were adapted and used. In addition to clinical skills, the mid-level health workers were trained in basic management skills. These skills helped them obtain and make more efficient use of the support available from the ministry of health and helped them better manage their own health center and other work. The Guyana MEDEX Program has been steadily increasing its emphasis on disease prevention and health promotion with more community participation.

In Pakistan, as part of the Basic Health Services Program, the revised prototype training materials were adapted and used nationwide in twenty mid-level health worker training centers. Special attention was given to the community health worker training materials which were further developed, adapted, and used. Early in the program, the MEDEX team was joined by Thai and Guyanese consultants who were experienced in running MEDEX-type primary health care programs. MEDEX management advisors also worked with Pakistani professionals and other primary health care support personnel to analyze and strengthen support systems for the Pakistan primary health care program.

In Lesotho, the ministry of health identified improved planning and management support as its first priority in strengthening primary health care. The resulting Rural Health Development Project incorporated the experi-

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ences of The MEDEX Group in other countries. The Lesotho mid-level health worker training program adapted MEDEX prototype materials in conjunction with Guyanese and MEDEX Group advisors. The project adapted MEDEX management training materials and contributed significantly to the development of prototype community health worker training materials.

Prototype Health Training and Adaptation Materials

The MEDEX Primary Health Care Series was developed over eight years. It is based essentially on the experiences of the Health Manpower Development Staff of The MEDEX Group in its collaborative efforts in primary health care development. Major contributions to these prototypes also have come from primary health care experiences of other health professionals well known in the field. The concepts and methods of Essex, Fendall, Flahault, Iwamura, King, Morley, Vachrotai, Werner, and others have influenced the development of these materials and, in some instances, have been incorporated into the prototypes. Environmentalists such as Feacham, Navarro, and Pisharoti; educators such as Bloom, Fargo, Guilbert, Mager, and Rogers; and management specialists such as Argyris, McGregor, Drucker, and Odiorne begin the long list of professionals whose work has influenced these prototypes.

As the clinical, preventive, and promotive materials were evolving, field experiences from country programs in Micronesia, Thailand, Guyana, Pakistan, and Lesotho provided useful feedback for the ongoing development of the prototypes. In fact, the greatest influence on prototype evolution has been this feedback on the usefulness and adaptability of the materials in developing countries and the performances of training program graduates in the field. Each of the country programs contributed to improvement in the adaptation process and improved the prototypes themselves. Thus, the prototypes are the end product of years of field trials and subsequent revisions and refinements. See Chart 4. They have succeeded in honing down large amounts of information about specific, commonly occurring health problems and their resolutions into an easily adapted, easily taught, competency-based training format.

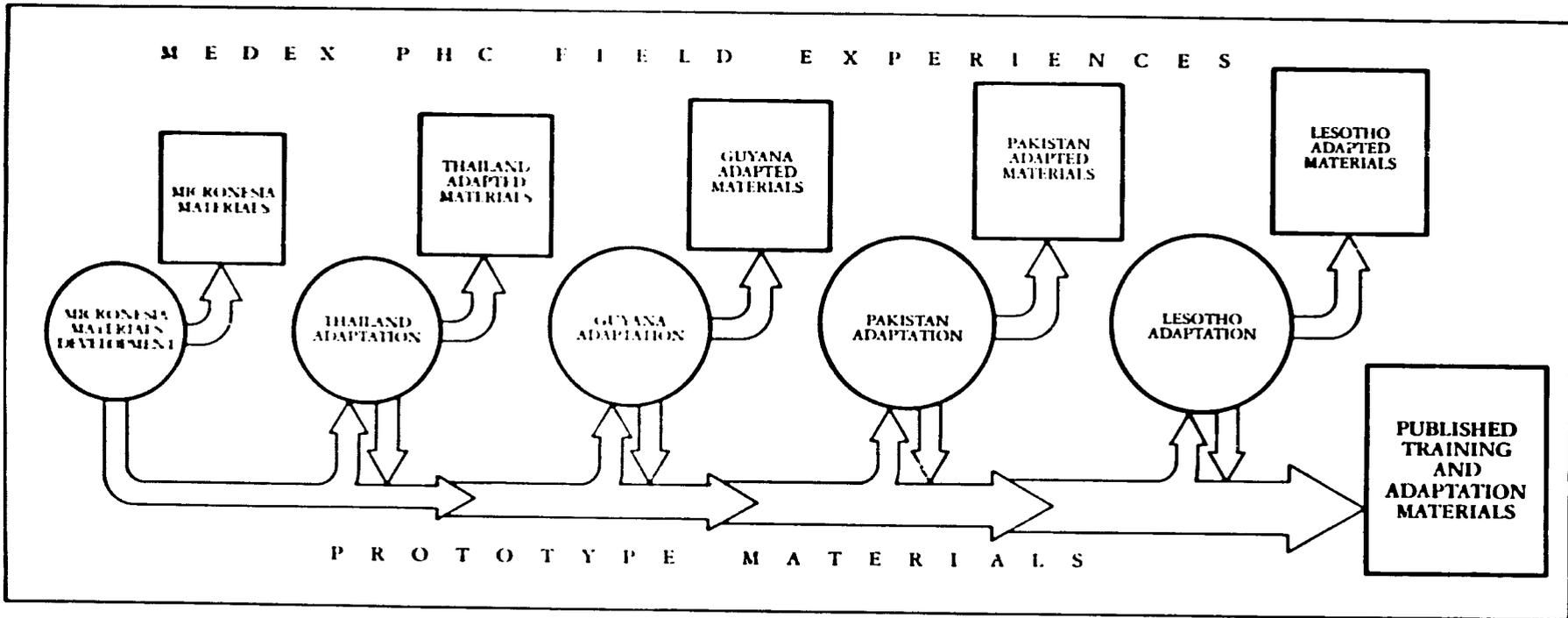
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The development of the management materials, on the other hand, presented a different challenge. Generally, there was a dearth of management technology for delivering primary health care services. There was no body of knowledge from which to draw and to formulate suitable prototypes. Therefore, a different approach was taken. Whereas with the technical health materials, evolving prototypes were sequentially refined and improved in successive program applications, the prototype management materials were derived directly from country experiences. The first set of materials was prepared in Guyana in close cooperation with Guyanese nationals. It was Guyana-specific, designed to meet the needs of that country's health system. A second generation was developed in Pakistan, designed for Pakistan, again with the involvement of local health personnel. This work was further refined and expanded in Lesotho in the same way. Each of these country experiences contributed to the prototype materials which are now available for further adaptation and application in still other health system settings. This process is illustrated in Chart 5.

The MEDEX Group has published the adaptable prototype materials in The MEDEX Primary Health Care Series to assist individuals who are planning, implementing, and strengthening primary health care programs. Primary health care program managers will be able to strengthen their efforts quickly and efficiently by adapting these materials to meet the circumstances of their own countries and programs.

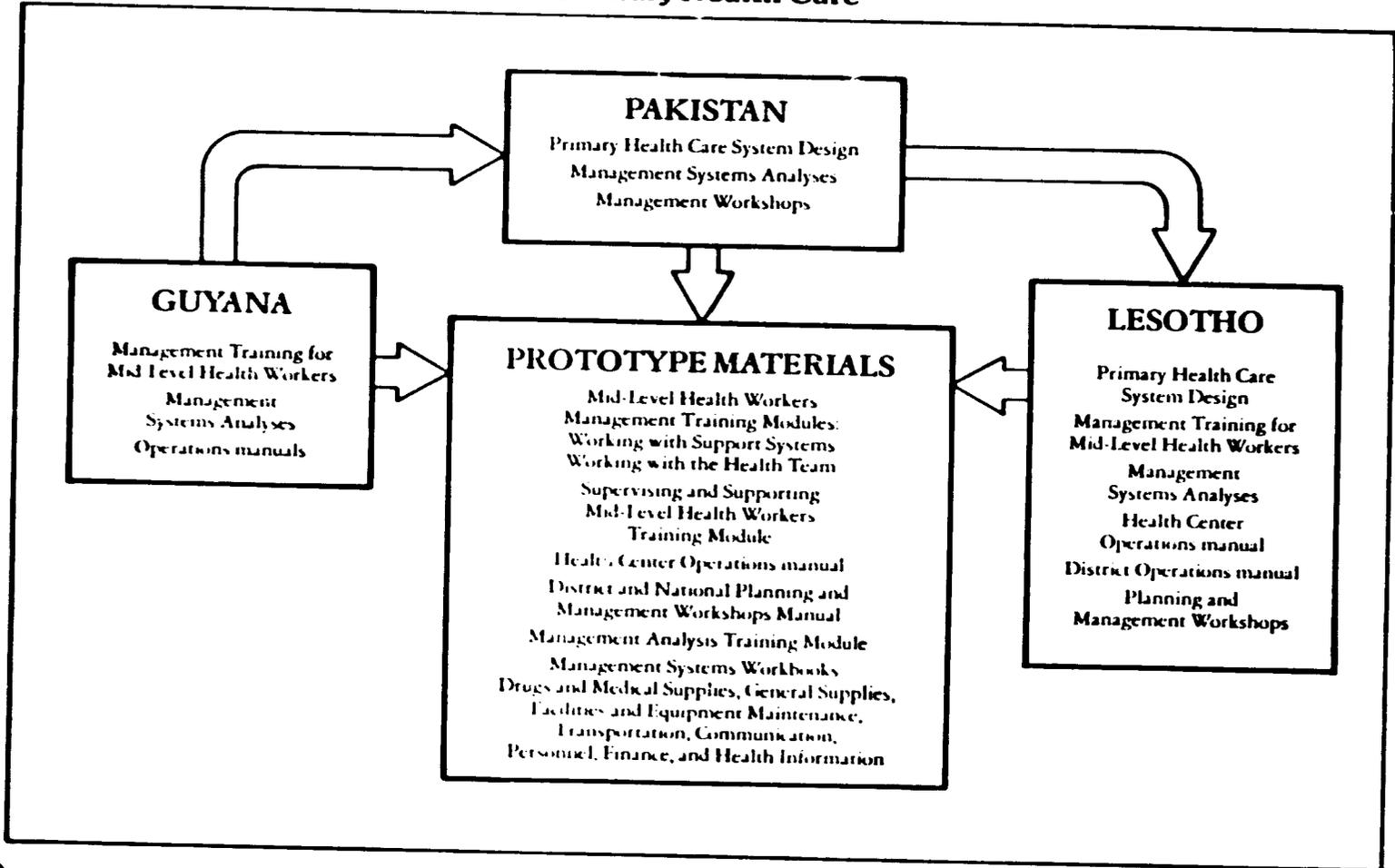
Anyone wishing to use the materials for non-commercial purposes may do so without seeking permission. However, The MEDEX Group would appreciate receiving a letter relating how you used the materials and any suggestions you have on how they might be improved.

Chart 4.
The Development of Health Training and Adaptation
Materials for Mid-Level Health Workers and
Community Health Workers



1.1

Chart 5.
The Development of Management Materials for
Primary Health Care



O V E R V I E W

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CHART CORRELATING HMDS MATERIALS WITH SPECIFIC COMPONENTS OF PHC DEVELOPMENT

If your interests are in these *specific components of PHC development*,

then HMDS materials of use to you will include those marked (✓):

- Comprehensive National/Regional PHC Development
- Comprehensive District/Local PHC Development
- Working with Communities
- Training PHC Trainers
- Training PHC Services Providers (Training MLHWs and CHWs and orienting doctors and nurses)
- Training PHC Administrators and Management Specialists
- Training and Orienting PHC Planners/Evaluation Specialists
- Training and Orienting Senior Officials
- Training and Orienting Technical Advisors
- Training and Orienting Donor Officials
- Strengthening Organization and Functioning of PHC Delivery System
- Strengthening PHC Planning and Evaluation System
- Strengthening Specific PHC Management Support Systems
 - Health Information Systems
 - Communications
 - Transportation
 - Drugs and Medical Supplies
 - General and Administrative Supplies
 - Personnel
 - Finance
 - Facilities and Equipment
- Strengthening Specific PHC Program Areas
 - Immunization
 - MCH
 - Nutrition
 - Environmental Health
 - Family Planning
- Providing Community Development Services (Linkages)
 - Education
 - Agriculture
 - Self-reliance

