

AGENCY FOR INTERNATIONAL DEVELOPMENT  
WASHINGTON, D. C. 20523  
BIBLIOGRAPHIC INPUT SHEET

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Batch 72

1. SUBJECT CLASSIFICATION	A. PRIMARY Serials	Y-NA00-0000-0000
	B. SECONDARY Health--General	

2. TITLE AND SUBTITLE  
Health and family planning; annual report, 1969/1970

3. AUTHOR(S)  
(101) Johns Hopkins Univ. Dept. of Int. Health

4. DOCUMENT DATE 1970	5. NUMBER OF PAGES 66p.	6. ARC NUMBER ARC
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7. REFERENCE ORGANIZATION NAME AND ADDRESS  
Johns Hopkins

8. SUPPLEMENTARY NOTES (Sponsoring Organization, Publishers, Availability)  
(Activity summary)

9. ABSTRACT

10. CONTROL NUMBER PN-AAE-757	11. PRICE OF DOCUMENT
12. DESCRIPTORS Family planning Medical services	13. PROJECT NUMBER
	14. CONTRACT NUMBER CSD-1939 211(d)
	15. TYPE OF DOCUMENT

OSD-1939 211(B)  
PN-AAE-757

REPORT FOR 1969-70 TO AID  
FOR  
211-d INSTITUTIONAL SUPPORT GRANT  
OF THE  
DEPARTMENT OF INTERNATIONAL HEALTH  
JOHNS HOPKINS SCHOOL OF HYGIENE AND PUBLIC HEALTH  
BALTIMORE, MARYLAND

NOVEMBER, 1970

## I. SUMMARY STATEMENT

The first annual report provided the challenge of describing the origins of activities and the setting of directions. Subsequent reports can only elaborate on progress made with changes in direction growing out of experience. This report is, therefore, built on last year's annual report and will make references to it rather than repeating continuing activities.

While the first report dealt with beginnings and a rapid surge of development, the present report has as its primary theme "stabilization." It has been a good and productive year, both in Baltimore and in the field. Some long term plans are progressively taking shape. The most gratifying feature of the year's work has been the clear progress in personal development of competence and quality of work that has been evident in our faculty, staff and graduate students.

Baltimore activities continue to be mainly concerned with 1) an increasingly active teaching program; 2) planning, backstopping, analysing and reporting of field research; 3) involvement in an increasing range of consultation and service activities; and 4) the numerous details of maintaining an administrative framework that permits and supports all of these activities.

A particular feature of teaching at the Johns Hopkins School of Hygiene is that our academic program is built for students with previous professional preparation. Almost all of our candidates apply for admission already holding degrees at the doctoral level, either in medicine or in a paramedical field such as social sciences, economics or basic laboratory sciences. We expect them, as a minimum, to have had a masters degree, especially in such service fields as nursing. On such previous professional preparation we build special competence in health and population. Our primary function is to prepare leaders. Because of the high quality of our applicants, we are able to be even more selective in our admissions.

Overseas, we have devoted much attention to continued institutionalization of research and service activities. We are increasingly impressed by the continuing welcome that we receive as University representatives in almost all countries of the world, especially at a time when bilateral foreign assistance is being questioned. One of our most difficult problems is to have to say no to so many fascinating opportunities just because we cannot stretch our resources and start any further. Even more than in the first year, the significant qualitative change in our research is that we can concentrate more on tough, long-term studies focussing on critical issues and fundamental problems, rather than merely mounting relatively superficial and short-term projects on immediate issues having rapid payoff. The relative security of support provided by 211-d institutional financing has made it possible for us to undertake difficult projects that would have

discouraged us previously. We are striving to go directly to the heart of fundamental problem areas even though this may require much methodological pioneering and a certain amount of long-shot gambling, rather than only chipping away at the more obvious fringe issues. In football terminology, however, we do not limit our attack to long passes, but try to put together a cohesive and well thought out combination of plays building on each other. In order to do effective field work on basic issues, we have to spend much of our effort on short gain plays concerned with practical problems of improving methodology of research and, more importantly, specific measures useful in action programs. The big difference now is that we can invest in establishing the long term overseas involvement and building of skill that makes both types of attack possible rather than merely responding to immediate field opportunities.

