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## University of Hawaii at Manoa

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QUARTERLY REPORT #14

(October - December 1981)

MEDEX PHASE III, Primary Health Care Systems  
Contract No. AID/DSPE-C-0006

2.(a)(1) Exploratory briefings in LDCs; informational briefings with AID Missions and host officials:

HMDS's information package was distributed this quarter. We sent

- 45 kits to 39 USAID missions
- 93 kits to 79 ministries of health
- 99 kits to universities, institutes, training centers, and concerned individuals in 49 developing countries
- 83 kits to 76 private domestic (U.S.-based) organizations
- 26 kits to 24 private international organizations

To date, we have received 44 responses to the information package mailout (see Annex A).

Dr. Richard Smith attended the African Regional Health Officers Conference in Lome, Togo, November 16-21. This conference was convened to provide a continuing education training program on primary health care for USAID health officers, USAID contract employees, and host country nationals from African Ministries of Health. Dr. Smith made a presentation on the management and manpower materials being developed by HMDS, and discussed HMDS's technical assistance capabilities available to the missions. Mr. Hottle and Ms. Rankhethoa, of the MEDEX/Lesotho project, also attended this meeting.

Enroute to Maseru (see Section III.D.), Drs. Smith and Terence Rogers met November 23 in Nairobi, Kenya, with Dr. Reginald Gipson, a planner with the Ministry of Health. Dr. Smith also met with Dr. Rose Britanek, the newly arrived AID health officer. In both of these meetings, discussions were held relating to primary health care programs planned and underway in Kenya.

Mr. Ernest Petrich prepared a briefing paper for Dr. Jarrett Clinton, AID/Washington. See Annex B.

2.(a)(2) Exploratory briefings in LDCs; seminars for Ministry of Health officials, health planners, and other leaders within the medical community;

No action this quarter.

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

2.(b)(1) MEDEX Training Modules:

The Framework Paper was reviewed by the Curriculum Board, and changes recommended by the Board were incorporated into the paper.

The Curriculum Board approved the DEENT module.

Common Skin Problems was typeset this quarter by the University Press of Hawaii.

The medical, educational, and communication associate reviews have been completed for Respiratory and Health Problems and for Diseases of Infants and Children.

Consultant Dr. Mona Bomgaars performed the final medical associate review of the Problems of Women and the Labor and Delivery modules.

Ms. Sharry Erzinger, MEDEX/Northwest network resident, wrote the second draft for the Community Health I module.

Dr. Robert Drickey, MEDEX/Northwest network resident, performed a medical associate review of the Child Spacing module.

2.(b)(2) Management Training Modules:

The first draft of the Students' Text and Instructor's Manual for Management Systems Analysis Training has been completed and reviewed, and preparation of the second draft is in progress. The Systems Workbooks are in various draft stages.

Consultant Sandra Tebben prepared the second draft of the Information Unit for the Working with Support Systems module, including the design of prototype forms and procedures statements to be included in the Prototype Health Center Operations Manual. The remaining units in this modules (Finance, Personnel, Drugs and Medical Supply, General Supply, Transportation, Communications, Information, Maintenance, and Health Center Management) are in various draft stages.

The concept formulation has been completed for Guidelines for Management Training in PHC.

Consultant Edward Rizzo prepared a first draft of the Guidelines for Developing, Expanding, and Strengthening PHC Programs.

Consultant Frederick Simmons assisted with the concept formulation for Guidelines for Planning and Evaluation in PHC; and reviewed and assisted with the development of other management materials in support of PHC management systems strengthening and management training.

Mr. Ed Klecker, MEDEX/Northwest network resident, began his network residency training in Honolulu this quarter. He reviewed and critiqued draft prototype materials for the Management Systems Analysis Workbooks and Training Manual, and updated HMDS's annotated bibliography of the state of the art for management support systems for primary health care.

Dr. Drickey was given an overview of the role of management in the development process.

Discussions have been held with Dr. Melvyn Thorne, new Chief of Party of the Integrated Rural Health/Family Planning Project in Nepal about the possibility of field testing HMDS Management Systems Analysis materials there. In addition, MEDEX project staff in Guyana and Lesotho have been asked to review and critique these materials.

On his way to Maseru, Mr. Al Neill stopped in London to meet with Miles Hardie, the Director General of the International Hospital Federation. On his return home from Lesotho, he met in Geneva with appropriate staff at the World Health Organization and the World Council of Churches. At these meetings, he exchanged information on the current state of the art in development administration as it applies to health services.

#### 2.(b)(3) Community Health Worker (CHW) Training Modules:

Mr. Sunil Mehra and consultant Ms. June Mehra (hired under the MEDEX/Lesotho contract) spent this quarter in Lesotho working on the further development and field testing of CHW modules. On the way to Lesotho, Mr. Mehra spent three days in London talking with appropriate staff at AHRTAG and TALC (Teaching Aids at Low Cost) at the Institute of Child Health, and the London School of Hygiene and Tropical Medicine to become familiar with materials currently being developed for village health worker programs. This review will be useful in Mr. Mehra's early conceptualization of materials for HMDS.

#### 2.(b)(4) Continuing Education Materials:

No action this quarter.

2.(c) Technical assistance and leadership in conducting training programs and project planning in LDCs:

2.(c)(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:

No action this quarter.

2.(c)(2-7) Curriculum Adaptation Workshops, Teacher Training Workshops, Management/Logistics Workshops, Preceptor Deployment Workshops, Continuing Education Workshops, and Evaluation Workshops:

No action this quarter on these workshops. However, see Section III.D. regarding the Primary Health Care Initiation Workshop held in Lesotho this quarter.

2.(d) Network strengthening and strategizing:

2.(d)(1) Mobilization of U.S. MEDEX expertise and experience through a network organization of U.S. universities with MEDEX experience:

Mr. Ed Klecker, MEDEX/Northwest network resident, was in Honolulu September 28 - November 23 to begin his residency as a management specialist. See Section 2.(b)(2).

Ms. Bonnie Bata, MEDEX/North Dakota, and Mr. John Ketcher, MEDEX/Northwest, were in Maseru, Lesotho (October 5-30 and November 2-27, respectively) to provide supervisory assistance during the preceptorship period of the first class of nurse clinicians and to assist in teaching during the module phase of Class 2. Travel for Ms. Bata was funded entirely by the MEDEX/Lesotho contract. The HMDS core contract paid for Mr. Ketcher's airfare, per diem in transit, and miscellaneous travel costs; per diem while in Lesotho was charged to the MEDEX/Lesotho contract.