The KENNEDY Group

	Manpower and Systems for PHC Development (Overview)	Guidelines for PHC Development Systems Development for PHC Planning and Evaluation for PHC Manpower Development/MLHW and CHW Training Management Training	Systems Development Materials Module for Training Management Systems Analysis	Workbooks for Analyzing Management Systems	Manuals for National and Area Planning/Management Workshops	Prototype Modules for Training MLHWs	Prototype Modules for Training CHWs	Prototype Reference Materials (for MLHWs)	Health Center Management Operations Manual	Femulinary Diagnostic Protocols and Patient Care Guides	Patient Care Procedures	Manuals for Development of CBT Programs and CBT Trainers for MLHWs and CHWs (including specific adaptation materials)	Curriculum Adaptation Manual	Training System Evaluation Manual	Instructor Orientation and Preparation Manual	Pre-Deployment Workshop Manual	Training MLHWs to Train CHWs (Module)	Continuing Education Manual
Comprehensive National/Regional PHC Development	✓	✓	✓	✓	✓													
Comprehensive District/Local PHC Development	✓	✓	✓	✓	✓													
Working with Communities	✓	✓	✓	✓	✓													
Training PHC Trainers	✓	✓	✓	✓	✓													
Training PHC Services Providers (Training MLHWs and CHWs and orienting doctors and nurses)	✓	✓	✓	✓	✓													
Training PHC Administrators and Management Specialists	✓	✓	✓	✓	✓													
Training and Orienting PHC Planners/Evaluation Specialists	✓	✓	✓	✓	✓													
Training and Orienting Senior Officials	✓	✓	✓	✓	✓													
Training and Orienting Technical Advisors	✓	✓	✓	✓	✓													
Training and Orienting Donor Officials	✓	✓	✓	✓	✓													
Strengthening Organization and Functioning of PHC Delivery System	✓	✓	✓	✓	✓													
Strengthening PHC Planning and Evaluation System	✓	✓	✓	✓	✓													
Strengthening Specific PHC Management Support Systems																		
Health Information Systems	✓	✓	✓	✓	✓													
Communications	✓	✓	✓	✓	✓													
Transportation	✓	✓	✓	✓	✓													
Drugs and Medical Supplies	✓	✓	✓	✓	✓													
General and Administrative Supplies	✓	✓	✓	✓	✓													
Personnel	✓	✓	✓	✓	✓													
Finance	✓	✓	✓	✓	✓													
Facilities and Equipment	✓	✓	✓	✓	✓													
Strengthening Specific PHC Program Areas																		
Immunization	✓	✓	✓	✓	✓													
MCH	✓	✓	✓	✓	✓													
Nutrition	✓	✓	✓	✓	✓													
Environmental Health	✓	✓	✓	✓	✓													
Family Planning	✓	✓	✓	✓	✓													
Providing Community Development Services (Linkages)																		
Education	✓	✓	✓	✓	✓													
Agriculture	✓	✓	✓	✓	✓													
Self-reliance	✓	✓	✓	✓	✓													

See Other Side

CHART CORRELATING HMDS MATERIALS WITH SPECIFIC COMPONENTS OF PHC DEVELOPMENT (continued)

If your interests are in these *specific components of PHC development,*

then HMDS MLHW and CHW training materials of use to you will include those marked (✓)

	Primary Health Care: Orientation and Introduction for MLHWs	Core Clinical Knowledge and Skills Modules Anatomy and Physiology Medical History Physical Examination	General Clinical Modules Common Skin Problems Dental and Eye, Ear, Nose and Throat Respiratory and Heart Problems Gastro-intestinal Problems Genito-urinary Problems Infectious Diseases Common Medical Conditions Trauma and Emergency	Maternal and Child Health Modules Diseases of Infants and Children Health Problems of Women Labor and Delivery Prenatal and Postnatal Care Child Spacing	Community Health Modules Community Nutrition Community Environmental Health Child Spacing Working with Communities and CHWs Training MLHWs to Train CHWs	Management Modules for Mid-Level Health Workers Working with Support Systems Working with the Health Team Supervisory Mid-Level Health Workers	Community Health Workers Modules First Aid Diarrhea and Dehydration Nutrition Hygiene Clean and Safe Normal Delivery High Risk Pregnancies Community Cooperation Common Clinical Problems Child Spacing
Comprehensive National/Regional PHC Development	✓						
Comprehensive District/Local PHC Development	✓						
Working with Communities	✓						
Training PHC Trainers	✓	✓	✓	✓	✓	✓	✓
Training PHC Services Providers (Training MLHWs and CHWs and orienting doctors and nurses)	✓	✓	✓	✓	✓	✓	✓
Training PHC Administrators and Management Specialists	✓						
Training and Orienting PHC Planners/Evaluation Specialists	✓						
Training and Orienting Senior Officials	✓						
Training and Orienting Technical Advisors	✓						
Training and Orienting Donor Officials	✓						
Strengthening Organization and Functioning of PHC Delivery System	✓						
Strengthening PHC Planning and Evaluation System	✓						
Strengthening Specific PHC Management Support Systems							
Health Information Systems	✓						
Communications	✓						
Transportation	✓						
Drugs and Medical Supplies	✓						
General and Administrative Supplies	✓						
Personnel	✓						
Finance	✓						
Facilities and Equipment	✓						
Strengthening Specific PHC Program Areas							
Immunization	✓						
MCH	✓			✓	✓	✓	
Nutrition	✓						
Environmental Health	✓						
Family Planning	✓						
Providing Community Development Services (Linkages)							
Education	✓						
Agriculture	✓						
Self-reliance	✓						

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The MEDEX Group

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APPENDIX C

A list of the full core staff and extended staff can be obtained by writing to the address below.

Performance records and other references can be obtained by communicating directly with ministries of health in countries where MEDEX has worked.



Health Manpower Development Staff (MEDEX)

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The MEDEX GROUP

Working in health and development, the MEDEX Group is committed to the practical and technical aspects of:

Planning	Strengthening of Management Support
Designing Projects	Management Training
Implementation	Village-Level Health and Development Activities
Operations Management	Evaluation
Curriculum Development	

BACKGROUND

The MEDEX Group has produced and published a major primary health care planning, management, and training resource for the developing world. Eight years in the making, the 35-volume MEDEX PRIMARY HEALTH CARE SERIES has had extensive field trials in five countries. It has received international recognition and acclaim as the most comprehensive work of its kind in print. Unique in its cooperative approach, the Series is designed to provide community and government programs with mutually supporting service roles. Already field tested and with proven applicability to the primary health care movement, the MEDEX series provides practical prototype materials for easy adaptation to country-specific or project-specific needs.

RESOURCES

The MEDEX PRIMARY HEALTH CARE SERIES evolved from the collaborative work of management, health, and development professionals in five countries and the collective experience of seventeen other developing nations. This work has created not only a primary health care technology, but provided the MEDEX Group with the experience and



expertise to provide technical assistance in a broad spectrum of health and development settings. These capabilities are available to governments and private national and international organizations to strengthen health and development efforts in planning, project design, implementation, operations management, health worker training, management training, village-level health and development activities, and evaluation.

EXPERIENCE AND EXPERTISE

The MEDEX Group has:

- The professional experience of designing and managing health care programs on both national and local levels
- The expertise of professionals who have effectively worked with governments and village communities to institute health care programs
- The perspective of government and health worker in developing and managing health care programs
- The cultural experience gained from successful PHC projects in developing nations
- The technical support of a full-time professional team based in Hawaii and available to work anywhere in the world

COLLABORATIVE PROGRAMS

In Micronesia, mid-level health workers were trained for all six districts in this vast Pacific community. This led to the training of community health workers who work with mid-level health workers and physicians in a three level PHC services system.

Thailand, in 1974, was the next developing country with which MEDEX collaborated to

help adapt and use its approaches and materials for training and deploying mid-level health workers and other providers of health services.

Guyana's Ministry of Health started a program for training mid-level health workers in 1976. MEDEX collaborated with the Government of Guyana and the International Development Research Centre of Canada to establish this program. In 1979, MEDEX assisted the Government of Guyana to develop plans to expand the primary health care program to cover even the most remote villages with community health workers. Under contract with USAID, MEDEX provides technical assistance to this expansion effort.

The Government of Pakistan's Basic Health Services Program, partially funded by USAID, began with technical assistance from MEDEX. During 1975-76, MEDEX provided consultation for health sector analysis and planning which led to the Basic Health Services Program. The program is expanding primary health care services to reach the country's 60 million rural people. Twenty mid-level health worker training sites were established in Pakistan's four provinces. Long-term MEDEX and WHO advisors in Pakistan provided technical assistance.

The Government of Lesotho began to receive technical assistance from MEDEX in January 1979 under contract between MEDEX and USAID/Lesotho. The first phase of assistance addressed the organizational structure for primary health care, and preparatory planning and management capacity in the Ministry of Health. During the second phase, initiated in September 1980, the training of mid-level health workers began. In the second phase, changes in the management support system are also being implemented. Four MEDEX advisors in Lesotho assist in program implementation. Subsequently, mid-level health workers are training and supervising community health workers.

STAFF

RICHARD A. SMITH, M.D.
(Howard University-1957), M.P.H. (Columbia-1961)
Director, MEDEX. General practice, Peace Corps
(Nigeria), research, and health planning experience in
United States, Africa, Asia, South America, and Pacific
Basin. Consultant during past 15 years to World Health
Organization and developing country governments in
PHC and manpower development. Member WHO
Expert Panel on Health Manpower and WHO Expert
Committee on Training/Utilization of Auxiliary Per-
sonnel. Member, Institute of Medicine, National
Academy of Sciences. Received William A. Jump Award
in Public Administration (1968) and Gerard B. Lambert
Award for Patient Care Innovations (1971). In 1981
received Rockefeller Public Service Award. (PLAN-
NING, PROGRAM DESIGN, AND EVALUATION)

RODNEY N. POWELL, M.D. (Meharry-1961), M.P.H.
(UCLA-1967)
Deputy director, MEDEX. Pediatrician/nutritionist.
Extensive experience in 1960's in Ethiopia and Tanzania
and as director of Watts Neighborhood Health Center
in Los Angeles. Professor of pediatrics at University of
Minnesota and School of Public Health/Hospital and
Health Services Administration. Regional Public Health
Office director for USAID/Africa in Dar-Es-Salaam in
1970's. Former medical director of Crippled Children
Services for the California State Health Department.
(PLANNING, PROGRAM DESIGN, AND EVALUATION)

THOMAS G. COLES JR., B.S., Mx., M.P.H. (1982)
Worked as medex at Group Health Cooperative of
Puget Sound Hospital, 1970-71. Technical staff mem-
ber in curriculum development for Micronesia Mid-Level
Health Worker (MLHW) Training Program, University
of Hawaii. Selected as one of Outstanding Young Men of
America for his work in primary health care (1972).
Received 1981 Distinguished Alumnus Award from
University of Washington School of Public Health and
Community Medicine. Mr. Coles has Community Health
Worker (CHW) training experience in Asia, consulting
experience in South America and Africa. (MLHW AND
CHW TRAINING, CURRICULUM DEVELOPMENT)

PAMELA T. PRESCOTT, R.N., M.Sc., M.H.S., F.N.P.
Organized and operated six health centers in rural
northern California from 1973 to 1979. In 1979, became
nurse clinician trainer, then director of training with the
Rural Health Development Project in Lesotho.
(CURRICULUM DEVELOPMENT FOR NURSE
CLINICIANS, TRAINING PROGRAMS FOR CHWS)

GREGORY A. MILES, M.P.H., M.Sc.
(in Community Health Education)
Developer of curricula and health training materials

as Peace Corps volunteer in Morocco, designed curri-
cula and trained Indonesian sanitarians to become
trainers. Taught health education to Indochinese
refugees and developed program to provide primary
health care services to migrant farmworkers.
(CURRICULUM DEVELOPMENT, TRAINING)

SUNIL MEHRA, B.A.
Worked with Appropriate Health Resources and
Technologies Action Group (AHRTAG) in London
before joining MEDEX. Formerly communications
officer with community health education service of
Voluntary Health Association of India, producing com-
munications and other learning materials for UNICEF
et al. Has postgraduate diploma in communications and
journalism specially designed for developing countries.
Developed and field tested materials in Lesotho and
Guyana to be used in training community level primary
health care workers. (COMMUNITY LEVEL HEALTH
ACTIVITIES)

ALBERT R. NEILL, B.A., (M.P.H.-1983)
Fourteen years experience in domestic administration
plus 11 years in international work in economic develop-
ment, regional planning, government organization and
health planning, management, and budgeting. Immediate-
ly prior to joining MEDEX served as management devel-
opment specialist for Kaiser Foundation International
assigned to the USAID-sponsored Management of Rural
Health Services Project in Ghana. (PLANNING, PRO-
GRAM DESIGN, MANAGEMENT TRAINING, AND
EVALUATION)

FRANK R. WHITE JR., M.B.A.
Eleven years experience in administering federal/state
grants and contracts. Prior to joining MEDEX, responsible
for all administrative aspects of the largest curriculum
development and materials distribution project in the
State of Hawaii. Spent two years in the Office of Research
Administration at the University of Hawaii reviewing all
grants and contracts in University of Hawaii system.
(CONTRACT ADMINISTRATION)

PATRICK B. DOUGHERTY, M.R.P.
Master's degree in regional planning (health) from the
University of North Carolina. Health administrator
(Peace Corps) for two years with the Botswana Health
Department, responsible for overall planning and
administration of rural health services in the Central
District. Project coordinator for CARE, Nicaragua,
responsible for planning, implementing, and evaluating
primary health care program. Immediately prior to
joining MEDEX he was a hospital manager, Hospital
Corporation of America, Riyadh, Saudi Arabia.
(MANAGEMENT SUBSYSTEMS)

APPENDIX D

The MEDEX Primary Health Care Series

Price List

01 June 1983

The MEDEX Primary Health Care Series is available as a complete set of thirty-five volumes or in one of four subsets. Prices for the complete Series and each of the subsets are found on the reverse side.

Prices for individual volumes are available by writing to The MEDEX Group.

All prices include packaging and surface delivery. Please direct all orders and inquiries to:

The MEDEX Group
John A. Burns School of Medicine
University of Hawaii
1833 Kalakaua Avenue, Suite 700
Honolulu, Hawaii 96815-1561 U.S.A.