A second major theme which is developing in our overseas work is a progressively greater emphasis on working through local personnel and institutions. We are trying to stimulate national scientists and officials to do the actual work while we provide ideas, specialized disciplinary skills and, wherever necessary, locally unavailable technical facilities. To work through local nationals in this way requires greater technical competence and patience than doing the work ourselves.

Experience this year confirms our previous conviction that the most important element in a progressive development of competence must continue to be qualitative rather than quantitative. This theme was developed at considerable length in last year's report. Qualitative improvements in competence, however, cannot be readily described but become evident as the work is done and in the caliber of the individuals who are attracted to our programs.

In this introductory section, it is especially important to summarize clearly developments in our continuing efforts to maintain an appropriate balance between health and population activities. The progressive shift in our activities to an overall 75% emphasis on population continues as planned. For a perspective on how we arrived at the present balance, it is important to recognize the historically complex derivations of our AID support. The situation is quite different from universities who are getting 211-d support for population alone. The Department of International Health started as a Division at Johns Hopkins in 1961 in response to requests from AID and other international agencies for an academic base for health activities. Basic support financing was provided. In 1964 AID was beginning to be aware of a need for an academic base for its early involvement in population activities. With the renewal of our basic support for international health, a parallel basic support grant for population was given to the Department of International Health as one of AID's first ventures into this area. These two basic support grants were terminating when 211-d funding became available. Because the Department of International Health had already made a beginning in developing an academic base for population and health activities, a transfer to this new funding

seemed particularly appropriate because these grants were designed to increase competence. In negotiating the 211-d grant, then, it was decided by AID that there should be a single grant to the University covering both of these areas with the overall allocation being about 75% for population and 25% for health over five years.

An additional historical consideration relating to total University involvement in population activities is that at the time of these negotiations, arrangements had been worked out for population activities in other departments to be supported from other sources. When this 211-d grant was negotiated, it seemed appropriate to School authorities to continue to concentrate AID funds in support of the Department of International Health. Responsibility for coordinating teaching and organizing basic population courses in the School of Hygiene was, however, assigned to the Population Dynamics Department which received basic support from NIH and the Ford Foundation. In addition, there were population activities in many other departments of the School of Hygiene and Public Health, the Medical School and the School of Arts and Sciences. A portion of the 211-d funds was distributed to other departments to help support their population teaching activities.

The present evolution of interdepartmental relations requires a new organizational structure to provide synergistic departmental cooperation. The decision has been made, therefore, to develop a Population Center in the School of Hygiene. Individual departments will continue to have primary responsibility for their present range of activities. The Center will ensure communication, provide a better channel of approach to outside agencies and develop new enterprises which require joint participation of various departments.

The present level of 211-d funding is already committed. A major problem looms ahead, however, because a significant part of the Ford Foundation basic support to the Population Dynamics Department will be terminating next year. It will be extremely desirable, therefore, to arrange supplementation of the 211-d support to compensate for the decreased funding from the Ford Foundation.

## II. RELISTING OF OBJECTIVES

We continue to maintain the objectives listed in our original request for institutional development support. For emphasis we list these objectives again.

### A. Objectives

The University plans to strengthen its educational competence by expanding its teaching capacity, curriculum and opportunities for students' practical experience in international health, population dynamics and family planning as related to the needs of the less developed countries.

Further development of research capability in these fields will be an integral part of the institutional grant program, and will be closely related to the educational activities.

### B. Scope of Specific Objectives

Under the above general objectives the following examples are illustrative of the kinds of activities contemplated. The relative attention given to particular areas will depend on priority considerations relevant at particular times. We are convinced that selectivity in choosing high priority areas is essential. It also is increasingly evident that we can achieve much mutual strengthening between disciplines by working simultaneously in the various related fields.

#### 1. Development of Research Competence

The scope of research activities will cover subjects such as:

a. Learning more about, and applying the developing methodology of health planning both in comprehensive national health planning and population and family planning.

b. Exploring in depth ways of developing better rural health services at reasonable cost and conducting field trials of varied administrative patterns in running family planning programs.

c. Increasing understanding of ways in which socio-cultural factors influence the acceptance of family planning and health programs, and more specifically, studying the attitudes of males toward family planning in Latin America.

d. Beginning studies on the interactions between health, population growth, and economic development.

e. Developing international comparative studies on epidemiologic analysis of health and nutritional status.

f. Improving the methodology of evaluating family planning programs.

g. Developing methodology and conducting studies applying operations research to population and health problems.