Dr. Robert Drickey (October 10 - November 20) and Ms. Sharry Erzinger (October 3 - November 20), network residents from MEDEX/Northwest at the University of Washington, were in Honolulu for residency training. See Sections 2.(b)(1) and 2.(b)(2).

Dr. Robert Eelkema, Dr. Merrill Shutt, and Ms. Mickey Knutson (MEDEX/North Dakota) attended APHA November 1-5 to pursue potential international contacts.

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

An International MEDEX Meeting was held at the HMDS office October 29-30. Dr. Mushtaq Chaudhary from Pakistan, Mrs. N. Borocho from Lesotho, and

Dr. Walter Chinn from Guyana met with HMDS staff to discuss current accomplishments and problem assessment in their primary health care programs. Specific attention was paid to their ongoing needs for technical assistance and to lessons learned that can be shared with other countries and groups. Subsequently, the three participants attended the APHA meeting in Los Angeles.

At APHA, Dr. Smith presided over a session, "Approaching Primary Health Care Nationally in Developing Countries - Practical Considerations of Field Experiences." Dr. Chaudhary, Mrs. Borotho, and Dr. Chinn made presentations regarding the development of primary health care on a national scale in their countries.

II. Contract amendment for the services of a development communications specialist, to bring the expertise and findings of development communications to bear on the planning, design, and eventual implementation of MEDEX projects in developing countries.

Mr. Sunil Mehra has been in Lesotho for most of this quarter. See Sections 2.(b)(3) and III.D. Before he left on this trip, Mr. Mehra made a list of appropriate illustrations for the DEENT, Infants and Children, Infectious Diseases, Respiratory and Heart, and GI modules. He prepared health messages for the above five modules and for the GU, Common Medical, Trauma and Emergency, Maternal and Child Health, Child Spacing, and Community Health modules. Concept formulation is in progress on the Communications chapter.

### III. OTHER INFORMATION

#### A. Travel by HMDS personnel:

Mr. Greg Miles, his wife Cathy and infant, relocated to Honolulu from Washington, D.C., September 30 - October 3. See Section III.E.

Mr. Al Neill in London, October 8; Maseru, Lesotho, October 10-28, and in Geneva October 29-30. Travel costs funded by MEDEX/Lesotho contract. See Sections III.D. and 2.(b)(2).

Dr. Smith was in Geneva, October 19-23, to attend a meeting convened by WHO of producers of health learning materials. While at WHO, Dr. Smith discussed with officials there a new program being undertaken by that organization that potentially may involve HMDS collaborating with WHO and three to five countries in the preparation of appropriate health manpower training materials. This trip was paid for by WHO. As a consequence of this meeting, WHO has asked HMDS to write Health Manpower Development Policy Guidelines and Analyses.

Ms. Linda Oshiro, Mr. Ernest Petrich, Dr. Rodney Powell, and Mr. Frank White attended the APHA's annual conference in Los Angeles, November 1-5, to staff an information booth about HMDS. The revised brochure about HMDS (Annex 2) and copies of the information package were distributed. Health officials from Kenya, Kuwait, and Tuvalu, among other places, visited the HMDS information

booth and had favorable comments to make about our work. Dr. Smith also attended this meeting, see below.

After the APHA meeting, Mr. Petrich met with AID officials November 6-10 regarding Program Development Work.

After the APHA meeting, Mr. White met November 16-17 with people in the AID Contract Office to discuss outstanding payments under the Pakistan evacuation, contract amendment for the core contract, and general status of consultants' approval.

Dr. Smith to:

- a. Los Angeles, November 1-6, for the APHA meeting. See Section 2.(d)(2).
- b. Washington, D.C., November 9-12, to discuss his and Dr. Rogers' upcoming trip to Africa. Dr. Smith discussed with AID/Washington officials the mid-November health officers meeting in Asia, relative to technical assistance needs in that region. Technical assistance needs were discussed with Ms. Paula Feeney in the Latin American Bureau.
- c. Lome, Togo, November 16-21. See Section 2.(a)(1).
- d. Nairobi, Kenya, November 22-24, with Dr. Rogers. See Section 2.(a)(1).
- e. Maseru, Lesotho, November 24-29, with Dr. Rogers. See Section III.D.
- f. Geneva, November 30 - December 1. Dr. Smith met with WHO staff from the Health Manpower Development Division and the Division of Strengthening of Health Services regarding our recent collaboration in Pakistan and project identification for HMDS by WHO field staff. Dr. Smith also met with the editorial staff of World Health Forum to discuss an article about MEDEX that is to appear in a 1982 issue of the journal.
- g. Washington, D.C., December 6-11, to brief appropriate AID officials on the results of this trip. Discussions were held with regional bureau staff regarding the impact of recent budget cuts on AID's future posture on primary health care. On December 8, Dr. Smith was presented a Rockefeller Public Service Award for devising an innovative health care program for rural and impoverished areas of developing countries.

Dr. Smith planned to go to Dakar, Senegal, on this trip, but the meetings there were cancelled. The round trip airfare cost between Honolulu and Maseru and per diem in Maseru were funded by the MEDEX/Lesotho contract; additional expenses were charged to the core contract.

Dr. Rogers to Washington, D.C., November 11-13; Nairobi, Kenya, November 22-24; and Maseru, Lesotho, November 24-29. See Sections 2.(a)(1) and III.D.

Mr. Mehra to London and Maseru, Lesotho. Mr. Mehra left Honolulu November and will be returning near the end of January. See Sections 2.(b)(3) and III.D.

B. Consultants:

Mr. E. Edward Rizzo, in Brookeville, Maryland, September 15 - October 5. See Section 2.(b)(2).

Mr. Fred Simmons, in Honolulu, October 5-9. See Section 2.(b)(2).

Mona R. Bomgaars, M.D., M.P.H., in Honolulu for 42.5 hours this quarter. See Section 2.(b)(1).

Sandra S. Tebben, M.P.H., C.N.M., P.N.P., in Honolulu for 15 days this quarter. See Section 2.(b)(2).