(over)

The MEDEX Primary Health Care Series -

Complete Set US\$ 145

Systems Development

Materials US\$ 35

Mid-Level Health Worker

Training Materials US\$ 95

Operations Management

Materials US\$ 35

Community Health Worker

Training Materials US\$ 40

Prepaid orders only

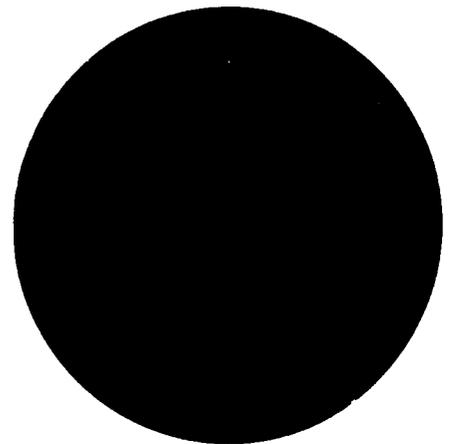
Checks should be made out to The
MEDEX SERIES and be payable in U.S.
dollars.

**Prices subject to change without
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The MEDEX Primary Health Care Series



The MEDEX Group
John A. Burns School of Medicine
University of Hawaii at Manoa
1833 Kalakaua Avenue, #700
Honolulu, HI 96815-1561
U.S.A.
Telephone: (808) 948-8643
Telex: MEDEX 634144
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The MEDEX Primary Health Care Series is a set of materials that has evolved out of developing country experiences. The Series focuses on the training of mid-level health workers and community health workers, and on strengthening the management systems needed to support the

effective delivery of primary health care services at the local level. The training materials are weighted evenly among the curative, preventive, and promotive aspects of health care. The MEDEX materials use a competency-based approach to training. The training curriculum

THE MEDEX PRIMARY HEALTH CARE SERIES COMPLETE SET

- 1** The MEDEX Primary Health Care Series:
An Overview

Systems Development Materials

- 2** *Student Text and Instructor's Manual*
Management Analysis Training Module
- 3** Drugs and Medical Supplies System Workbook
General Supplies System Workbook
Facilities and Equipment Maintenance
System Workbook
Transportation System Workbook
- 4** Communication System Workbook
Personnel System Workbook
Finance System Workbook
Health Information System Workbook
- 5** District and National Planning and Management
Workshops Manual

Mid-Level Health Worker Training Materials

TRAINING PROGRAM DEVELOPMENT MANUALS

- 6** Training Process Manual: Curriculum Adaptation,
Instructor Preparation, Program Management
- 7** Continuing Education Manual
- 8** Training Evaluation Manual
- #### **COMMUNITY HEALTH MODULES**
- 9** *Student Text*
Identifying the Preventive Health Needs of
the Community
Meeting the Preventive Health Needs of
the Community
Training and Supporting Community Health Workers

- 10** *Instructor's Manual*
Identifying the Preventive Health Needs of
the Community
Meeting the Preventive Health Needs of
the Community
Training and Supporting Community Health Workers
**BASIC CLINICAL KNOWLEDGE
AND SKILLS MODULES**

- 11** *Student Text*
Anatomy and Physiology
Medical History

- 12** *Student Text*
Physical Examination

- 13** *Instructor's Manual*
Anatomy and Physiology
Medical History
Physical Examination

GENERAL CLINICAL MODULES

- 14** *Student Text*
Respiratory and Heart
Gastrointestinal
Genitourinary

- 15** *Instructor's Manual*
Respiratory and Heart
Gastrointestinal
Genitourinary

- 16** *Student Text*
Skin
Dental, Eyes, Ears, Nose, and Throat

- 17** *Instructor's Manual*
Skin
Dental, Eyes, Ears, Nose, and Throat

is problem-oriented and therefore includes only that information essential to training the worker to do his or her job. The materials are prototypes designed for easy adaptation to a country's specific needs.

The MEDEX Primary Health Care Series is available as a complete set of thirty-five volumes, as listed below, or in one of four subsets, as listed on the reverse side.

18 *Student Text*
Infectious Diseases
Other Common Problems

19 *Student Text*
Trauma and Emergency

20 *Instructor's Manual*
Infectious Diseases
Other Common Problems
Trauma and Emergency

MATERNAL AND CHILD HEALTH MODULES

21 *Student Text*
Prenatal Care
Labor and Delivery
Postnatal Care

22 *Instructor's Manual*
Prenatal Care
Labor and Delivery
Postnatal Care

23 *Student Text*
Problems of Women
Diseases of Infants and Children
Child Spacing

24 *Instructor's Manual*
Problems of Women
Diseases of Infants and Children
Child Spacing

HEALTH CENTER MANAGEMENT MODULES

25 *Student Text*
Working with the Health Team
Working with Support Systems

26 *Instructor's Manual*
Working with the Health Team
Working with Support Systems

27 *Student Text and Instructor's Manual*
Supervising and Supporting Mid-Level
Health Workers

REFERENCE MANUALS

28 Formulary
Diagnostic and Patient Care Guides

29 Patient Care Procedures

30 Health Center Operations

31 Community Health

**Community Health Worker
Training Materials**

32 Introduction to Training
Clean Water and Clean Community
Prevention and Care of Diarrhea

33 Healthy Pregnancy
Feeding and Caring for Children

34 Some Common Health Problems
Tuberculosis and Leprosy
First Aid

35 Community Learning Materials:
Health Problems in the Community
Caring for Your Child
Caring for Your Sick Child
Clean Home and Clean Community
Illustrations for Training Community
Health Workers

THE MEDEX PRIMARY HEALTH CARE SERIES Development History

PROTOTYPE HEALTH TRAINING AND ADAPTATION MATERIALS

The MEDEX PRIMARY HEALTH CARE SERIES was developed over a period of eight years and is based on the Primary Health Care experiences of the Health Manpower Development Staff and its collaborative efforts with the governments of Micronesia, Thailand, Guyana, Pakistan, and Lesotho. Major contributions to these prototypes also have come from PHC experiences in 17 other countries, plus the experiences of other health professionals well known in the field. The concepts and methods of Essex, Fendall, Flahault, King, Morley, Werner and others have influenced the development of these materials and, in some instances, have been incorporated into the proto-

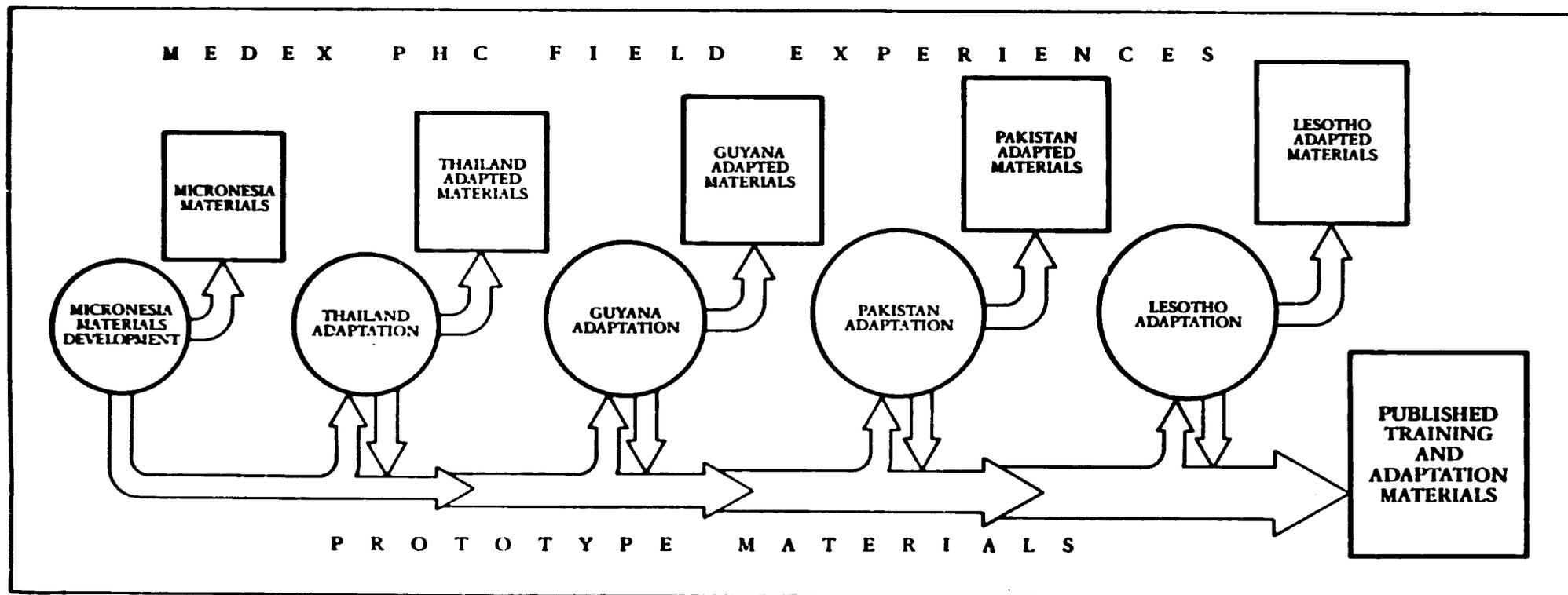
types. Environmentalists such as Feacham, Navarro, and Pisharoti; educators such as Bloom, Fargo, Gilbert, Mager, and Rogers; and management specialists such as Argyris, McGregor, Drucker, and Odiorne begin the long list of concerned professionals whose work has influenced these prototypes. These materials are available to augment PHC training and management materials presently in use or being prepared in developing countries.

As the clinical, preventive, and promotive materials were evolving, field experiences from a series of country programs (Micronesia, Thailand, Guyana, Pakistan, Lesotho) fed useful information back into the ongoing development of the prototypes. The greatest influence on prototype evolution has been feedback on their usefulness

and adaptability in developing countries and the performance of training programs' graduates in the field. Each of the above country programs saw improvement in the adaptation process and in the prototypes themselves. Thus, these materials are the end product of years of field trials and subsequent revisions and refinement. They have all been aimed at honing down large amounts of information to specific, commonly occurring health problems and their resolutions into an easily adapted, easily taught format.

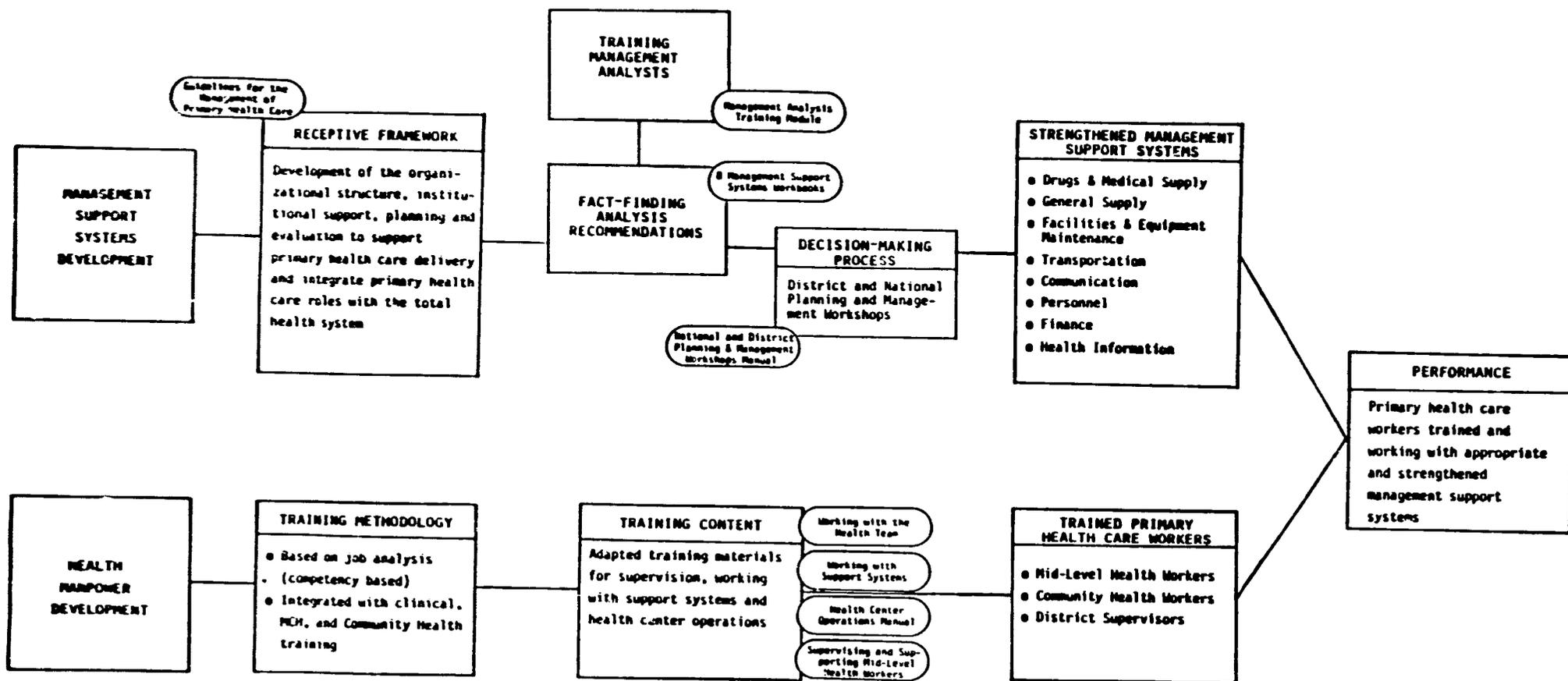
MANAGEMENT MATERIALS

The PROTOTYPE MANAGEMENT MATERIALS are somewhat different from the prototype health materials in that they have not been