## 2. Development of Educational Competence

A major obstacle to effective U.S. assistance to the developing countries in the field of population and health is the lack of understanding of the special problems of economic development and overseas work among American health professionals. The usual medical education and experience of the American physician and other health workers does not include opportunities to gain comprehension of the drastically different living conditions and massive health problems of most of the world's people, especially in tropical areas.

In the further development of our department as a major academic center for teaching international health and population we will work toward strengthening activities such as:

a. Organization of rigorous academic programs for doctoral candidates and residents.

b. Opportunities for career specialization in population and international health for students who are taking a general masters program in public health.

c. Elective courses in population dynamics and international health for master's students specializing in other areas of public health.

d. Short courses for specialized groups.

e. The preparation of teachers of community medicine for overseas medical schools and working with selected medical schools in developing new educational approaches to the introduction of family planning in medical education.

f. New approaches to the preparation of paramedical and auxiliary health personnel and their utilization in health and family planning programs.

### III. DEVELOPING OF TEACHING COMPETENCE

#### A. Basic Courses

The faculty of the Department of International Health has continued to offer a broad spectrum of formal courses ranging from: Introduction to International Health to Decision Theory. Many of these courses, such as Population Growth: Interrelations, Problems and Policies, continue to be given in conjunction with other departments of the School. One of the greatest strengths of the Johns Hopkins academic structure is this diversity of involvement with multiple opportunities for cooperation and exchange.

This commitment to the interdepartmental approach is exemplified by a new course added during the past year. The Economics of Health is taught jointly by Dr. Alan Sorokin, an economist from our department, and Dr. C. A. Alexander, a public health administrator with primary appointment in Public Health Administration and joint appointment in International Health. This course concentrates on economic theory and skills that can be applied to problems of health and population. It is part of our continuing interest in the interrelationship between economic development, health and population.

Since the teaching of population and family planning is the primary responsibility of the Department of Population Dynamics, the main discussion of that area is included under "Interdepartmental Activities" in Section 6. Those efforts are included in this report because of the partial support allocated to Population Dynamics and other departments from this 211-d grant. Since the Department of Population Dynamics has been separated from Maternal and Child Health as an autonomous department, there has been continuing growth of teaching strength and courses as indicated in the listing under Section VI. In addition, teaching about population permeates all of the courses in International Health because the population problem underlies so much of basic understanding of health problems in less developed countries.

Our introductory course in International Health has continued to attract large numbers of students (51 in the fall of 1969 and 60 in the fall of 1970). These large numbers of students necessitated dividing the class into four discussion groups to ensure a satisfactory level of teaching on a small group seminar basis. In this course, most presentations that would normally be presented in lectures have been put into mimeographed readings so that the small discussion groups can start where most teaching leaves off with in depth discussion of the content material which has been presented. The accumulation of these selected readings in themselves has begun to provide what is essentially a textbook in this neglected field.

An important reason for maintaining a strong academic base in international health is precisely because there is, at this time, a feeling

that international health and indeed, international activity, generally is of diminishing importance for the United States. This is in dramatic contrast to the present surge of interest in such activities among our best and most idealistic students. The tendency to downgrade international work can be countered best by increasingly effective teaching programs. We have been particularly encouraged by the clear pattern that has developed for a significant mutual exchange of understanding and personnel between international programs and poverty programs in the U.S.A. This thesis is elaborated at more length in Appendix D.

In each course there is constant expansion into new or inadequately understood areas. For instance, the Department of International Health has become concerned with means for improving definition of the concept of optimum population and included a presentation on this subject in the joint course on population growth offered in the fourth quarter.

The special course in the Teaching of Community Medicine in Medical Schools was expanded to include more analysis of basic concepts of education and educational goals. Attempts to make students aware of the rapid development of pedagogic theory and method has obvious relevance for students who will serve overseas since so much of their work will have to be educational. This is particularly true because of the increasing emphasis on introduction of population dynamics and family planning into the curriculum of medical and nursing schools around the world.

In addition to formal courses, the Department of International Health again presented a series of seminars covering the major research projects of the Department, thus acquainting students with the type of research in international health and population dynamics that is carried on by the Department.