C. Visitors to HMDS:

Prof. Seleh Ezmirly and Dr. Habeeb Ghatala, from the Committee on Medical Education of the Saudi Arabian Educational Mission to the U.S.A. visited with Dr. Powell October 15. Prof. Ezmirly and Dr. Ghatala were accompanied by their colleagues, Dr. Winberg Chai and Dr. Martin Houg.

Mr. Hugh Dwelley, AID/Washington Contracts Office, was here October 16 to discuss the general status of HMDS contracts.

Dr. Eric Goon, WHO Program Coordinator and Representative, The People's Republic of China, made an informal presentation to HMDS October 21 to discuss aspects of primary health care in the PRC.

Mrs. N. Borotho from Lesotho, Dr. Mushtaq Chaudhary from Pakistan, and Dr. Walter Chin from Guyana visited Honolulu, October 29-30. See Section 2.(d)(2).

Dr. Pierre Claquin of Bangladesh was in Honolulu December 1 to discuss a collaborative effort between the MEDEX Network and the International Center for Diarrheal Diseases Research - Bangladesh, in response to AID's RFP on the Palli Chittiksak project in Bangladesh. We discussed HMDS's approach to primary health, and Dr. Claquin reviewed a number of the modules. He then flew to Seattle to meet with the MEDEX/Northwest staff.

Dr. Ashok Sahni, of the Indian Institute of Management in Bangalore, met with HMDS December 23 to exchange information and comments regarding the state of the art on health services administration and the training of health personnel. Dr. Sahni holds many health management posts in India, including the editorship of the Indian Journal of Health Administration.

D. Significant Core Staff Time Devoted to Country Project Activities:

Mr. Neill was in Maseru October 10-28. He provided assistance to the MEDEX/Lesotho and the Ministry of Health staffs on the preparation of working documents for the Maseru District Primary Health Care Initiation Workshop and participated in the workshop and the followup activities. This workshop was

designed to initiate the implementation of the national primary health care scheme in the Maseru District, the first of ten districts. He worked with MEDEX/Lesotho's new long-term advisor for planning, Mr. Clifford D. Olson, and with Mrs. Borotho, the head of the Health Planning and Statistics Unit in the MOLL. Mr. Neill and Mr. Kess Hottle, the long-term advisor for management, developed recommendations for the second year's work plan, and reviewed mid-level health worker management training and analysis materials.

Mr. Mehra was in Maseru from November through mid-January to

- develop, field test, and revise the community health worker curriculum modules and other educational materials
- assist in the development of the Lesotho National Village Health Worker Training Manual
- conceptualize and initiate development of community education materials.

Dr. Smith and Dr. Terence Rogers attended the November 28 graduation of MEDEX/Lesotho's first Nurse Clinician class. Dr. Smith also discussed MEDEX program goals and accomplishments to date with the in-country staff and with Ministry of Health officials. Drs. Smith and Rogers made field visits to the health outposts to which the new graduates have been assigned. Dr. Rogers' trip was funded by the MEDEX/Lesotho contract.

E. Recruitment and personnel:

Mr. Gregory A. Miles, M.S., M.P.H., was hired October 1 as a manpower development specialist for HMDS.

Dr. Eugene Boostrom is on an eighteen-month leave of absence from HMDS, effective November 18. He will be working for USAID in Washington, D.C., and in the Near East, under an Intergovernmental Personnel Act agreement between AID/Washington and the Research Corporation of the University of Hawaii.

Richard A. Smith, M.D., M.P.H., recently retired from the U.S. Public Health Service, was hired by the Research Corporation of the University of Hawaii to be HMDS's Director, effective November 1.

IV. FISCAL STATUS, July - September 1981\*

<u>Budget Category</u>	<u>Total Awarded** Yrs. 01-04</u>	<u>Previous Expenditures/ Encumbrances</u>	<u>13th Quarter E&amp;E</u>	<u>Total E&amp;E to Date</u>	<u>Balance</u>
Salaries	\$1,891,422	\$1,224,345	\$100,204	\$1,324,549	\$ 566,873
Consultant Fees	102,267	79,585	4,302	83,887	18,380
Fringe Benefits	311,846	190,238	16,308	206,546	105,300
Overhead	493,862	314,267	33,196	347,463	146,399
Office Rental	196,549	134,570	8,532	143,102	53,447
Travel & Transportation	227,257	162,737	13,279	176,016	51,241
Allowances	102,887	54,498	4,611	59,109	43,778
Other Direct Costs	204,478	139,548	7,991	147,539	56,939
Equipment, Materials & Supplies	157,109	121,145	2,007	123,152	33,957
Sub-Contracts	616,723	472,518	∅	472,518	144,205
<b>TOTAL</b>	<b>\$4,304,400</b>	<b>\$2,893,451</b>	<b>\$190,430</b>	<b>\$3,083,881</b>	<b>\$1,220,519</b>

\*Addendum to Quarterly Report #13.

Last quarter, the "Total E&E to Data" column was incorrect (duplicated the figures in the "Previous Expenditures" column).

This is a corrected report.

\*\*Note that these figures only include eleven (11) months of Year 04.

IV. FISCAL STATUS, October - December 1981

<u>Budget Category</u>	<u>Total Awarded* Yrs. 01-04</u>	<u>Previous Expenditures/ Encumbrances</u>	<u>14 th Quarter E&amp;E</u>	<u>Total E&amp;E to Date</u>	<u>Balance</u>
Salaries	\$1,891,422	\$1,324,549	\$155,636	\$1,480,185	\$411,237
Consultant Fees	102,267	83,887	8,220	92,107	10,160
Fringe Benefits	311,846	206,546	16,233	222,779	89,067
Overhead	493,862	347,463	33,944	381,407	112,455
Office Rental	196,549	143,102	21,891	164,993	31,556
Travel & Transportation	227,257	176,016	25,796	201,812	25,445
Allowances	102,887	59,109	5,737	64,846	38,041
Other Direct Costs	204,478	147,539	8,294	155,833	48,645
Equipment, Materials & Supplies	157,109	123,152	2,870	126,022	31,087
Sub-Contracts	616,723	472,518	53,213	525,731	90,992
<b>TOTAL</b>	<b>\$4,304,400</b>	<b>\$3,083,881</b>	<b>\$331,834</b>	<b>\$3,415,715</b>	<b>\$888,685</b>

\*Note that these figures only include eleven (11) months of Year 04.