The Development of Health Training and Adaptation Materials for MLHW and CHW

OPERATIONS MANAGEMENT FOR PRIMARY HEALTH CARE



THE MEDEX GROUP

08 March 1983

Working with Support System • Management Development Materials

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APPENDIX G

COST REIMBURSEMENT CONTRACT WITH AN EDUCATIONAL INSTITUTION

AGENCY FOR INTERNATIONAL DEVELOPMENT NEGOTIATED CONTRACT NO. AID/ DSPE-C-0006	
NEGOTIATED PURSUANT TO THE FOREIGN ASSISTANCE ACT OF 1961, AS AMENDED, AND EXECUTIVE ORDER 11223	TOTAL ESTIMATED CONTRACT COST \$5,470,723 (\$902,000 Obligated)
CONTRACT FOR: MEDEX, PHASE III, Primary Health Care Systems	CONTRACTOR (Name and Address) University of Hawaii at Manoa
PROJECT NO: 931-1180	NAME Spalding Hall 357, 2540 Maile Way
ISSUING OFFICE (Name and Address) PE Branch Central Operations Division Office of Contract Management Agency for International Development Washington, D.C. 20523	STREET ADDRESS Honolulu, Hawaii 96822
ADMINISTRATION BY Issuing Office	CITY, STATE, AND ZIP CODE
MAIL VOUCHERS (Original and 3 copies) TO: Agency for International Development Office of Controller, SER/FM/PAD Washington, D.C. 20523	COGNIZANT SCIENTIFIC/TECHNICAL OFFICE DS/HEA
EFFECTIVE DATE July 1, 1978	ACCOUNTING AND APPROPRIATION DATA PIQ/T NO. 3188539 APPROPRIATION NO. 72-1181021-8 ALLOTMENT NO. 848-36-099-00-20-81
	ESTIMATED COMPLETION DATE June 30, 1983

The United States of America, hereinafter called the Government, represented by the Contracting Officer executing this Contract, and the Contractor, an educational institution chartered by the State of Hawaii with its principal office in Honolulu, agree that the Contractor shall perform all the services set forth in the attached Schedule, for the consideration stated therein. The rights and obligations of the parties to this contract shall be subject to and governed by the Schedule and the General Provisions. To the extent of any inconsistency between the Schedule and the General Provisions and any specifications or other provisions which are made a part of this contract, by reference or otherwise, the Schedule or the General Provisions shall control. To the extent of any inconsistency between the Schedule and the General Provisions, the Schedule shall control.

This Contract consists of this Cover Page, the Table of Contents, and the Schedule consisting of _____ pages, the General Provisions (Form AID 1420-23C), dated 7-1-76, and the Additional General Provisions (Form AID 1420-23D dated 7-1-76).

NAME OF CONTRACTOR University of Hawaii at Manoa	UNITED STATES OF AMERICA AGENCY FOR INTERNATIONAL DEVELOPMENT
BY (Signature of authorized individual) <i>Fujio Matsuda</i>	BY (Signature of Contracting Officer) <i>Gerald P. Gold</i>
TYPED OR PRINTED NAME FUJIO MATSUDA	TYPED OR PRINTED NAME Gerald P. Gold
TITLE PRESIDENT	CONTRACTING OFFICER
DATE AUG 30 1978	DATE AUG 31 1978

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SCHEDULE
COST REIMBURSEMENT CONTRACT WITH
AN EDUCATIONAL INSTITUTION

Contract No. AID/DSPE-C-0006

TABLE OF CONTENTS

SCHEDULE

The Schedule, on pages 1 through 22, consists of this Table of Contents and the following Articles:

- Article I - Statement of Work
- II - Key Personnel
- III - Period of Contract Services
- IV - Estimated Contract Cost and Financing
- V - Budget
- VI - Negotiated Overhead Rates
- VII - Special Provisions
- VIII - Additional General Provisions and Alterations in Contract

GENERAL PROVISIONS

The General Provisions applicable to this contract consist of form AID 1420-23C entitled "General Provisions - Cost Reimbursement Contract with an Educational Institution," dated 7-1-76, and form AID 1420-23D entitled "Additional General Provisions - Cost Reimbursement Contract with an Educational Institution," dated 7-1-76.

ARTICLE I - STATEMENT OF WORK

A. Objective

The objective is to complete the development of the MEDEX technology started in Phases I and II and to provide technical assistance to selected LDCs in the design and operation of integrated MEDEX primary health care systems.

B. Description

1. In order to carry out this program, the MEDEX technology will consist of the following:

- a) a set of guidelines for planning, implementing, managing, and evaluating a low-cost, integrated primary health service delivery system appropriate to the specific needs of an LDC;
- b) a prototype set of competency-based training modules for
 - (1) training MEDEX and community health workers in preventive, promotive, and curative health areas,
 - (2) Mid-level management requirements of rural primary health care systems, and
 - (3) continuing education requirements of MEDEX and community health workers;
- c) the process methodology for transferring and adapting the above to individual countries; e.g., primary health care seminars, workshops in curriculum adaptation, mid-level management, tutor training, training-site management, and continuing education.
- d) During Phase III, the contractor will establish a network of U.S. institutions having domestic MEDEX experience to increase the U.S. response capability to LDCs requesting technical assistance in implementing MEDEX primary health care systems. The prime contractor will sub-contract with network insti-

tutions for the purposes of this contract.

2. The Contractor shall provide the following specific services:

(a) Exploratory briefings in LDCs:

(1) The Contractor shall conduct a series of visits to requesting LDCs utilizing of up to two-man specialist teams to conduct informational briefings with AID Missions and host officials. Target: 4 to 8 team visits each year, totaling approximately 30 visits for the life of the project are expected.

(2) The Contractor shall conduct in depth seminars for Ministry of Health officials, health planners, and other leaders within the medical community on all or specialized aspects of MEDEX methodology with the intent to assist LDC governments to reach a decision on whether to pursue a program for improving health delivery utilizing MEDEX approaches and technology. It is intended that such seminars will usually be conducted on-site in the host country; however, the contractor is authorized to conduct the seminar on its home campus in those instances where the expanded resources of the University are considered necessary and where the travel of host country national officials can be accommodated within the existing project budget or from other sources of funding. Target: Three seminars per year on the average for a total of 15 years during the life of the project are anticipated.

(b) The Contractor shall draft, develop and produce training modules and related teaching materials for the following four specific categories of training:

(1) MEDEX Training Modules: In countries where a decision is made to pursue a MEDEX primary health care program, field test and refine 15 existing

draft MEDEX modules, and draft, field test and refine at least 5 new MEDEX modules. Targets are for 5 new draft MEDEX modules: Drafts are to be completed during the first year and all are to be ready for field testing at the beginning of the second year.

(2) Management Training Modules: Draft, field test and refine 5 training modules pertaining to management and logistic operations under conditions in (1) above. Focus of training will be toward: 1) the needs of MEDEX and mid-level Ministry of Health personnel (80%); and 2) the formulation of policy and operating regulations to be promulgated by high level MOH planners and decision makers (20%). Targets: 2nd year, 1; 3rd year, 2; 4th year, 1; and 5th year, 1.

(3) Community Health Worker (CHW) Training Modules: Draft, field test and refine 8 CHW modules under conditions in (1) above. Modules will be designed and organized for the use of MEDEX as teachers of CHW trainees. Targets are for 8 CHW modules in draft: All are to be drafted in the first year. Testing and Refinement shall be carried during the remaining LOP.

(4) Continuing Education Materials: Design, draft and test two modules to be used in a structured program geared to convey refresher information or higher levels of competency to graduate MEDEX and graduate CHW personnel. Modules are to be experience-rated by LDC MEDEX graduates with field experience and evaluated in problem solving design seminars convened for this purpose. The modules that are developed are in turn to be used and tested in the continuing education workshops described in (c)(6) below. Targets for convening seminars, workshops, and development of drafts: 2nd year, 1 draft module and

1 seminar; 3rd year, 2 workshops; 4th year, 1 draft module, 1 conference and 2 workshops; 5th year, 5 workshops.

(c) Technical assistance and leadership in conducting training programs and project planning in LDCs shall be provided as follows:

(Note: Implementation of country programs is not provided as a funded service element through this contract, though core staff and technical assistance outputs below are available to Regional Bureaus and USAID Missions with their funding travel and per diem expenses for Contractor's staff. This applies to those activities taking place following PID approval of a country project. Prior to PID approval, this contract will provide funding for all technical assistance costs to missions.)

PID (1) Technical guidance in project design to USAID Missions and/or host governments in those LDCs where a decision has been made to pursue a MEDEX Primary Health Care program.

(2) Curriculum Adaptation Workshops: Technical assistance to adapt prototype training modules and materials to country specific primary health care needs and translation of materials into local languages where needed. Target: Up to 6 Workshops, one for each country which selects the MEDEX technology approach.

(3) Teacher Training Workshops: Instruction to familiarize host country teachers in competency-based training methodology and materials. Target: Up to 8 Workshops, one for each country selected.

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(4) Management/Logistics Workshops: Training to instruct MEDEX personnel in administrative/management requirements and logistical support needs of rural primary health care systems. In addition to trained manpower, the workshops will provide means for integrating MEDEX management technology with indigenous management practices. Target: Up to 8 Workshops, one for each country selecting the MEDEX technology approach.

(5) Preceptor Deployment Workshops: a final training phase to structure clinical training experience of MEDEX; the pre-assignment of MEDEX to rural health centers; and to teach physician preceptors how to utilize and supervise MEDEX manpower. Target: Up to 8 Workshops, one for each country selecting the MEDEX technology approach.

(6) Continuing Education Workshops: A means to address the need for in-service training, and to maintain the clinical acumen of MEDEX graduates and the proficiency of graduate community health workers on a continuing basis. This program will utilize and refine the module products cited in (b)(4) above. Target: Up to 8 Workshops.

(7) Evaluation Workshops: An essential process to develop and refine the operational approach involved in data collection for the end of project evaluation and to assist in a mid-project operational assessment resulting in timely feedback to assure continual progress.

3 (d) Network strengthening and strategizing: Creation of institutional arrangements with linkages designed to function after the withdrawal of AID supports shall be accomplished as follows:

(1) Mobilization of U.S. MEDEX expertise and experience through a network organization of U.S. universities with MEDEX experience, funded through subcontracts between the prime contractor and the participating universities.

(2) Inclusion in the network of those institutions within LDCs which will have become centers of MEDEX expertise.

(e) Evaluation Protocol:

A specific evaluation protocol will be produced within the first six months of this contract and submitted to AID/DS/HEA for approval. The protocol should cover such issues as (a) Effectiveness: Did the project achieve its planned targets as articulated in the logical framework? (b) Significance: Did the project make a substantial contribution to development? (c) Efficiency: Was the cost/effectiveness satisfactory? It will include methods for assessing improvements in distribution of primary care providers and the increase in accessibility of primary health care services to rural people.

(f) Participation in Project Evaluation

The evaluation of the contractor's performance will be conducted by AID with external assistance at the end of Year 3 and Year 5. An annual review and appraisal will also be conducted by AID at the end of Years 1, 2, and 4. The Contractor will be required to provide a review of his experience and progress in producing the outputs and services required by the contract. At least four weeks in advance of any such review, the Contractor will be advised in writing by AID of the specific topics and issues on which he is expected to report and instructions on his role in the review.

(g) Special Provisions:

1) Following approval by the AID/W Contracting Officer, the Contractor is authorized to fund the costs of up to 48 man months in salary, fringe benefits and overhead, for year one and up to 60 man-months thereafter of manpower participation from those U.S. universities that may become part of the network. This manpower may be obtained through subcontracts between the prime contractor and the participating university. This will be done within the totals and limits of the Contractor's approved budget. Authority to shift funds from other budget categories for purposes of funding network manpower will be done only upon prior written approval of the AID Contract Officer with the clearance of the AID technical officer. The Contractor is authorized to convene two network group meetings for each year of the five year contract and to fund the costs of travel and per diem for network representatives for individual sessions not to exceed five days each. The AID Technical Office, AID/DS/HEA shall be notified when the meetings are to be conducted.

(2) Travel requested by the Missions; e.g., for field services projects: Prior to making any visits to LDCs, the contractor will review the plans for the visit with DS/HEA who will obtain the necessary clearances from the Regional Bureaus and the U.S. Mission(s) concerned. Upon completion of the visit(s) and prior to departing, the Contractor will orally brief the U.S. Mission(s) as to the outcome of the visit. Within thirty (30) days the contractor will submit a written report to the DS/HEA, USAID(s), and the Regional Bureau(s) concerned regarding preliminary findings and evaluation of the visit.

(3) If the travel is initiated by the contractor, the following procedure shall be followed:

Prior to making visits to LDCs, the contractor will review his plans with DS/HEA which is responsible for obtaining the necessary clearances from the concerned Regional Bureau(s), and/or U.S. Mission(s). The contractor will keep the U.S. Mission(s) fully informed of the proposed visits, ask for advice regarding timing and content of the visits, and initiate participation if it is desired. Contractor will make all appointments and logistical arrangements. He will submit copies of the trip report to the DS/HEA, U.S. Mission(s) and the Regional Bureau(s) as appropriate covering the findings and the evaluation of the LDC visit dealing with the MEDEX technology.