As in the past, a course on the epidemiological aspects of tropical diseases was given jointly in the fourth academic quarter by the Departments of International Health and Epidemiology. In addition, interested students and faculty took the initiative for organizing a luncheon seminar series on the clinical aspects of selected tropical diseases. The lectures were given by experts of The Johns Hopkins Medical Institutions and other medical schools and federal agencies in the vicinity.

#### B. Health Planning

The Department of International Health has continued to expand efforts in Comprehensive Health Planning. Activities had previously been limited to the fourth quarter of the academic year. However, last year we expanded the program to include an experimental program for six senior officials from less developed countries and WHO to provide in depth orientation in quantitative methods for health planning. This new

experimental program will be continued in coming years since it complements the fourth quarter program which deals with practical methods and applications of planning. This program includes the regular courses in health economics and decision theory, as well as special instruction in statistical methods such as multivariate analysis and the special applications of operations research techniques to comprehensive health planning. With increasing appreciation of the need for integrating family planning services and health services, the need for family planners to become acquainted with the theory and methods of comprehensive health planning becomes more apparent.

The teaching program itself is being expanded in two directions: process and content. Since our basic course in Comprehensive Health Planning is essentially a small group exercise in the development of a health plan for an actual geographic area, we have an excellent opportunity to promote awareness of the elements of group process. In actual planning situations individuals must relate to one another and must learn to accommodate to shifting roles in preparation for eventual work either in small groups or large organizational settings. Our teaching program is increasingly designed to prepare planners and administrators for practical working situations.

With respect to content, our program is continually updated to reflect the latest methods and techniques of planning, organization, administration, economic analysis, operations research, and information processing. As mentioned above, during the past year an especially noteworthy innovation was a specialized third quarter program in quantitative methods designed to complement the more generalized fourth quarter program in health planning. Thus, we have moved to integrate planning at the macro-level with more focussed questions of administrative research, and we feel that both areas of concern have been strengthened as a result. In order to further strengthen this integrated teaching program, we have plans to establish various institutional affiliations overseas in order that selected individuals from these institutions may not only participate in the training program in Baltimore, but may also conduct subsequent field studies within a formal consultation framework afforded by the Department of International Health. To illustrate, a particular country may have as a principal health planning concern the development of adequate numbers of appropriate categories of manpower for providing necessary family planning services within an ongoing health delivery system. An individual from this country could come to Baltimore in order to learn about the process and methods of manpower planning in general and the more specialized operations research techniques of manpower development and allocation. Then, upon return to his home base, he could apply these techniques under local conditions with the continuing guidance of our Baltimore-based Hopkins staff.

Another aspect of the substantive content of health planning is the development and utilization of an adequate data bank. The 1970 U.S. census

has provided us with the opportunity to acquire computerized demographic data relating to the urban area around Baltimore as well as Puerto Rico with its rural areas. With the addition of staff competence in demography and computer programming, as well as health planning, we expect to utilize these data for teaching and other purposes as well. For example, when small area statistics from our own Marangwal studies together with other regional and national census data are added systematically to this data bank, we will have an excellent opportunity to conduct comparative population growth studies.

As described later in Section VI, on interdepartmental activities, there has been increasing collaboration in the planning program with the Departments of Public Health Administration and Medical Care and Hospitals. The program has become a joint activity bringing together an understanding of international and U.S. problems and approaches. This has added teaching strength to the formal presentations as well as providing more discussion leaders so that the large class could be divided into six small working groups. The full participation of all class members in developing local or national health plans requires competent faculty supervision. In addition to those students already enrolled for their Master of Public Health program, the international participants in the course have included senior health planners from Ghana, Yugoslavia, Thailand, Vietnam, Finland, Egypt, Syria, Brazil, Iran, Korea, Philippines, Indonesia, Honduras, Southwest Africa, WHO headquarters, and AID permanent staff.

As the Department's competence in the teaching of health planning grows, there are increasing calls on the faculty for consultation, not only for AID and WHO, but also for host country governments. These consultations in health planning will be listed in Section V and Appendix C.

### C. Residents and Doctoral Candidates

Residents in International Health are doctors who undertake a two-year period of training following their MPH which is approved for meeting the certification requirements of the Specialty Boards in General Preventive Medicine.