V. PROJECT STATUS

Summary of Activities for Quarter #14

<u>Services</u>	<u>Provided This Quarter</u>	<u>Cumulative Total</u>
Exploratory Briefings		19
In LDCs (Togo, Kenya)	2	
Other (Information package, briefing paper)	2	
PHC Seminars Conducted		16
In LDCs	0	
In Honolulu	0	
Elsewhere	0	
Workshops:		
PHC Initiation (Lesotho)	1	1
Curriculum Adaptation	0	3
Teacher Training	0	3
Management/Logistics	0	3
Preceptor/Deployment	0	1
Evaluation	0	1
Continuing Education	0	3
Technical Assistance (Number of Visits)		
AID/Regional Bureau	0	5
USAID Mission	0	14
LDC Government	0	14
Network Strengthening (Number of Activities)		
Domestic Network Meetings	0	4
Other Domestic Network Activities	8	71
International Meetings	1	1
Module Development		
Active this quarter	24	N/A
Typeset	1	1

## VI. STATUS OF MODULE DEVELOPMENT

Summary of module activities for Quarter #14, October - December 1981

<u>Module/Manual</u>	<u>Active This Quarter?</u>	<u>Current Status</u>
1. Framework Paper	yes	Reviewed by Curriculum Board. Curriculum Board changes were incorporated into the paper this quarter. To be edited and typeset next quarter.
2. Primary Health Care Module	no	Second draft scheduled for January 1982.
3. Anatomy and Physiology	no	Final review and revision rescheduled for June 1982.*
4. Medical History	no	Final review and revision rescheduled for June 1982.
5. Physical Examination	no	Final review and revision rescheduled for June 1982.
6. Common Skin Problems	yes	Typeset this quarter. To be printed in April.
7. Dental EENT	yes	Approved by Curriculum Board. To be typeset in January, printed in April.
8. Respiratory and Heart Problems	yes	Medical associate review completed last quarter. Educational and communication associate reviews completed this quarter. Editorial associate review and typesetting scheduled for next quarter (Jan/Feb/Mar82).
9. Gastro-intestinal Problems	no	Final review and revision rescheduled for next quarter.
10. Genito-urinary Problems	no	Final review and revision rescheduled for next quarter.
11. Infectious Diseases	no	Final review and revision rescheduled for next quarter.

\*The final review and revision on each module include medical, educational, communication, and editorial associate reviews. After the four reviews, the modules go to the Curriculum Board for review and final approval.

<u>Module/Manual</u>	<u>Active This Quarter?</u>	<u>Current Status</u>
12. Common Medical Conditions	no	Final review and revision rescheduled for next quarter.
13. Diseases of Infants and Children	yes	Medical, educational, and communication associate reviews completed. Editorial associate review scheduled for June 1982.
14. Trauma and Emergency	no	In first stage (rough draft).
15. Problems of Women	yes	Medical associate review completed. Final review and revision rescheduled for June 1982.
16. Labor and Delivery	yes	Medical associate review completed. Final review and revision rescheduled for June 1982.
17. Prenatal and Postnatal Care	no	Medical portion to be rewritten next quarter. Final review and revision rescheduled for June 1982.
18. Child Spacing	yes	Medical associate review completed. Final review and revision rescheduled for June 1982.
19. Community Health I	yes	In first stage (rough draft).
20. Community Health II	no	In first stage (rough draft).
21. Working With Communities and CHWs	no	In first stage (rough draft).
22. First Aid (CHW)	yes	Field testing in Lesotho continuing through January 1982.
23. Diarrhea and Dehydration (CHW)	yes	Field testing in Lesotho continuing through January 1982.
24. Nutrition (CHW)	yes	Field testing in Lesotho continuing through January 1982.
25. Hygiene (CHW)	yes	Field testing in Lesotho continuing through January 1982.
26. Clean and Safe Normal Delivery (CHW)	yes	Field testing in Lesotho continuing through January 1982.

<u>Module/Manual</u>	<u>Active This Quarter?</u>	<u>Current Status</u>
27. High Risk Pregnancies (CHW)	yes	Field testing in Lesotho continuing through January 1982.
28. Community Cooperation (CHW)	yes	Field testing in Lesotho continuing through January 1982.
29. Common Clinical Problems (CHW)	yes	Field testing in Lesotho continuing through January 1982.
30. Child Spacing (CHW)	yes	Field testing in Lesotho continuing through January 1982.
31. Working With Support Systems	yes	In first stage (rough draft).
32. Working With the Health Team	no	In first stage (rough draft).
33. Supervisory Mid-Level Health Workers	no	In first stage (rough draft).
34. Formulary	yes	In first stage (rough draft).
35. Diagnostic and Patient Care Guidelines	no	In first stage (rough draft).
36. Management Operations	no	In first stage (rough draft).
37. Patient Care Skills	no	In first stage (rough draft).
38. Training System Evaluation Manual	no	In first stage (rough draft).
39. Curriculum Adaptation Manual	no	In first stage (rough draft).
40. Instructor Preparation Manual	no	In first stage (rough draft).
41. Pre-deployment Manual	no	In first stage (rough draft).
42. Continuing Education Manual	no	In first stage (rough draft).
43. Management Systems Analysis Workbooks and Training Manual	yes	First drafts of Students' Text and Instructor's Manual completed and reviewed. Preparation of second rough draft in progress. Associated workbooks in various draft stages.
44. Area Planning/Management (POEM) Workshop Manual	no	In first stage (rough draft).
45. National Planning/Management (POEM) Workshop Manual	no	In first stage (rough draft).

<u>Module/Manual</u>	<u>Active This Quarter?</u>	<u>Current Status</u>
46. Guidelines for Developing, Expanding and Strengthening PHC Programs	yes	In first stage (rough draft).
47. Guidelines for Planning and Evaluation in Primary Health Care	yes	Concept formulation completed.
48. Guidelines for Management Training in Primary Health Care	yes	Concept formulation completed.