(4) Voucher Identification. In each instance of voucher (SF 1034) submission made by the contractor for payment hereunder, the following identification data will appear on the face of the voucher:

Contract: AID/DSPE-C-0006

Project No.: 931-1180

Project Office: DS/HEA

(5) Equipment and supplies required by the contractor will be obtained through U.S. suppliers.

C. Reports

1. Contractor shall submit three copies of all reports listed as being a product of the contract (administrative, progress, final and technical reports containing R&D findings) to the Documentation Coordinator, DS/PPU/EUI, Development Assistance, Agency for International Development, Washington, D.C. 20523, or his

designee. Such reports shall include a title page showing the title of the report, project title as set forth in this contract (or grant) and the contract number. One copy of each report shall be clearly typed or printed on white paper so that it may be photographed to produce a microfilm master. Technical reports shall be accompanied by an author-prepared abstract.

2. The following specific reports are required:

(a) Quarterly technical progress report. This report will present a narrative summary of work performed including specific reference to the provisions numbered 1 through 4 of the Specific Services to be Provided. The narrative will encompass major accomplishments, fiscal status, problems encountered, future plans, and any action believed required by AID. The fiscal data element in each report should include estimated subcontractor commitments concerning travel and consultant services to date. Quarterly reports are to be forwarded to AID on or about the 15th day following the end of each quarter. These reports should detail all domestic and foreign travel for core staff, network members and consultants.

(b) Final report. The final report will cover in detail all work accomplished under the agreement including final statements of status of teaching materials, guidelines and related products required under the various task assignments of the contract.

(c) In addition to the above reports, the AID Liaison Officer, Chief, DS/HEA, may periodically request written data relative to contract performance or oral briefing on any phase of performance or progress as may be required by AID.

(d) All reports required under the contract shall be delivered to: The Chief, Health Delivery Services, Development Support Bureau, Agency for International Development, Washington, D.C. 20523. One copy shall be forwarded to the AID/W Contracting Officer.

(e) The reports required above are in addition to those required under General Provision No. 12, "Reports," with the exception of subhead (a) (1) and (2).

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ARTICLE II - KEY PERSONNEL

A. The key personnel which the Contractor shall furnish for the performance of this contract are as follows:

Key personnel: Dr. Terence A. Rogers (Project Director)
Dr. Rodney Powell
Mr. Ernie Patrich

B. The personnel specified above are considered to be essential to the work being performed hereunder. Prior to making any change in the key personnel, the Contractor shall notify the Contracting Officer reasonably in advance and shall submit justification (including proposed substitutions) in sufficient detail to permit evaluation of the impact on the program. The listing of key personnel may, with the consent of the contracting parties, be amended from time to time during the course of the contract to either add or delete personnel, as appropriate.

C. (1) The Contractor shall obtain A.I.D.'s approval to change the principal investigator or project leader, or to continue the research work during a continuous period in excess of three months without the participation of the approved principal investigator or project leader.

(2) The Contractor shall consult with A.I.D. if the principal investigator plans to, or becomes aware that he will, devote substantially less effort to the work than anticipated in the work scope. If A.I.D. determines that the reduction of effort would be so substantial as to impair the successful prosecution of the research, A.I.D. may request a change of principal investigator, terminate the research effort or make any other appropriate modification of the research agreement.

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ARTICLE III - PERIOD OF CONTRACT SERVICES

The effective date of this Contract is July 1, 1978, and the estimated completion date of work, including final report(s), under this Contract is June 30, 1983.

ARTICLE IV - ESTIMATED CONTRACT COST AND FINANCING

The Contractor will be reimbursed for the costs incurred by him in performing services hereunder in accordance with the applicable provisions of the Schedule and the General Provisions, subject to the following limitation made in respect thereto:

- A. Total A.I.D. dollar funds available for payment and allotted to this Contract. See the clause of the General Provisions entitled "Limitation of Funds" and the article of the Schedule entitled "Budget," if applicable. \$ 902,000
- B. Estimated additional funds which may be provided, if funds are available. See the clause of the General Provisions entitled "Limitation of Funds" and the article of the Schedule entitled "Budget," if applicable. \$ 4,568,723
- Total Estimated Contract Cost \$ 5,470,723

NOTE: It is estimated that the aforesaid amounts will be sufficient to complete the work required hereunder as set forth in the Schedule article entitled "Statement of Work."

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ARTICLE V - BUDGET

<u>Category</u>	<u>From: 7/1/78</u> <u>To: 6/30/79</u>	<u>From: 7/1/79</u> <u>To: 6/30/80</u>	<u>From: 7/1/80</u> <u>To: 6/30/81</u>	<u>From: 7/1/81</u> <u>To: 6/30/82</u>	<u>From: 7/1/82</u> <u>To: 6/30/83</u>	<u>Total</u>
Salaries	\$ 342,649	\$ 380,484	\$ 399,506	\$ 419,482	\$ 440,456	\$1,982,577
Consultant fees	31,750	41,250	36,500	25,250	13,750	148,500
Fringe Benefits @ 21%, approximately	72,147	79,274	82,718	86,221	89,904	410,264
Overhead @ 35.24%	120,750	134,083	140,786	147,825	155,216	698,660
Travel and Transportation	57,250	75,000	74,000	59,500	48,000	313,750
Allowances	38,350	49,850	47,850	39,450	32,500	200,000
Other Direct Costs	42,280	44,394	46,615	48,946	51,394	233,629
Equipment, Materials, and Supplies	51,623	15,225	15,986	16,785	17,624	117,243
Subcontracts	204,000	267,780	281,160	295,200	309,960	1,358,100
TOTAL	\$ 960,799	\$1,087,340	\$1,125,121	\$1,138,659	\$1,158,804	\$5,470,723

Funds in the amount of \$902,000 are currently available and they represent the total funds authorized to be expended by the Contractor during the period 7/1/78 to 6/30/79. Subject to availability, an additional amount of \$58,799 will be made available for year one effort (see the Article of the Schedule entitled "Estimated Contract Cost and Financing" and the clause of the General Provisions entitled "Limitation of Funds"). Total contract expenditures shall not exceed the grand total of the funds available. Within the grand total, the Contractor may adjust Line Item amounts as reasonably necessary for the performance of the work.

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The Contractor also agrees to furnish data which the Contracting Officer may request on costs expended or accrued under the Contract in support of the budget information provided herein.

ARTICLE VI - NEGOTIATED OVERHEAD RATES

Establishment of Indirect Cost Rates

Pursuant to the provisions of the clause of the General Provisions of this Contract entitled "Negotiated Overhead Rates," a rate or rates shall be established for each of the Contractor's accounting periods during the term of the Contract. The rate for the initial period shall be as set forth below:

<u>Rate</u>	<u>Base</u>	<u>Period</u>
35.24%	Salaries	From: Effective Date Until Amended

ARTICLE VII - SPECIAL PROVISIONS

A. Precontract Cost

The allowable cost of performance of this contract shall include all allowable and allocable costs which have been incurred by the Contractor in anticipation of this contract on and after July 1, 1978, but prior to the execution date hereof, and which, if incurred after such date, would have been considered as items of allowable and allocable costs under Article IV of the Schedule of this contract; provided however, that such precontract costs shall not exceed an amount of \$40,129 per month.

B. Consultants

Consultant services will be reimbursed in connection with the services to be provided hereunder. No compensation for consultants will be reimbursed unless their use under the contract has the advance written approval of the Contracting Officer; and if such provision has been made or approval given, compensation shall not exceed, without specific approval of the rate by the Contracting Officer, (1) the current compensation or the highest rate of

annual compensation received by the consultant during any full year of the immediately preceding three years or (2) maximum daily salary rate of a Foreign Service Officer Class 1 whichever is less.

Note: The daily rate of a Foreign Service Class 1 is determined by dividing the annual salary by 260 days.

C. Utilization of Excess and Near Excess Foreign Currencies

Full utilization of excess and near excess foreign currencies is an objective of the U.S. Government. The U.S. Treasury Department maintains a list of those countries for which it holds currencies excess to its needs.

All expenses of the Contractor in excess or near excess currency countries, including per diem (subsistence) expenses to be reimbursed under this contract shall be funded from U.S. owned foreign currency, unless otherwise authorized in writing by the Contracting Officer. The conversion of U.S. dollars for foreign currencies shall be made by the Contractor either through the U.S. Treasury Department in Washington, D.C., the U.S. Disbursing Officer, U.S. Embassy, or the USAID Mission Controller.

Travel to, through, or from excess or near excess currency countries shall be funded from U.S.-owned foreign currency if such travel is to be reimbursed under this contract, unless otherwise authorized in writing by the Contracting Officer. The Contractor shall coordinate all plans for travel to, through, or from excess or near excess currency countries with the A.I.D. Travel and Transportation Division which will issue the necessary airline tickets when appropriate.

The use of said U.S.-owned foreign currencies will constitute a dollar charge to this contract.

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D. FEDERAL RESERVE LETTER OF CREDIT
FOR ADVANCE PAYMENT (APR. 1975)

(a) AID shall open a Federal Reserve Letter of Credit in favor of the Contractor in the amount of \$ 5,470,723 available for obligation under this contract against which the Contractor may present payment vouchers. The amount drawn by the Contractor during any calendar (month or quarter) of this contract shall not exceed \$ 100,000 without the prior written authorization of the contracting officer. The amount of the payment voucher shall not be in an amount less than \$10,000 nor more than \$1,000,000 but within the specific dollar ceiling on (monthly or quarterly) withdrawals.

(b) In no event shall the accumulated total of all such payment vouchers exceed the amount of the Federal Reserve Letter of Credit.

(c) If at any time, the contracting officer determines the Contractor has presented payment vouchers in excess of the amount or amounts allowable in (a) and (b) above, the contracting officer may: (1) cause the Federal Reserve Letter of Credit to be suspended or revoked; or (2) direct the Contractor to withhold submission of payment vouchers until such time as, in the judgment of the contracting officer, an appropriate level of actual, necessary and allowable expenditures has occurred or will occur under this contract, and/or (3) request the Contractor to repay to AID the amount of such excess. Upon receipt of the contracting officer's request for repayment of excess advance payments, the Contractor shall promptly comply with such request.

(d) Procedure for Contractor.

(1) After arranging with a commercial bank of its choice for operation under this arrangement and obtaining the name and address of the Federal Reserve Bank or branch serving the commercial bank, the Contractor shall deliver three originals of Standard Form 1194, "Authorized Signature Card for Payment Vouchers on Letters of Credit" signed by those official(s) authorized to sign payment vouchers against the Federal Reserve Letter of Credit and by an official of the Institution who has authorized them to sign.

(2) Upon execution of the contract, the Contractor shall receive one certified copy of the Federal Reserve Letter of Credit.

(3) The Contractor shall confirm with his commercial bank that the Federal Reserve Letter of Credit has been opened and is available if funds are needed.

(4) To receive payment, the Contractor shall:

(1) Periodically, although normally not during the last five days

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of the month, prepare payment vouchers (Form TUS 5401) in an original and three copies.

(ii) Have the original and two copies of the voucher signed by the authorized official(s) whose signature(s) appear on the Standard Form 1194.

(iii) Present the original, duplicate, and triplicate copy of the Form TUS 5401 to his commercial bank.

(e) Retain the quadruplicate copy of the voucher.

(5) Each drawdown should be initiated at approximately the same time that checks are issued by the organization in payment of program liabilities including those for allowable indirect costs, and in an amount approximately equal to the Federal share of such payments. Therefore, there is no necessity for the recipient organization to maintain balances of Federal cash other than the small balance necessary to provide for an element of bank float.

(6) A report of expenditures is prepared and submitted to the Office of Financial Management, within thirty days of disbursement. This report, submitted on Standard Form 1034, "Public Voucher for Purchases and Services Other Than Personal", and supported by certificates, listing of withdrawals, and documentation as required, itemizes expenditures made, identifying funds expended by line item of the approved budget and/or category supporting the agreement.

(7) The report of expenditures on Standard Form 1034 is reviewed against the contract provisions, and any disbursement improper under the contract is disallowed. The Contractor is notified of the reason for the disallowance and is directed to adjust the next periodic report of expenditures to reflect the disallowance and to reduce its next payment voucher against the Federal Reserve Letter of Credit by the amount of the disallowance.