The residency program has proved to be a particularly important part of the developing teaching competence that the 211-d grant has brought to the Department of International Health. Supervising residents is a challenging teaching responsibility for the faculty. Residents occasionally serve as junior instructors for basic courses and thus gain teaching experience.

Residency projects have included such programs during the past year as: Effects of a General Health Program on Increasing Interest in Family Planning in Bolivia; Effectiveness of the "Nurse-Practitioner Clinic" in Securing Increased Acceptance of Family Planning in Nigeria;

Development of Day Care Centers to Improve Nutrition of Papago Indian Children; and work with the AID Population and Health Division in Santiago under the direction of Dr. Thomas Hall of the Johns Hopkins faculty.

The residency program was the subject of considerable interest at the Schools of Public Health annual meeting in Washington in the Spring of 1970 when the general topic for technical discussions was the development of educational programs in International Health. The many problems of financing international health and population residents were discussed and strong support was given to AID's University Overseas Fellowship Program as a useful mechanism for supporting this important type of practical training.

Of the eight doctoral students in the Department of International Health half were in the field for the majority of the academic year 1969-70, The remainder were either developing their research design here at Hopkins or analyzing data previously collected in the field. The research projects range from sociological (Measurement of Attitudes of Health Workers and Indigenous Practitioners Toward Use of Indigenous Practitioners in the Indian Family Planning Programs) to administrative (Development of a Model for Use in Determining the Manpower Needs for National Family Planning Programs - Taiwan, Turkey, Kenya). Although several of our doctoral candidates have worked in India, there were also projects in Nigeria, Turkey, Taiwan and Ethiopia.

During the past year the international training potential of all departments in the University has been greatly augmented by the University Overseas Fellowship Program. This opportunity for supervised overseas experience provides a flexible framework for placing selected candidates in positions of challenging responsibility. We are particularly aware of the need for practical working experience because in most international work the demand is for individuals who have already gained sufficient experience to become advisors and administrators. There are few opportunities for professionals to make a start in gaining overseas experience and this new fellowship program helps to fill this need.

#### D. Educational Innovations

1) The Department continues to present a course in Teaching of Community Medicine for MPH candidates who plan to teach. This emphasis is particularly important overseas because so many of the innovations in family planning and international health depend on our ability to incorporate an appropriate orientation for doctors, nurses and other health professionals. This course is a training exercise for the faculty as well as the students. It gives an opportunity to try out in a stimulating classroom environment educational innovations that seem of interest and to discuss possible new approaches. A video-tape system has been acquired and is being used to give students and faculty an opportunity to observe and correct their own teaching performance. Consideration is being given to the field use of cassettes in inexpensive recorders as a mass educational device.

2) During the period of this report, at the request of the Dean, two members of the Department have been engaged in a long-range reassessment of the MPH curriculum to determine whether the present curriculum meets the needs of the present and projected job spectrum open to MPH graduates. These inquiries have consumed considerable time. Although still incomplete, we feel they have already materially influenced the thinking of faculty in all departments. These studies have resulted in a series of all-day seminars for department chairmen and other involved faculty. We feel this is an important contribution to improvement of the teaching resources of the school generally, as well as of students interested in the field of community medicine.

3) Within all of the activities of the Department of International Health there has been increasing stress given to the role and preparation of auxiliaries. Many research projects are concentrating on better definition of job descriptions and utilization, especially in terms of the tremendous local adaptations that are necessary to develop an appropriate job analysis under specific conditions. The greatest immediate challenge is to work out the categories needed for present rapid expansions of national family planning programs. As part of this rapid expansion, one of the most evident challenges is going to be the development of the educational resources needed. In India and Nigeria we have been working on training manuals for auxiliaries being prepared for local health and family planning services in rural areas. This involves careful evaluation of possible improvements in educational methodology to maximize educational impact most economically. We are also working on methods for in-service training.