**Annex A**

**Responses to HMDS Information Package Mailout**

MASTER LIST

**PRIMARY HEALTH CARE INTEREST FORM**

**COURSES**

- a\* Executive Seminars on PHC Design & Implementation
  - b Intragovernmental Collaboration in Times of Economic Constraint
  - c Institution Building for PHC
  - d Competency-Based Training Methods for Providers of PHC Services
  - e Strengthening Management Support Systems for PHC
  - f Strengthening Planning and Evaluation Systems for PHC
  - g Project Management for PHC
  - h Other (describe): \_\_\_\_\_
- 

**MATERIALS**

- 1\* Manpower and Systems for PHC Development
- 2 Guidelines for PHC Development
- 3 Systems Development Materials
- 4 Prototype Modules for Training Mid-Level Health Workers (MLHWs)
- 5 Prototype Modules for Training Community Health Workers (CHWs)
- 6 Prototype Reference Materials (for MLHWs)
- 7 Manuals for Development of Competency-Based Training (CBT) Programs and CBT Trainers for MLHWs and CHWs (including specific adaptation materials)

\*NOTE: The letter and number codes above serve as the key for the areas of interest indicated by those responding to the HMDS Information Package (see list, following pages).

RESPONSES TO  
INFORMATION PACKAGE DISTRIBUTION

In Order Request Was Received

- |     |  |  |
|-----|--|--|
| ✓1. | Jorge Saravia<br>Director<br>CIMDER<br>Apartado Aereo 3708<br>Cali- Colombia   | 1 2 3 4 5 6*                               |
| 2.  | Dr. D. Lairo<br>Assistant Director<br>Center for Population & Family Health<br>Columbia University<br>60 Haven Ave.<br>N.Y., NY 10032            | 5  |
| 3.  | Constance L. Collins<br>Public Health Advisor<br>USAID/Cairo<br>Box 10<br>FPO New York 09527   | d e f g 1 2 3 4 5 6 7                      |
| 4.  | H.A.R. El Neill, M.D., Ph.D. (Cantab)<br>Coordinator of Studies<br>World Health Organization<br>P.M.B. 1036, Yaba,<br>Lagos, Nigeria             | d e f g 1 3 7                              |
| ✓5. | Paul Wangai, Jr., M.D., MRSH<br>i/charge<br>Health & Better Living Services<br>P. O. Box 42276<br>Nairobi, Kenya                                 | a c d e f g h 1 2 3 4 5 6 7<br>(Nutrition) |
| ✓6. | Dr. Dale Gibb<br>Chief, HPN Division<br>USAID/Tunis (ID)<br>Department of State<br>Washington, D.C. 20520  | a b c d e f g 1 2 3 4 5 6 7                |
| ✓7. | Prof. Dr. Prakorb Tuchinda<br>Under-Secretary of State for Public Health<br>Ministry of Public Health<br>Devavesni Palace<br>Bangkok 2, Thailand | a d e g 1 2 7                              |

NOTE: See the master list, "Primary Health Care Interest Form" (preceeding page), for the key to the letter and number codes above.

8. Eugene O Nwanosike  
 Librarian  
 Pan African Institute for Development  
 P. O. Box 133 Buea, S.W. Province  
 United Republic of Cameroon  
 a b c d e f g 1 2 3 4 5 6 7
- ✓ 9. Dr. Almatz Billah Mobarak  
 First Undersecretary of State for  
 Primary Health Care  
 Ministry of Health  
 Magless el Shaab Street  
 Cairo, Egypt  
 a b d f 1 2 3 4 5 6 7
- ✓ 10. Kenneth Farr  
 Chief, Health Division  
 USAID Ecuador  
 USAID Quito  
 APO Miami 34039  
 d e f 4 5 6 7
- ✓ 11. Oscar Rivera-Rivera, M.D.  
 Health Officer  
 AID  
 American Embassy  
 APO Miami, FL 34041  
 12/04/81  
 3 5
12. G. L. Filerman  
 President  
 AUPHA  
 Suite 420, 1 Dupont Circle  
 Washington, D.C. 20036  
 a c d e f g 1 2 7
13. USAID/RABAT  
 Population/Health/Nutrition Office  
 Agency for International Development  
 Department of State  
 Washington, D.C. 20520  
 e f g 1 5
- ✓ 14. K.V. Ranganathan, M.D.  
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**Annex B**

**Briefing Paper**

## BRIEFING PAPER: HEALTH AND ECONOMIC DEVELOPMENT

PART 1 - HEALTH DEVELOPMENT IMPACT ON ECONOMIC DEVELOPMENT: LESSONS LEARNED

1. The retraining of existing auxiliary health workers and their deployment to isolated rural areas, including mining, timber and agricultural production areas, has greatly reduced the amount of time lost to work activities by eliminating the need for workers to spend several days travelling to and from the distantly located capital city (Georgetown) for personal health services (Source: Guyana, AID Project No. 504-0066, Rural Health Systems).
2. The expansion in number of rural health centers and adequate staffing has decreased average access time for personal health services from 14 hours (1976) to 8 hours (1981), significantly reducing the time lost to work. (Source: Lesotho, AID Project No. 690-0058 Rural Health Development Project. Also, facility expansion partly funded by British Commonwealth fund).
3. In China, Chunshing brigade, Kukong Hsien, Kwantung Province has a population of 2,900 with 1,139 labor force members. If the barefoot doctors were not in the brigade, the population would have to go to communes for treatment. The distance between brigade and commune, about 10 li (3.1 miles) would be a one day round trip, and a patient making the journey to the commune normally would be accompanied by a healthy adult. Since 95 percent of the illnesses are of the common type, treatment can be provided by barefoot doctors. It was reported that 6000 man days had been saved during 1968. Thus, the net gain was 5,700 man days (95 percent x 6,000). With the assumption of 300 work days per peasant during a year, 5,700 work days are equivalent to 19 man years of additional productivity. (Source: Hu, Teh-Wei, Health Care Services in China's Economic Development, Penn. State University, University Park, 1976, p. 33)
4. In China, Shangtung Province, it was reported that in 1973 they saved 3,000 man days due to the availability of barefoot doctors (Chinese Medical Journal, June 1974). They reported that 50 man days is the time taken to cultivate one acre of land to a full harvest, thus the equivalent of 60 additional acres was cultivated as a result of the barefoot doctor services. (Source: Hu, Teh-Wei, Ibid.)
5. In order to attract workers and their families to under populated and undeveloped interior regions of the country (areas that have large potential for natural resource and economic development) families are insisting upon availability of health services. Consequently, the development of health services has had to become an essential part of the governments development strategy for this country. (Source: Guyana, AID Project No. 504-0066, Rural Health Systems)
6. The development of rural basic health services in Pakistan has, as one of its objectives, the provision of amenities in rural areas for the purpose of combating urban migration which pulls the most productive age workers from agricultural and natural resource production. (Source: Pakistan, AID Project No. 391-4150, Basic Health Services)
7. In the Central District of Botswana, approximately 60 rural health facilities were constructed. Small local private contractors were used. In many cases, local carpenters and masons formed a "company" in order to "bid" for the health facility in their community. (Large contractors were not interested in such small, widely dispersed, low profit projects.) The project greatly stimulated the development of