(8) Simultaneously with the submission of the report of expenditures, the Contractor submits to the Controller a status report on the Federal Reserve Letter of Credit as of the close of the period covered by the report of expenditures. The report is prepared in the following format:

Status of Funding Report

Federal Reserve Letter of Credit (FRLC)

No. _____

Period from _____ through _____

A. Letter of Credit Position

1. Current amount of FRLC (including amendments) through reporting period \$ _____

2. Payment Vouchers on Letter of Credit presented (Form TUS 5401):

a. Credited prior to reporting period \$ _____

b. Credited during reporting period via TUS 5401 Voucher Nos. _____ through _____ inclusive \$ _____

c. Presented but not credited during report via TUS 5401's numbered _____ through _____ inclusive \$ _____

3. Total of all Payment Vouchers against FRLC credited or presented \$ _____

4. Balance of FRLC not drawn or requested this reporting period \$ _____

B. Cash Position

1. Cash on hand at beginning of period \$ _____

2. Plus: cash drawn during period \$ _____

3. Plus: refunds, rebates or other amounts received, to the extent allocable to disbursements charged against this FRLC \$ _____

4. Total cash available (sum of 1, 2, and 3) \$ _____

5. Less: disbursements during period \$ _____

6. Balance of cash on hand at close of reporting period \$ _____

7. Estimated number of days requirements covered by balance on hand (Item 6 above)
Days: _____

8. Advances to subcontractors \$ _____ (included in B. 6 above).

(f) Refund of Excess Funds

(1) If all costs have been settled under the contract and the Contractor fails to comply with the contracting officer's request for repayment of excess Federal Reserve Letter of Credit funds, the Government shall have the right, on other contracts held with the Contractor, to withhold payment of Federal Reserve Letter of Credit or other advances and/or withhold reimbursements due the Contractor in the amount of the excess being held by the Contractor.

(2) If the Contractor is still holding excess Federal Reserve Letter of Credit funds on a contract under which the work has been completed or terminated but all costs have not been settled, the Contractor agrees to:

(i) Provide within 30 days after requested to do so by the contracting officer, a breakdown of the dollar amounts which have not been settled between the Government and the Contractor. (The contracting officer will assume no costs are in dispute if the Contractor fails to reply within 30 days.);

(ii) Upon written request of the contracting officer, return to the Government the sum of dollars, if any, which represents the difference between (1) the Contractor's maximum position on claimed costs which have not been reimbursed and (2) the total amount of unexpended funds which have been advanced under the contract; and

(iii) If the Contractor fails to comply with the contracting officer's request for repayment of excess Federal Reserve Letter of Credit funds, the Government shall have the right, on other contracts held with the Contractor, to withhold payment of Federal Reserve Letter of Credit or other advances and/or withhold reimbursements due the Contractor in the amount of the excess being held by the Contractor."

E. Travel Approval

In accordance with paragraph (a) of Additional General Provision No. 9 whereunder the Contractor may not send individuals outside the United States to perform work under the contract without the prior written approval of the Contracting Officer, the Contracting Officer does, hereby, provide said approval for those individuals required to travel outside the United States; provided, however, that concurrence with the assignment of any and all said individuals outside the United States is obtained, in writing, from the cognizant technical office of A.I.D. prior to their assignment abroad.

F. Use of Government Facilities or Personnel

1. The Contractor and any employee or consultant of the Contractor is prohibited from using U.S. Government facilities (such as office space or equipment) or U.S. Government clerical or technical personnel in the performance of the services specified in the contract, unless the use of Government facilities or personnel is specifically authorized in the contract, or is authorized in advance, in writing, by the Contracting Officer.

2. If at any time it is determined that the Contractor, or any of its employees or consultants have used U.S. Government facilities or personnel without authorization either in the contract itself, or in advance, in writing, by the Contracting Officer, then the amount payable under the contract shall be reduced by an amount equal to the value of the U.S. Government facilities or personnel used by the Contractor, as determined by the Contracting Officer.

3. If the parties fail to agree on an adjustment made pursuant to this clause, it shall be considered a "dispute," and shall be dealt with under the terms of the "Disputes" clause of the contract.

ARTICLE VIII - ADDITIONAL GENERAL PROVISIONS AND ALTERATIONS IN CONTRACT

A. Add the following General Provisions

1. ATTACHMENT A entitled "Minority Business Enterprises Subcontracting Program," General Provision No. 39;
2. ATTACHMENT B entitled "Labor Surplus Area Subcontracting Program," General Provision No. 40;
3. ATTACHMENT C entitled "Small Business Subcontracting Program," General Provision No. 41;
4. ATTACHMENT D entitled "Clean Air and Water," General Provision No. 42;
5. ATTACHMENT E entitled "Patents Rights - Acquisition by the Government," General Provision No. 43;
6. Delete General Provision No. 35 "Listing of Employment Openings" and substitute in lieu thereof ATTACHMENT G entitled "Disabled Veterans and Veterans of the Vietnam Era," General Provision No. 35.

B. The General Provisions (Form AID 1420-23C (7-1-76)) of this contract are modified as follows:

1. General Provision 14, Training of Foreign Country Nationals. Add a new paragraph (e) as follows:

"(e) Mandatory use of Visa Eligibility Form DSP 66 A by participants. The Contractor shall insure that any foreign students brought to the United States for training under this Contract use Visa Eligibility Form DSP 66 A (AID version) to obtain a visa."

2. General Provision 20, Termination for Convenience of the Government. Paragraph (f) is amended by deleting the phrase "...at the rate of 6 percent per annum,..." and in its place inserting "...at the rate established by the Secretary of the Treasury pursuant to Public Law 92-41 (50 U.S.C. App. 1215(b)(2))"

for the Renegotiation Board,...."

C. The Additional General Provisions (Form AID 1420-23D (7-1-76)) of this Contract are modified as follows:

1. Additional General Provision 9, Travel Expenses:

(a) Paragraph (1)(1)(ii) is deleted in its entirety. In its place insert the following new paragraph (1)(1)(ii):

"(ii) Death, or serious illness or injury of a member of the immediate family of the employee or the immediate family of the employee's spouse. 'Serious illness or injury' and 'immediate family' are defined in accordance with Section 699.5 of the Uniform State/AID/USIA Regulations, as in effect on the date of such travel."

(b) Paragraph (1), Use of U.S. Flag Carriers, is deleted in its entirety.

2. Additional General Provision 10, Transportation and Storage Expenses:

Paragraph (d)(1), International Air Transportation, is deleted in its entirety.

3. Additional General Provision 17, Insurance - Workmen's Compensation, Private Automobiles, Marine, and Air Cargo is amended by deleting paragraph (a), Workmen's Compensation Insurance, in its entirety. In its place, insert the attached clause entitled "Workmen's Compensation Insurance (Defense Base Act) (Dec. 1977)."

4. Additional General Provision 18, Preference for U.S. Flag Air Carriers, is attached hereto and is incorporated into the Additional General Provisions of this Contract.

5. Delete Additional General Provision No. 15 "Title to and Care of Property."

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1. AMENDMENT/MODIFICATION NO. 8	2. EFFECTIVE DATE See Blk. 19	3. REQUISITION/PURCHASE REQUEST NO. PIO/T No. 3611325-1	4. PROJECT NO. (If applicable) 931-1180
5. ISSUED BY Contracting Officer Central Operations Division - PE Agency for International Development Washington, DC 20523		6. ADMINISTERED BY (If other than block 5) Technical Office S&T/HEA	

7. CONTRACTOR NAME AND ADDRESS The University of Hawaii at Manoa Spalding Hall, 357 2540 Malie Way Honolulu, Hawaii 96822	8. <input type="checkbox"/> AMENDMENT OF SOLICITATION NO. _____ DATED _____ (See block 9) <input checked="" type="checkbox"/> MODIFICATION OF CONTRACT/ORDER NO. AID/DSPE-C-0006 DATED 7/1/78 (See block 11)
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9. THIS BLOCK APPLIES ONLY TO AMENDMENTS OF SOLICITATIONS

The above numbered solicitation is amended as set forth in block 12. The hour and date specified for receipt of Offers is extended, is not extended. Offerors must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation, or as amended, by one of the following methods:

(a) By signing and returning _____ copies of this amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE ISSUING OFFICE PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If, by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided such telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

10. ACCOUNTING AND APPROPRIATION DATA (If required)

N/A Amount Obligated -0-

11. THIS BLOCK APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS

(a) This Change Order is issued pursuant to _____
The Changes set forth in block 12 are made to the above numbered contract/order.

(b) The above numbered contract/order is modified to reflect the administrative changes (such as changes in paying office, appropriation data, etc.) set forth in block 12.

(c) This Supplemental Agreement is entered into pursuant to authority of The Foreign Assistance Act of 1961, as amended, and Executive Order 11223.
It modifies the above numbered contract as set forth in block 12.

12. DESCRIPTION OF AMENDMENT/MODIFICATION

A. COVER PAGE

On the cover page delete the General Provisions (Form AID 1420-23C, dated 7-1-76) and the Additional General Provisions (Form AID 1420-23D, dated 7-1-76) and in lieu thereof insert the attached General Provisions (Form AID 1420-23C dated 10/81) and Additional General Provisions (Form AID 1420-23D dated 10/81).

B. ARTICLE I - STATEMENT OF WORK

The following changes are hereby made to this Article:

1. Under subhead "A. Objective," add the following to the first sentence:

"and to provide technical assistance for selected component parts of other

Except as provided herein, all terms and conditions of the document referenced in block 8, as heretofore changed, remain unchanged and in full force and effect.

13. CONTRACTOR/OFFEROR IS NOT REQUIRED TO SIGN THIS DOCUMENT CONTRACTOR/OFFEROR IS REQUIRED TO SIGN THIS DOCUMENT AND RETURN 6 COPIES TO ISSUING OFFICE

14. NAME OF CONTRACTOR/OFFEROR V. Carl Bloede UNIVERSITY OF HAWAII	17. UNITED STATES OF AMERICA John H. Pittenger
BY _____ (Signature of person authorized to sign)	BY _____ (Signature of Contracting Officer)

15. NAME AND TITLE OF SIGNER (Type or print) V. Carl Bloede Contracts Officer	16. DATE SIGNED 28 1982	18. NAME OF CONTRACTING OFFICER (Type or print) John H. Pittenger	19. DATE SIGNED pn FEB 10 1982
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health manpower development and primary health care service delivery programs as requested by AID Missions."

2. Under subhead "B. Description," "paragraph 2,(b)," add the following:

"The Contractor shall draft, develop and produce 200 sets of training modules and related teaching materials, etc., which have approval of the cognizant technical office before final production."

3. Add the following paragraph "(6)" to subhead "(g)".

"(6) Technical Assistance in Manpower Development

Technical Assistance will be provided for selected component parts of health manpower development and primary health care service delivery programs in response to LDC and AID Mission requests."

C. Delete "ARTICLE V - BUDGET" in its entirety and in lieu thereof insert the attached "ARTICLE V - BUDGET".

D. Delete "ARTICLE VIII - ADDITIONAL GENERAL PROVISIONS AND ALTERATIONS IN CONTRACT" in its entirety and in lieu thereof insert:

"ARTICLE VIII - ALTERATIONS IN CONTRACT"

- A. Add the following General Provisions:

1. "Patent Rights - Acquisition by the Government," (General Provision 29);
2. "Minority Business Enterprises Sub-contracting Program," (General Provision 48);
3. "Labor Surplus Area Sub-contracting Program," (General Provision 49);

4. "Small Business Sub-Contracting Program," (General Provision 50).

B. Attached hereto and incorporated hereunder is "Alterations in Contract (AIDPR 7-7.5003-1) (DEC 1970), November, 1981, Attachment to AID 1420-23, Cost Reimbursement Contract with an Educational Institution."

E. All other terms and conditions of the contract remain unchanged.

Article V - Budget

	<u>7/1/78- 6/30/79</u>	<u>7/1/79- 6/30/80</u>	<u>7/1/80- 6/30/81</u>	<u>7/1/81- 6/30/82</u>	<u>7/1/82 6/30/83</u>	<u>Total</u>
Salaries	\$263,713	\$433,792	\$503,109	\$741,850	\$816,041	\$2,758,515
Consultant Fees	18,018	18,446	41,393	30,250	13,750	121,857
Fringe Benefits	46,109	61,339	78,971	126,115	138,727	451,261
Overhead	76,985	111,110	127,036	162,262	182,294	659,687
Office Rent	21,669	57,750	50,892	75,870	80,200	286,381
Travel & Transportation	28,224	52,344	76,151	56,911	53,174	266,804
Allowances	22,238	10,228	22,324	37,301	35,896	127,987
Other Direct Costs	51,389	48,187	23,690	63,690	138,610	325,566
Equipment Materials & Supplies	67,908	25,879	25,863	27,023	25,261	171,934
Subcontracts	--	119,291	112,869	293,571	--	525,731
TOTAL	<u>\$596,253</u>	<u>\$938,366</u>	<u>\$1,062,298</u>	<u>\$1,614,853</u>	<u>\$1,483,953</u>	<u>\$5,695,723</u>

Within the total amount obligated of \$4,304,400 the Contractor may adjust line item amounts as reasonably necessary for the performance of work under this contract. Total contract expenditures shall not exceed the grand total of funds available. Subject to availability, \$1,391,323 will be made available for the completion of the project. (See the Article of the Schedule entitled "Estimated Cost and Financing" and the clause of the General Provisions entitled "Limitation of Funds"). The Contractor also agrees to furnish data which the Contracting Officer may request on costs expended or accrued under the contract in support of the budget information provided herein."