E. Courses Offered and Numbers Enrolled

- |                         |  |
|-------------------------|--|
| International Health 1. | Introduction to International Health<br>(3 units) First quarter: T.Th. F<br>51 students (1969) - 60 students (1970)  |
| International Health 2. | Seminar for Program Planning and Project<br>Development in International Health.<br>(3 units) Third quarter: M.W.F.<br>10 students (Admission by permission of<br>instructor only) |
| International Health 3. | Quantitative Decision Procedures<br>(Given jointly with Dept. of Biostatistics)<br>(3 units) Third quarter: M.W.F.<br>34 students  |
| International Health 4. | Planned Change.<br>(Given jointly with Dept. Behavioral Science<br>(2 units) Fourth quarter: M.W.<br>45 students   |

- International Health 5. Comprehensive Health Planning  
(Given jointly with Public Health Admin.  
and Medical Care and Hospitals)  
(10 units) Fourth quarter: 5 days a week  
43 students
- International Health 6. Epidemiology 10. Logistics, Techniques  
and Interpretations of Epidemiologic  
Field Studies of Infectious Diseases.  
(4 units) Fourth quarter: T. Th.  
43 students
- International Health 7. Population Growth: Interrelations, Problems  
and Policies.  
(Given jointly with Population Dynamics)  
(4 units) Fourth quarter: M.F.  
20 students
- International Health 8. Area and Language Study  
(Not given 1969-70)  
1970-71 - 2 students
- International Health 9. Teaching of Community Medicine in Medical  
Schools.  
(2 units) Third quarter: T. Th.  
21 students
- International Health 10. Economics of Health 33 students  
(2 units) Third quarter: M.W.
- International Health 20. Special Studies  
(See Special Studies Students Reports)
- International Health Seminars: Second quarter: 30 students  
Third quarter: 30 students
- Comprehensive Health Seminars: (Given jointly with Public Health  
Administration and Medical Care  
and Hospitals)  
First quarter: 50 students  
Second quarter: 50 students
- Tropical Disease Seminars: 30 students

F. Departmental Students

1) Residents: (1969-70)

a) First year, MPH

Payne, John V.  
Roht, Lewis H.  
VanArsdell, William R.

b) Second Year - field

Taylor, B. Brooke Jr., Montero, Bolivia (Prec. J. Alley)  
Wellman, John, Lagos, Nigeria (Prec. Adeniyi-Jones)  
Davis, Joe, Special Health Economics Work(Global Comm.  
Medical Resident)

2) Doctoral Students:(1969-70)

Andrews, Sunny, M.S.W.,A.B. (in field)  
Asfar, Desta, M.P.H.  
DeSweemer, Cecile, M.D. (in field)  
Gorosh, Martin, M.P.H. (UOPF)  
Grover, Prakash, B.A.  
Sangal, Prakash, B.Sc., M.Sc. (infield)  
Scott, Richard, M.A. (Homewood)

3) Masters Students with interest in International Health:

(1969-70)

Abdullah, A.	Keeler, R.	Scheidt, P.
Afzal, S	Molina, R.	Pope, M.
Ali, M.	Kuhner, A.	Ragaglia, P.
Arole, R.	Levy, M.	Rolland, G.
Borcherding, D.	Marshall, M.	Pedersen, D.
Brown, P.	Mayhugh, C., Jr.	Schnoll, D.
Bruns, J.	Khoury, S.	Shah, M.
Collis, P.	Monjan, A.	Shane, P.
Downie, E.	Moolky, L.	Shean, M.
Durfee, P.	Nalder, S.	Simmons, J.
Esler, D.	Newman, J.	Smith, G.
Ferencz, C.	Pabon, H.	Stiles, H.
Ferraz, E.	Patterson, D.	Stillner, V.
Jenkins, D.	Payne, J.	Studnicki, J.
Zartman, J.	Presant, J.	Vaughan, F.
Melton, O.	Wolfee, E.	

3) Masters Students with interest in International Health (cont'd)

(1970-71)	Amidi, S.	Mumm, A.	Kleinbach, A.
	Andejelkovic, D.	Mushlin, A.	Kim, Mr.
	Avery, C.	Nambudiripad, G.	Rakow, A.
	Bracewell, M.	Newell, P.	Rao, A.
	Brown, W.	Munez, M.	Luther, M.
	Christianson, C.	Oldham, W.	Ringelberg, M.
	Dagi, T.	Oyemade, O.	Romain, J.
	Duhaney, S.	Perry, H.	Ronaghy, H.
	Dungy, C.	Gammon, J.	Sandoval, J.
	Echeverri, O.	Goldschmidt, P.	Thompson, D.
	Ey, J.	Gopalan, C.	Wagley, P.
	Ferrand, G.	Gussow, Z.	Wallace, E.
	Ferscher, C.	Harrison, I.	Weiss, W.
	Magsi	Hayes, G.	Westfall, J.
	Koppanyi, Z.	Hostetter, C.	White, D.
	Lavoie, G.	Hsu, O.	Woo, M.
	Law, R.	Hurlburt, W.	Wright, B.
	Mahr, C.	Kakar, D.	Golda, A.
	Martin, H.	Khattab, I.	Bistran, B.
	McDaniel, J.	Khokhar, E.	Sr. Kranz
			Dahl, A.