small, private sector contractors who went on to undertake other projects (private homes and small village shops. The project also greatly increased the coverage and utilization of health services in Central District. (Source: Botswana, AID Rural Health Construction Project)

8. In a study of tuberculosis control in Korea, it was estimated that U.S.\$150 would accrue to the nation for every U.S.\$1 spent in an optimal control program. (Source: Feldstein, M.S.: Piot, M.A.: and Sundaresan, T., Resource Allocation Model for Public Health Planning: A Case Study of Tuberculosis Control, Geneva: World Health Organization, 1973.)
9. A World Bank study among Indonesian workers reported that 85% of the studied population had hookworm and 45% suffered from iron-deficiency anemia. Sixty days of treatment with iron supplement increased productivity by 19% at a cost of U.S.\$0.13 per person in this study; the calculated benefit/cost ratio was 280:1. (Source: Basta, S.S., and Churchill, A., "Iron Deficiency Anemia and the Productivity of Adult Males in Indonesia," Washington, D.C.: International Bank for Reconstruction and Development Staff Working Paper no. 175, 1974.)

#### Some References:

1. "A healthy and well-fed labor force is more physically and mentally energetic than one that is sick and hungry, and therefore gets more work done and is more innovative. This is confirmed by a number of experiments and project-level studies." (Source: World Development Report 1980, Washington, D.C. The World Bank, 1980, p. 39)
2. "Human energy and innovation depends on good health. Yet most people in the poverty belts suffer from a combination of longstanding malnutrition and parasitic diseases; and some of these diseases, like sleeping sickness and river-blindness, prevent the farming of rich agricultural lands, hold back the breeding of domestic animals and reduce the productivity of the workers. About one billion people are at risk from malaria. River-blindness - which drives people out of the fertile areas of the Volta, Niger, Gambia and Upper Nile rivers - is estimated to affect 20 million people in Africa. Sleeping sickness, which also limits livestock grazing, currently afflicts 35 million victims; bilharzia is estimated to affect between 180 and 200 million people. The eradication of these diseases requires international support: the scale and complexity and the costs of the technology to cur them are beyond the economic means of these poor countries. The tropical and sub-tropical areas are particularly prone to these diseases." (Source: North-South: A Program for Survival, The Report of the Independent Commission on International Development Issues, London, U.K., Pan Books, Ltd. (9th printing) 1981, p. 82)
3. "Human development links the creation of productive work opportunities for the poor with the provision of goods and services to meet their essential needs. The elements of human development -- health, education, nutrition and fertility reduction -- are closely interrelated. Improvements in one area can facilitate improvements in others and reinforce all aspects of development." (Source: World Development Report 1981, Washington, D.C., The World Bank, August 1981, p. 97)
4. "It has long been recognized that the qualities of a nation's people have an important influence on its prosperity and growth. This is not simply because better labor adds to output in the passive way that, say, more fertilizer or better machinery does. It is also because human beings are the source of ideas, decisions

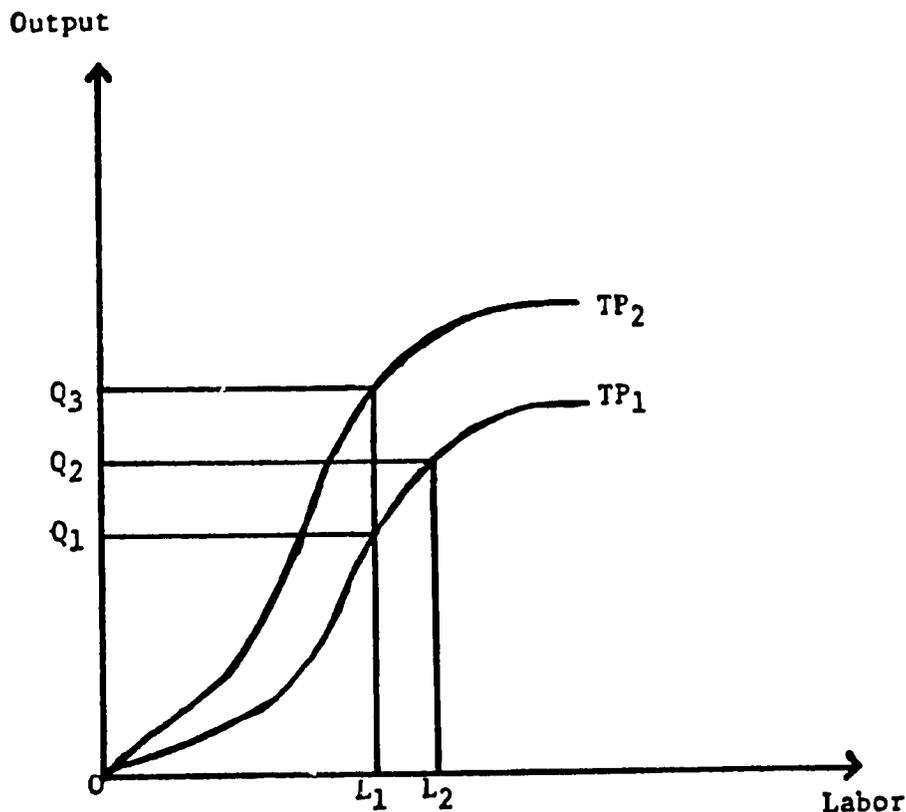
and actions on investment innovation and other opportunities." (Source: World Development Report 1989, Washington, D.C. The World Bank, p. 37)