APPENDIX I

MEDEX PHASE III, Contract No. AID/DSPE-C-0006
 Quarterly Report #20, April - June 1983

VI. STATUS OF MODULE DEVELOPMENT *June*
 Summary of module activities for Quarter #20, April - ~~May~~ 1983

<u>Volume Number</u>	<u>Volume Title</u>	<u>Scheduled AID Delivery</u>	<u>Active This Quarter?</u>	<u>Current Status</u>
1.	The MEDEX Primary Health Care Series: An Overview (revised)	Jun 1983	Yes	Typeset, pasted up, printed. Delivered to AID, June 1983. (Original "Overview" delivered to AID, March 1982.)
I. SYSTEMS DEVELOPMENT MATERIALS				
2.	Management Analysis Training Module (Student Text and Instructor's Manual)	Jun 1983	Yes	Typeset and pasted up. Being printed.
3.	Drugs and Medical Supplies System Workbook; General Supplies System Workbook; Facilities and Equipment Maintenance Workbook; Transportation System Workbook	Jun 1983	Yes	Typeset and pasted up. Being printed.
4.	Communication System Workbook; Personnel System Workbook; Finance System Workbook; Health Information System Workbook	Jun 1983	Yes	Typeset and pasted up. Being printed.
5.	District and National Planning and Management Workshops Manual	Jun 1983	Yes	Pasted up and printed. Delivered to AID, June 1983.
II. MID-LEVEL HEALTH WORKER TRAINING MATERIALS				
A. <u>Training Program Development Manuals</u>				
6.	Training Process Manual	Jun 1983	Yes	Typeset, illustrated, pasted up, printed.

- 7. Continuing Education Manual Jun 1983 Yes Typeset and pasted up. Being printed.
- 8. Training Evaluation Jun 1983 Yes Typeset and pasted up. Being printed.

B. Community Health Needs

- 9. Identifying the Preventive Health Needs of the Community; Meeting the Preventive Health Needs of the Community; Training and Supporting Community Health Workers (Student Text) May 1983 Yes Printed. Delivered to AID, June 1983.
- 10. Identifying the Preventive Health Needs of the Community; Meeting the Preventive Health Needs of the Community; Training and Supporting Community Health Workers (Instructor's Manual) May 1983 Yes Printed. Delivered to AID, June 1983.

C. Basic Clinical Modules

- 11. Anatomy and Physiology; Medical History (Student Text) Apr 1983 Yes Printed. Delivered to AID, April 1983.
- 12. Physical Examination (Student Text) Apr 1983 Yes Printed. Delivered to AID, April 1983.
- 13. Anatomy and Physiology; Medical History; Physical Examination (Instructor's Manual) Apr 1983 Yes Printed. Delivered to AID, April 1983.

D. General Clinical Modules

- 14. Respiratory and Heart; Gastrointestinal; Gastrourinary (Student Text) Jul 1982 -- Delivered to AID, July 1982.

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|------|--|----------|-----|---|
| 15. | Respiratory and Heart;
Gastrointestinal;
Gastrourinary
(Instructor's Manual) | Jul 1982 | -- | Delivered to AID, July 1982. |
| 16. | Skin; Dental, Eyes,
Ears, Nose and Throat
(Student Text) | Apr 1982 | -- | Delivered to AID, March 1982. |
| 17. | Skin; Dental, Eyes,
Ears, Nose and Throat
(Instructor's Manual) | Apr 1982 | -- | Delivered to AID, March 1982. |
| 18. | Infectious Diseases;
Other Common Problems
(Student Text) | Nov 1982 | -- | Delivered to AID, December 1982. |
| 19. | Trauma and Emergency
(Student Text) | Nov 1982 | -- | Delivered to AID, December 1982. |
| 20. | Infectious Diseases;
Trauma and Emergency;
Other Common Problems
(Instructor's Manual) | Nov 1982 | -- | Delivered to AID, December 1982. |
|
 | | | | |
| E. | <u>Maternal and Child</u>
<u>Health Modules</u> | | | |
| 21. | Prenatal Care;
Labor and Delivery;
Postnatal Care
(Student Text) | May 1983 | Yes | Printed and delivered to AID, May 1983. |
| 22. | Prenatal Care;
Labor and Delivery;
Postnatal Care
(Instructor's Manual) | May 1983 | Yes | Printed and delivered to AID, May 1983. |
| 23. | Problems of Women;
Diseases of Infants
and Children; Child
Spacing (Student Text) | Aug 1982 | -- | Delivered to AID, August 1982. |
| 24. | Problems of Women;
Diseases of Infants
and Children; Child
Spacing (Instructor's
Manual) | Aug 1982 | -- | Delivered to AID, August 1982. |

F. Health Center Management Modules

- | | | | | |
|-----|--|----------|-----|--|
| 25. | Working with the Health Team; Working with Support Systems (Student Text) | Oct 1982 | — | Delivered to AID, November 1982. |
| 26. | Working with the Health Team; Working with Support Systems (Instructor's Manual) | Oct 1982 | — | Delivered to AID, November 1982. |
| 27. | Supervising and Supporting Mid-Level Health Workers (Student Text and Instructor's Manual) | Jun 1983 | Yes | Pasted up and printed.
Delivered to AID, June 1983. |

G. Reference Guides

- | | | | | |
|-----|---|----------|-----|--|
| 28. | Formulary; Diagnostic and Patient Care Guides | Jun 1983 | Yes | Typeset, illustrated, pasted up, printed. |
| 29. | Patient Care Procedures | Jun 1983 | Yes | Typeset, illustrated, and pasted up.
Being printed. |
| 30. | Health Center Operations | Oct 1982 | — | Delivered to AID, December 1982. |
| 31. | Community Health | Jun 1983 | Yes | Typeset, illustrated, pasted up, printed. |

III. COMMUNITY HEALTH WORKER TRAINING MATERIALS

- | | | | | |
|-----|--|----------|-----|---|
| 32. | Introduction to Training; Clean Water and Clean Community; Prevention and Care of Diarrhea | Jan 1983 | — | Delivered to AID, December 1982. |
| 33. | Healthy Pregnancy; Feeding and Caring for Children | May 1983 | Yes | Printed and delivered to AID, May 1983. |
| 34. | Some Common Health Problems; Tuberculosis and Leprosy; First Aid | May 1983 | Yes | Typeset, illustrated, pasted up, printed. |

35. Community Learning Materials: June 1983 Yes

a. Health Problems in the Community

Written and approved. Typeset, illustrated, pasted up, and printed. Delivered to AID, June 1983.

b. Caring for Your Child

Printed. Delivered to AID, June 1983.

c. Caring for Your Sick Child

Written and approved. Typeset, illustrated, and pasted up. Being printed.

d. Clean Home and Clean Community

Written and approved. Typeset, illustrated, and pasted up. Being printed.

e. Illustrations for Training CHWs

Introduction written and illustrations drawn. Approved and typeset and pasted up.

APPENDIX J

LOGICAL FRAMEWORK

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions																		
<p>Program or Sector Goal: The broader objective to which this project contributes:</p> <p>To increase accessibility, availability and acceptability of primary health care services to the rural poor peoples of the world through the training, deployment and support of mid-level (medex) and community (village) level health workers in an integrated health delivery system at a cost which developing countries can support without prolonged external assistance.</p>	<p>Measures of Goal Achievement:</p> <p>50% Improved distribution of primary health service resources (personnel, facilities, equipment, supplies, etc.) and increased patient encounters for curative and preventive services 5 years after implementation of MEDEX system in country.</p>	<ol style="list-style-type: none"> 1. MOH records of capital and recurrent budget expenditures. 2. MOH records of patient encounters per health facility. 3. MOH and Central Planning Office records regarding population distribution and movement. 4. Field visits to rural health facilities and direct observation of rural health delivery system conditions related to management support infrastructure (supplies, equipment, supervision, transportation) accessibility, availability and acceptability of health services, and preventive/promotive activities of mid-level (medex) and community (village) level health workers. 	<p>Assumptions for achieving goal targets:</p> <ol style="list-style-type: none"> 1. MOH maintains political and financial support for Central Planning Office for expanded national rural health care delivery system. 2. MOH develops and maintains adequate administrative/management and logistical support infrastructure of expanded rural health delivery system. 3. MOH capital and recurrent budget expenditures are equitable in terms of population distribution and density. 4. MOH selection of candidates trained as mid-level (medex) health workers and community selection of community (village) level health workers emphasizes social criteria that maximize retention of trained workers in rural areas. 																		
<p>Project Purpose:</p> <ol style="list-style-type: none"> 1. To complete the development of the MEDEX technology started in Phases I and II of previous AID funded contracts. 2. To provide technical assistance to selected LDC's in the design and operation of mitigated MEDEX primary health care systems. 	<p>BOPS:</p> <ol style="list-style-type: none"> 1. Eight LDC's will have established operational MEDEX primary health care systems. 	<ol style="list-style-type: none"> 1.a) Contractor trip reports and program documentation. b) Contractor assistance in project documentation (PID, PP, Pro Ag) in LDC's receiving USAID assistance. c) Other donor program documentation to LDC's utilizing MEDEX technical assistance. d) Field visits and direct observation of LDC's utilizing MEDEX approach. 	<ol style="list-style-type: none"> 1. USAID and other donors continue to support rural development projects such as primary health care delivery systems. 2. LDC's continue to give priority to development of programs to improve and expand rural primary health care systems. 3. Political climate and internal stability in LDC's remain conducive to external technical assistance. 4. LDC's are receptive to cooperative network and consortium model for technical assistance. 5. LDC's alone or with USAID and/or other donor assistance are prepared to bear the ultimate cost of expanding their health care systems using the MEDEX technology implied by acceptance of this TA. 																		
<p>Outputs</p> <ol style="list-style-type: none"> 1. In-depth exposure of selected countries to the integrated MEDEX primary health care systems. 2. Field trials, refinement and completion of the competency-based training modules for mid-level health workers. 3. Development of competency-based training modules for community (village) level health workers (CHWs). 4. Development of competency-based training modules for the mid-level MOH management requirements in the MEDEX health delivery scheme. 5. Development of a cooperative network of LDC MEDEX programs to provide cross assistance collaboration and consultation in program design and implementation. 6. Development of a cooperative network of LDC MEDEX programs to provide cross assistance collaboration and consultation in program design and implementation. 7. Heighten the technical assistance capability of USAID and other donors in improving and expanding rural primary health care services in LDC's through the development of a consortium of MEDEX programs. 8. Assistance to USAID in the project preparations (PID, PP, Pro Ag) selected countries in improving and expanding the delivery of primary health care services. 	<p>Magnitude of Outputs</p> <ol style="list-style-type: none"> 1.a) 30 reconnaissance visits to LDC's to discuss MEDEX approach to primary health care services. b) 8 seminars in primary health care and MEDEX manpower training. c) 8 curriculum adaptation workshops. d) 8 teacher training workshops. e) 8 preceptor and deployment workshops. f) 8 management workshops for logistical support of primary health care services. g) 8 continuing education workshops. h) 8 evaluation workshops. 2. 20 prototype MEDEX training modules published for use in curriculum design and training of mid-level health workers. 3. 8 prototype CHW training modules drafted and field tested. 4. 5 prototype management modules drafted and field tested. 5. 2 continuing education conferences and a first draft of 2 prototype modules for designing and planning continuing education needs of primary health care workers. 6. LDC MEDEX programs linked in a cooperative network to assist each other. (5 international conferences to facilitate development) 7. 3 or more USA institutions linked in a consortium to provide technical assistance to other LDC's in the MEDEX primary health care delivery system (9 conferences to facilitate development). 8. Technical assistance to 8 countries in project development (PID, PP Pro Ag). 	<ol style="list-style-type: none"> 1. Contractor trip reports and program documentation. Seminar and workshop records and reports. 2. Published MEDEX prototype training modules. 3. CHW prototype training modules. 4. Management prototype modules. 5. Continuing education prototype modules. 6. Reports of cooperative network activities. Field visits and direct observation. 7. Reports of consortium activities. Field visits and direct observation. 8. Review of Project development documents (PID, PP, Pro Ag). 	<ol style="list-style-type: none"> 1. USAID missions continue to promote development of rural primary health care services and improvement of the health sector as part of the Development Assistance Plan (DAP). 2. LDC's continue to give priority to improving and expanding rural primary health care services and are able to economically support the recurrent expenditures of an improved rural health sector. 3. Other donors maintain their commitment to provide technical assistance in improving and expanding primary health care services. 4. Political climate and internal stability in LDC's remain conducive to external technical assistance. 																		
<p>Inputs</p> <ol style="list-style-type: none"> 1. Budget from USAID <ul style="list-style-type: none"> Personnel Fringe Benefits Consultants Travel & Per Diem Other Direct Costs OH Overhead OIH Overhead 2. MEDEX guidelines 3. MEDEX training technology 4. Consultation from selected USA institutions to begin implementation of consortium 	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">1. Budget</td> <td style="width: 50%;"></td> </tr> <tr> <td>Personnel</td> <td style="text-align: right;">\$3,150,402</td> </tr> <tr> <td>Fringe Benefits</td> <td style="text-align: right;">631,681</td> </tr> <tr> <td>Consultants</td> <td style="text-align: right;">243,125</td> </tr> <tr> <td>Travel & Per Diem</td> <td style="text-align: right;">\$17,750</td> </tr> <tr> <td>Other Direct Costs</td> <td style="text-align: right;">381,271</td> </tr> <tr> <td>OH Overhead</td> <td style="text-align: right;">663,264</td> </tr> <tr> <td>OIH Overhead</td> <td style="text-align: right;">8,864</td> </tr> <tr> <td style="text-align: center;">TOTAL</td> <td style="text-align: right;">\$3,694,357</td> </tr> </table>	1. Budget		Personnel	\$3,150,402	Fringe Benefits	631,681	Consultants	243,125	Travel & Per Diem	\$17,750	Other Direct Costs	381,271	OH Overhead	663,264	OIH Overhead	8,864	TOTAL	\$3,694,357	<ol style="list-style-type: none"> 1. USAID records provide accounting verification. 	<ol style="list-style-type: none"> 1. USAID inputs will be available in a timely fashion.
1. Budget																					
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Fringe Benefits	631,681																				
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APPENDIX K