4) Senior Health Planners - Certificate (1969-70)

Baddoo, Michael. A. (Ghana)  
Bujevic, Aldo (Yugoslavia)  
Castle, C. Hilmon (U.S.)  
Sanyakorn, Chaiyan K. (Thailand)  
Chau, Duong Minh (Vietnam)  
Hellberg, J.H. (Finland)  
Hilmy, S. M. (U.A.R.)  
Iskandarani, Nimer (Syria)  
Leitao, Fernando (Brazil)  
Mossadegh, A. (Iran)  
Nazif, Kamal M. (U.A.R.)  
Ngoc, Nguyen Kien (Vietnam)  
Robb, Ian S. (Canada)  
Roman, Generoso B. (Philippines)  
Sarnanto, Dr. (Indonesia)  
Saroukhanian, G. (Iran)  
Viseshsiri, Sirivat (Thailand)  
Tassin, P. R. (Geneva)  
Velasquez, Danilo (Honduras)  
Vogel, L. C. (Netherlands)

G. Special Student Studies (1969-70)

1. Comprehensive Health Care in Rural India.  
Dr. Arole
2. Rural Health Care in Ethiopia by Low Level Auxiliaries.  
Dr. Schmoll
3. Evaluation of Smallpox Eradication in West Africa.  
Dr. Mayer
4. Evaluation of Family Planning.  
Dr. Collis
5. Coordination of Medical Resources in the Congo.  
Dr. Evans
6. Interaction of Malnutrition and Infection.  
Dr. Kielmann  
Dr. Pedersen
7. A Program for Maternal and Child Health Services in  
Cote de'Ivoire.  
Dr. Rolland  
Dr. Laaser
8. Social Environment and Health.  
Dr. VanArsdell

H. Visiting Lecturers

1. Dr. Lee Howard  
Director, Health Services AID  
October 2 "The AID Health Program" (IH-1)
2. Dr. Reimert Ravenholt  
Director, Population Service WOH/AID  
October 7 "The AID Role in Population" (IH-1)

H. Visiting Lecturers (continued)

3. Dr. Abraham Horwitz  
Director, Pan American Health Organization  
October 21 "P.A.H.O." (IH-1)
4. Dr. Peter Ruderman  
University of Montreal, Canada  
April 6 "Economic Considerations in Planning" (IH-5)
5. Dr. John Atwater  
New Haven City Health Department, Conn.  
April 10 "Census Data in Health Planning" (IH-5)

I. Departmental Seminar Program

1. International Health Seminars:

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Nov. 18	Medical Education in Iran	Dr. Donald Ferguson
Dec. 2	The Training of Health Personnel in Gondar	Dr. Edward Dodge
Dec. 9	Nutrition Studies in Peru	Dr. George Graham
Dec. 16	The Chile Projects	Dr. William Reinke Alice M. Forman, R.N.
Jan. 6	Population and Nutrition Studies in Narangwal	Dr. Carl Taylor
Jan. 13	The Nigerian Projects	Dr. Robert Wright
Jan. 14	Progress in Indian Health	Dr. Alan Sorkin
Jan. 20	The Functional Analysis Studies	Dr. C.A. Alexander Dr. Robert Parker Mr. Richard Scott

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2. Comprehensive Health Seminars:

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Sept. 11	The Philosophy of Health Planning	Dr. Abel Wolman
Sept. 18	Background of Health Planning	Dr. Ernest Stebbins
Sept. 25	The Organization & Structure for Comprehensive Health Planning	Dr. Carl Taylor
Oct. 2	Panel Discussion of Comprehen. Hea.Plng	Drs. Taylor, Stebbins, Bushel
Oct. 9	Demographic Consideration in Long Range Planning	Dr. Margaret Bright
Oct. 16	Social & Political Considerations in Health Planning	Dr. Sol Levine

#### IV. RESEARCH COMPETENCE

##### A. India

##### 1) Narangwal Population Studies

The increasing polarization in the United States between proponents of family planning and population control creates a confusing situation in negotiations overseas. The reality that population control has to be built on an effective base of family planning services leads to growing need for information on the determinants of family planning acceptance. Among these the interrelationship of factors related to health are obviously important.