5. "Thus both simple and more sophisticated cross country analysis of aggregate measures of human resources and growth seem to point in the same general direction: policies directed at human resource development can exert a positive influence on the growth rate by improving the stock of human capital. This analysis does not, however, indicate the proper mix of human resource and other, more traditional investments in physical capital. The correct program of human resource investments will depend on individual country situations and will have to consider the opportunity cost of capital and the current state of human resources. Nevertheless, it does seem clear that investing in people can be an efficient way of both eliminating poverty and increasing the growth rate of output for many developing countries." (Source: Hicks, Norman, Economic Growth and Human Resources, World Bank Staff Working Paper No. 408, Washington, D.C., The World Bank, July 1980, p. iii, iv)

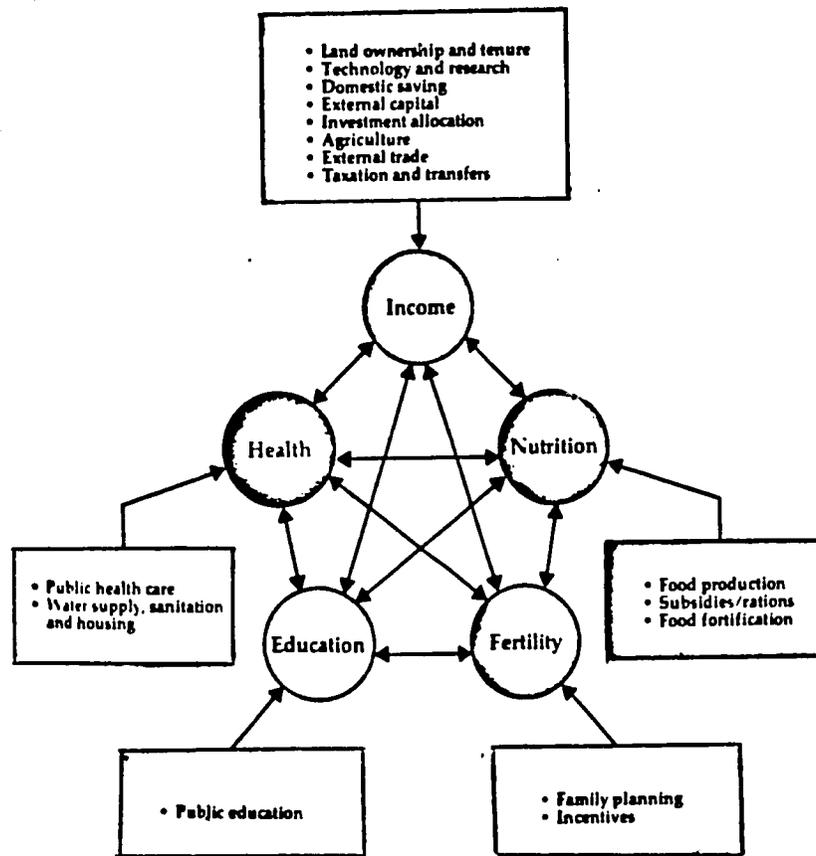
## A PRODUCTIVITY MODEL: HEALTH AND AGRICULTURE

The improvement of health services will improve the quality and quantity of labor input and the quantity and quality of other factors of production. A diagram may be helpful to explain the effects of quality and quantity of labor inputs on agricultural production. Let  $TP_1$  denote the total output curve between labor inputs and agricultural inputs, before the improvement of health services. It is assumed that peasants are operating under the normal production condition - Stage II - where the marginal productivity is positive but they are experiencing decreasing returns to scale.

Suppose  $L_1$  is the amount of labor used for production before the improvement of health services. Given other inputs of production, the resultant agricultural output is  $Q_1$ . If the labor inputs are increased from  $L_1$  to  $L_2$  -- for example, through the time saved in man-year due to the availability of health services within the production team -- then the output will be increased from  $Q_1$  to  $Q_2$ . On the other hand, if the improvement of health services has improved the quality of labor -- such as through improvement of the worker's physical strength or alertness -- then the total output curve  $TP_1$  will have an upward shift to  $TP_2$ . Thus, given the same amount of labor input of  $L_1$ , the total output will be increased from  $Q_1$  to  $Q_3$ . Therefore, the improvement of health services will theoretically improve the quantity and quality of labor inputs which in turn will increase the productivity. This is especially possible in an agricultural economy in a developing country where the labor inputs are the primary sources of production inputs. (Source: Hu, Teh-Wei, Ibid.)



Labor and Output Relations



Source: World Development Report 1980, Washington, D.C., The World Bank, p. 69

PART 2: HEALTH DEVELOPMENT IMPACT ON RESOURCE UTILIZATION AND RECURRENT OPERATIONAL COSTS OF HOST COUNTRIES: LESSONS LEARNED

Some Examples:

1. The re-training of existing host country auxiliary health workers has upgraded their skills in curative medicine to the extent that the country has reduced its reliance on expensive foreign contract physicians, with a net savings in health services costs. (Source: Guyana, AID Project No. 504-0066, Rural Health Systems. This is also now being demonstrated in Lesotho, AID Project No. 690-0058, Rural Health Development.)
2. The redesign of a national drug and medical supply system involving the establishment of standardized formulary, greater use of generic equivalents competitive purchasing practices and improved control over distribution has resulted in keeping the annual national drug and medical supply budget at previous levels while expanding the supply of drugs and medical supplies from an estimated 70% of national needs to 100% during the years 1977 to 1981. (Source: Guyana AID Project No. 504-0066 Rural Health Systems. This effect is also being demonstrated in Lesotho via a Netherlands funded project.)
3. The development of a low-cost radio communications system to link existing primary health care workers located in rural isolated areas with their referral hospitals and supervisors has greatly reduced the travel time and related travel costs of health workers and their supervisors, and has also reduced the emergency evacuation of patients at a very great cost savings, since evacuation from outlying areas in Guyana, must be done by air (helicopter or airplane). (Source: Guyana, AID Project No. 504-0066, Rural Health Systems)

Some References:

1. "The recurrent costs of providing a given level of service can often be reduced. Improved communications -- via posts or telephones -- may reduce travel costs. So may a more rational use of existing transport services." (Source: World Development Report 1981, Washington, D.C., The World Bank, August 1981, p. 100)
2. "Drugs are typically a large share of health budgets -- 24 percent in Thailand (1979), 22 percent in Tanzania (1976), 30 percent in Ghana (1976-77). .... Without reducing quality, savings in the drug bill may be possible through changes in procurement methods and local drug formulation. A recent study of drug procurement in Ghana found that in 1976-77 savings on drugs of as much as 20 percent could be made if over-prescription was controlled. A second study in Tanzania estimated potential savings of 30 percent by controlling over-prescription, central purchasing and use of generic rather than brand-name drugs. Indonesia has saved some 50 percent of costs through bulk procurement of essential drugs." (Source: World Development Report 1981, Washington, D.C., The World Bank, August 1981, p. 100)

PART 3: BIBLIOGRAPHY: HEALTH AND ECONOMIC DEVELOPMENT

- Ammundsen, E. "The Problem of Integrating Health Planning with Socio-economic Planning." In Public Health Papers, No. 49, 1973, pp. 27-31.
- Andreano, Ralph. "Farewell to the God of Plague: The Impact of Parasitic Diseases (Schistosomiasis) in Mainland China," Health Economic Research Center, Report no. 3, Madison:University of Wisconsin, 1972.
- Basta, S. S., and Churchill, A. "Iron Deficiency Anemia and the Productivity of Adult Males in Indonesia," Washington, D.C.:International Bank for Reconstruction and Development Staff Working Paper no. 175, 1974.
- Belchior, M. "The Impact of Ill Health and Disease on Society with Special Reference to Brazil," In Gelhourn, A., Fulop, T., and Bankowski, Z., ed. Health Needs of Society: A Challenge for Medical Education (10th CIOMS Round Table Conference), 1977, pp. 55-60.
- Conly, G. N. "The Impact of Malaria on Economic Development: A Case Study." Washington, D.C., Pan American Health Organization, 1975, 117p. (Pan American Health Organization, Scientific Publication, No. 297).
- Etzioni, A. & Salasin, S. "The Impact of Health and Disease on Society." In Gelhourn, A., Fulop, T., and Bankowski, Z., ed. Health Needs of Society: A Challenge for Medical Education (10th CIOMS Round Table Conference), 1977, pp. 39-48.
- Feldstein, M.S.; Piot, M.A.; and Sundaresan, T., Resource Allocation Model for Public Health Planning: A Case Study of Tuberculosis Control, Geneva:World Health Organization, 1973.
- Gellhorn, A., Fulop, T. and Bankowski, Z., ed. Health Needs of Society: A Challenge for Medical Education. 10th CIOMS Round Table Conference, Ulm, Federal Republic of Germany, 6-10 July 1976, and, Scientific Session of the 19th General Assembly of CIOMS, Geneva, 10 November 1976. Geneva, published by the World Health Organization on behalf of the Council for International Organizations of Medical Sciences, 1977, 221p.
- Habin, Peter and Solimano, Giorgio. "Nutrition and National Development, Establishing the Connection," In INP Discussion Papers no. 5, 1975, 32p., p. 19, April 1978.
- "Health Aspects of Population Trends and Prospects." World Health Statistics, Rep. 1974, 27, 200-229.
- "Health, Population, and Development." WHO Chronicles, 1974, 28, 523-528.
- Hicks, Norman. Economic Growth and Human Resources, World Bank Staff Working Paper no. 408, Washington, D.C., The World Bank, 1980, 37p.
- Hu, Teh-wei. "Health Care Services in China's Economic Development," paper presented at the Research Conference on the Lessons of China's Development Experience for the Developing Countries, 31 January-2 February 1976, San Juan, Puerto Rico.
- Interrelationships Between Health Programmes and Socio-Economic Development. 1973, 54p. (Public Health Papers, No. 49).

Kamunvi, F. "The Impact of Ill Health and Disease on the Social Structure and Economy of a Community or a Nation. In Gellhorn, A., Fulop, T. and Bankwoski, A., ed. Health Needs of Society: A Challenge for Medical Education (10th CIOMS Round Table Conference), 1977, pp. 49-54.

Lopez Martinez, A. "El Papel del Sector Salud en el Desarrollo Economico y Social," In Organizacion Panamericana de la Salud, Publicacion Cientifica, No. 271, Washington, D.C., 1973, pp. 95-100.

Lwechungara Kamuzdra, O. Constraints to Labour Time Availability in African Smallholder Agriculture: The Case of Bukoba District, Tanzania. Department of Statistics, Dar es Salaam University, Tanzania, Development and Change, 1980, 11, 1, 123-135.

Maleubbaum, Wilfred. "Health and Productivity in Poor Areas," Empirical Studies in Health Economics, Baltimore: The Johns Hopkins Press, 1970, pp. 31-54.

Mejia, A., and Paredes, R. "Health Planning for Colombia: Part 2," The Millbank Memorial Fund Quarterly (New York), 46(2), April 1968.

North-South: A Program for Survival (9th ed.). The Independent Commission on International Development Issues, London, Pan Books Ltd., 1981, 303p.

Sai, Fred T. "Systematic Consideration of Health and Nutrition in Agricultural and Rural Development Programmes and Projects," Introducing Nutritional Considerations into Agricultural and Rural Development (1981 Rome), Tokyo, United Nations University. Food and Nutrition Bulletin, Vol. 3(3), July 1981, p. 6-10.

Watson, Malcolm. The Prevention of Malaria in the Federated Malay States, London:John Murray, 1921, pp. 93-105.

Weisbrod, Burton A., Diseases and Economic Development: The Impact of Parasitic Diseases in St. Lucia, Madison:University of Wisconsin Press, 1973.

Weisbrod, B.A. & Helminiak, T. W. "Parasitic Diseases and Agricultural Labor Productivity," Wisconsin University, Economic Development and Cultural Change, 1977, 25(3), 505-522.

Wheeler, David. "Human Resource Development and Economic Growth in Developing Countries: A Simultaneous Model," World Bank Staff Working Paper no. 407 (Washington, D.C.:World Bank, July 1980).

Winslow, Charles E. The Cost of Sickness and the Price of Health, Monograph Series, Geneva:World Health Organization, 1951, p. 23.

World Development Report 1980, The World Bank, New York, Oxford Press, 1980, 166p.

World Development Report 1981, The World Bank, Washington, D.C., 1981, 192p.