Health Manpower Development Staff University of Hawaii

Dr. Richard A. Smith, Project Director
Dr. Rodney N. Powell, Deputy Director
Dr. Mona R. Bomgaars, Executive Officer for Development until 1/30/81
Dr. Eugene R. Boostrom, Systems Development Specialist; on IPA contract 11/18/81
to 6/29/83
Mr. John F. Rich, Program Officer until 8/01/81
Mr. Ernest E. Petrich, Systems Development Director until 5/05/82
Mr. Thomas G. Coles, Jr., Manpower Development Director
Dr. Joyce V. Lyons, Manpower Development Director until 4/23/82
Ms. Marian D. Morgan, Guyana Project Director; not charged to CORE project
Ms. Rosemary A. DeSanna, Lesotho Project Director; not charged to CORE project
Mr. Frank R. White, Jr., Business Manager
Mr. David R. Alt, Curriculum Development & Production Director until 3/09/83
Mr. Sunil Mehra, Communications Development Director
Mr. Albert Neill, Systems Development Director
Mr. Patrick B. Dougherty, Systems Development Specialist
Dr. Robert W. Mack, Evaluation Development Director
Mr. Ricahrd D. McNeill, Writer/Editor until 4/18/83
Mr. Gregory A. Miles, Manpower Development Specialist
Mr. Kenneth A. Miyamoto, Development Education Design Specialist
Mr. David Nelson, Writer/Editor
Ms. Allison L. Greenspan, Writer/Editor and Production Director
Ms. Linda H. Oshiro, Executive Assistant

APPENDIX L

PROPOSAL FOR AN INSTITUTIONAL SUPPORT GRANT
1 MARCH 1983

EXHIBIT 1

REQUESTS ACCORDING TO COUNTRY

<u>AUSTRALIA</u> Northern Territory Department of Health	<u>DOMINICAN REPUBLIC</u> USAID
<u>BANGLADESH</u> CARE-MEDYCO National Anti Tuberculosis Association USAID CARE Medico Team MOH-Director of Nursing Services	<u>ECUADOR</u> HCJB USAID MOH SESP Project
<u>BARBADOS</u> Ministry of Health USAID	<u>EGYPT</u> Faculty of Medicine, Suez Canal University Ministry of Health
<u>BELGIUM</u> Institute of Tropical Medicine Damien Foundation	<u>ENGLAND</u> Ross Institute of Tropical Hygiene, London School of Hygiene and Tropical Medicine Liverpool School of Tropical Medicine The Slade Hospital Commonwealth Nurses Federation, Royal Commonwealth Society David Morley Commonwealth Secretariat Ross Institute of Tropical Hygiene University of Birmingham Nuffield Centre for Health Services Studies Institute of Development Studies Management Development and Training International Hospital Federation Overseas Development Administration
<u>BOLIVIA</u> Andean Rural Health Project	<u>FIJI</u> Ministry of Health
<u>BOTSWANA</u> Ministry of Health	<u>FRANCE</u> Centre International De L'enfance
<u>BRASIL</u> Director of Community Health Programs USAID MOH CPA/IMC	<u>GAMBIA</u> Medical Headquarters
<u>BURMA</u> USAID MOH HOTA Project	<u>GERMANY</u> German Agency for Technical Cooperation
<u>CAMEROON</u> Pan African Institute for Development	<u>GUYANA</u> USAID MOH MEDEX Program
<u>CENTRAL AFRICAN REPUBLIC</u> Tandala Hospital	<u>GHANA</u> University of Ghana
<u>COLOMBIA</u> CINDER USAID	<u>GUATEMALA</u> Ministerio de Salud Publica de Guatemala USAID
<u>CONGO</u> World Health Organization	
<u>COOK ISLANDS</u> Government of the Cook Islands	
<u>DENMARK</u> DANIDA	

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HAITI
USAID

MOH
Rural Health Project
Urban Health Project
State University of Haiti for
Adaptation

INDIA

Voluntary Health Association of India
Community Health Nursing Faculty,
Christian Church
United Theological College
USAID
MOH
Training Program

INDONESIA

The Ford Foundation
Ministry of Health
Health Services Research and
Development Centre

IVORY COAST

SHDS Project
African Development Bank

JAMAICA
PAHO/WHO
USAID

JAPAN

WHO/Japan International Tuberculosis
Course

JORDAN

USAID
Westinghouse Training Project

KENYA

African Medical and Research Foundation
CORAT Africa
UNICEF, Eastern Africa Regional Office
Health & Better Living Services
Ministry of Health
National Nurses Association of Kenya
USAID

KIRABATI

Ministry of Health and Family Planning
World Health Organization

KOREA

Busan National University

LIBERIA

Ministry of Health & S.N.
USAID
MOH
Tuaman: Phoebe Hospital

MALAWI

Ministry of Health

MALI

USAID

MAURITANIA

USAID
PHC Office
MOH Nursing School

MEXICO

USAID
Family Planning Program

MOZAMBIQUE

Universidade Eduardo Mondlane

NAURU

Nauru General Hospital

NEPAL

Nepal Red Cross Society
USAID
Institute of Medicine
CHIP
MCH Unit Mission

NETHERLANDS

Royal Tropical Institute

NEW GUINEA

Division of Health
National Health Department
University of PNG
College of Allied Health Sciences
Nurses Association

NEW ZEALAND

Department of Health

NIGERIA

University of Ibadan
Ahmadu Bello University, Zaria
College of Medicine, University of Lagos
University of Ibadan, Department of Medicine
World Health Organization
Christian Reformed World Missions
Ministry of Health

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OMAN

Ministry of Health

PAKISTAN

USAID

National Basic Health Services

PANAMA

USAID

PERU

Oficina De Intercambios Internacionales

PHILIPPINES

Asian Development Bank

Southwestern University

Davao Medical School Foundation

PORTUGAL

Instituto De Higiene E. Medicina Social

SAUDI ARABIA

KMCC, Saudi Medical Services, Ltd.

SEYCHELLES

Ministry of Health

SOLOMON ISLANDS

Ministry of Health & Medical Services

SOUTH AFRICA

University of the Witwatersrand

Tintswalo Hospital

SRI LANKA

Saukyadana Movement, Medical Aid Movement

SUDAN

USAID

MOH

SURINAME

Bureau of Public Health

SWAZILAND

Ministry of Health

SWEDEN

International Child Health,
University of Hospital

SWITZERLAND

Swiss Tropical Institute

Comite International, De La Croix-Rouge

Cladine Brelet

Managerial Process for National Health
Development

Catholic Relief Services

International Federation of National Red

Cross & Red Crescent Societies

World Health Organization

Aga Khan Foundation

International Council of Nurses

TANZANIA

Behavioural Science Department

Centre for Educational Development in
Health

Commonwealth Regional Health Secretariat

Medical Assistant Training Centre

Eastern and Southern African Management
Institute

THAILAND

American Baptist Foreign Mission Society

Catholic Relief Services

Ministry of Public Health

USAID

MOH-PHC FP Nursing Health Training

TONGA

Tonga Health Training Centre

TRINIDAD

University of the West Indies

TURKEY

Hacettepe University

TUNIS

GOT PHC Project

USAID

UGANDA

Opit Health Center

Accord Kampala

UPPER VOLTA

USAID

MOH

YEMEN

Catholic Institute for International
Relations

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YUGOSLAVIA

A. Stampar School of Public Health

ZAIPE

Basic Rural Health Project

USAID

ZAMBIA

PHC Specialist

Ministry of Health

Mwachisompola Health Demonstration Zone

National Food & Nutrition Commission

ZIMBABWE

Zimbabwe Nurses Association

02-28-83

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EXHIBIT 11

REQUESTS FROM ORGANIZATIONS

<u>Agency</u>	<u>Modules</u>	<u>Training</u>
1. American Baptist Foreign Mission Society	X	
2. Damien Foundation	X	
3. CIMDER	X	X
4. World Health Organization/Nigeria	X	X
5. The Ford Foundation	X	
6. African Medical and Research Foundation	X	
7. African Development Bank		
8. Health and Better Living Services	X	X
9. Pan African Institute for Development	X	X
10. AUPHA	X	X
11. The Slade Hospital	X	
12. Christian Children's Fund	X	
13. CARE	X	X
14. World Vision International	X	
15. World Bank	X	X
16. Hesperian Foundation	X	
17. Sisters of St. Mary	X	
18. James Howard Associates, Inc.	X	
19. Community Health Clinics, Inc.	X	
20. SIM International	X	X
21. National Council of Churches	X	X
22. Medical Mission Sisters	X	
23. Intercontinent	X	
24. Compassion International	X	

PROPOSAL FOR AN INSTITUTIONAL SUPPORT GRANT
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<u>Agency</u>	<u>Modules</u>	<u>Training</u>
25. Sudan Interior Mission	X	
26. Notre Dame India Mission	X	
27. Transcentury Corporation	X	X
28. International Center for Training in Population and Family Health	X	X
29. DANIDA	X	X
30. ALM, Inc.	X	
31. World Health Organization, Regional Office for Africa, Brazzaville	X	
32. KQMC	X	X
33. Aga Khar Foundation	X	X
34. Andean Rural Health Project	X	
35. Accord Kampala	X	
36. Catholic Relief Services, Thailand	X	
37. Health Services International, Inc.	X	X
38. CARE-MEDICO, Bangladesh	X	X
39. Management Sciences for Health	X	X
40. Centre for Educational Development in Health	X	
41. Nuffield Centre for Health Services Studies	X	X
42. Management Development & Training	X	X
43. CORAT Africa	X	
44. Commonwealth Nurses Federation	X	
45. Catholic Institute for International Relations	X	X
46. International Science and Technology Institute	X	X
47. Project Hope	X	
48. International Committee of the Red Cross	X	
49. International Council of Nurses	X	

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<u>Agency</u>	<u>Modules</u>	<u>Training</u>
50. Managerial Process for National Health and Development	X	
51. Institute of Primary Health Care, Davao City	X	
52. UNICEF/Eastern Africa Regional Office	X	
53. Christian Reformed World Missions	X	X
54. Mission Aviation Fellowship	X	X
55. APHA	X	
56. Seventh Day Adventists	X	X
57. Commonwealth Regional Health Secretariat for East, Central and Southern Africa	X	
58. Salvation Army (SASWO)	X	X
59. Catholic Relief Services/New York	X	
60. Save the Children	X	X
61. Foster Parents	X	X
62. International Hospital Federation	X	X
63. MAP International	X	
64. Pontifical Council	X	
65. Catholic Relief Services-USCC/Geneva	X	
66. Catholic Relief Services/New York	X	
67. Pan American Health Organization	X	X
68. National Nurses Association of Kenya	X	X
69. IDRC Library Serials	X	
70. Fundacao Esperanca	X	
71. Social Development Division Canadian International Development Agency	X	X
72. Eastern and Southern African Management Institute	X	X

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<u>Agency</u>	<u>Modules</u>	<u>Training</u>
73. Nurses Association	X	X
74. International Committee of the Red Cross	X	X
75. International Council of Nurses	X	X
76. Zimbabwe Nurses Association	X	X
77. Community Service Society, Cairo	X	X

EXHIBIT 111

REQUESTS FOR MODULES AND TRAINING
FROM USAID MISSIONS

<u>Country</u>	<u>Modules</u>	<u>Training</u>
Bangladesh	X	
Barbados	X	
Brazil	X	
Burma	X	
Colombia	X	
Dominican Republic	X	
Ecuador	X	X
Guatemala	X	
Guyana	X	
Haiti	X	
Honduras	X	
India	X	
Indonesia	X	X
Jamaica	X	
Jordan	X	X
Kenya	X	
Liberia	X	
Mali	X	
Mauritania	X	
Mexico	X	
Morocco	X	
Nepal	X	X
Pakistan	X	
Philippines	X	X
Sri Lanka	X	X
Sudan	X	
Thailand	X	X
Tunisia	X	
Upper Volta	X	X
Zaire	X	
Egypt	X	X

Appendix M

List of People Interviewed

Dr. Richard A. Smith, Director

Dr. Rodney N. Powell, Deputy Director

Mr. Frank R. White, Business Manager

Mr. Thomas G. Coles, Jr., Health Manpower Development Specialist

Mr. Patrick B. Dougherty, Primary Health Care Operations Management Specialist

Mr. Albert Neill, Primary Health Care Operations Management Specialist

Mr. Sunil Mehra, Communications/Community Health Specialist

Mr. Gregory Miles, Health Education and Training

Ms. Marian De Walt-Morgan, Guyana Project Director

Ms. Rosemary A. DeSanna, Lesotho Project Director

Ms. Pamela T. Prescott, Systems Development Specialist

Dr. D. Michael O'Byrne, Curriculum Development and Training
(Formerly associated with project)

Dr. Eugene R. Boostrom, MD (Formerly associated with project)

Dr. Jack LeSar, MD (Formerly associated with project)

Dr. Joyce V. Lyons, PhD, Manpower Development Specialist
(Formerly associated with project)

Dr. Walter Chin, Chief Medical Officer, Ministry of Health,
Guyana