In our Rural Health Research Center we are making our most concentrated effort to demonstrate whether integration of health and family planning is feasible. We are also attempting to measure the relative increments in family planning acceptance that can be achieved by combining it with varying packages of health services - especially women's services and child care. The project was started partly because we found that there was little scientific evidence supporting the common sense hypothesis that parents will not stop having children until they have assurance that those they already have are going to survive. In order to test the validity of this common sense point of view, it has been necessary to set up field services to prove that family planning and health for mothers and children can be provided in integrated services under village conditions.

Fifteen miles south of Ludhiana in the Punjab, the villages included in our Narangwal project are undergoing fantastic economic development and social change with wheat production having gone up as much as three times in the past few years. We deliberately chose to work in a place that seemed to have maximum potential for success because India badly needs the encouragement of some evidence of positive achievement in family planning. The Punjab has a larger population than many countries so in itself justifies such an effort.

The type of field experiment we have undertaken at Narangwal required a prolonged tooling-up effort. We now have approximately 100 Indian staff in our research efforts at Narangwal working in a population of over 25,000 in 23 villages. Much of our work input has been for research data. Baseline surveys include five separate household interviews in every home with a large team of specially trained master's level Punjabi interviewers. These data are being analyzed.

Even more time consuming has been the process of working out the routines for four different service package programs. In one group of villages we give family planning alone, in another group family planning and child care, in a third family planning and maternal care and in the fourth all three. A fifth group is followed as a control. Comparison of family planning acceptance and use will give evidence on how much each approach

contributes to family planning at the village level. There is suggestive evidence that we are beginning to record a fall in birth rates which probably started before our service program got underway.

All of our village service is built around the Auxiliary Nurse Midwife and Lady Health Visitor. One auxiliary serves a village of about 1300 people but because about half of their time is devoted to research we feel that they should be able to care for a population of about 2500. They handle both curative and preventive health services as well as family planning, referring major problems to supporting professionals. The whole activity is geared to developing patterns of service that can be directly applied in government subcenters. It is already clear that the national training programs will have to be drastically revised.

General interest in our results in India is rapidly increasing. During the past year we have had an increasing flow of visitors. This includes groups such as a WHO Inter-regional seminar for professors of Obstetrics, Pediatrics and Social and Preventive Medicine who came for several days of depth involvement in field work. Government officials at all levels in the Central and State government come to see for themselves that what we are doing works and is safe. There has been much verbal acceptance of the sorts of things we are demonstrating but little field demonstration. The fact that all of this is done in a research setting seems to make the innovations more acceptable.

Narangwal is being designated a WHO Regional Research Center in rural family planning. This will necessitate adding a staff to cope with future conferences and seminars. The Government of India has asked that the Narangwal Annual Conferences be revived. These were an important component of the research project on rural orientation of physicians in past years which led to rapid implementation of our findings. The new series on Rural Family Planning will be conducted for two days each year. Arrangements will be made for 50-60 leaders from all over India to live in tents in the village setting, while going over research findings and discussing their relevance to policy decisions.

Due to impending termination of grants supporting the Narangwal Rural Health Research Center, major time and effort were expended during the year on negotiations for new funds. Reports and grant applications were submitted. Now, after a long, slow negotiation period, the research projects have solid financing for two years and approval for five years.

## 2) Epidemiological Studies of Leprosy in Calcutta and Purulia

The general course of the research program under this grant has continued as over the previous nine years. The major effort in the field work in Bengal villages is to define by more precise epidemiological studies the phenomenon of finding acid-fast bacilli in skin biopsies of individuals exposed to leprosy but showing no clinical signs of leprosy. Complete

surveys of four villages have now been done and 4,136 people have been examined clinically. Of these, 3,226 have also had earlobe skin biopsies. Those not examined by biopsy are mainly infants under one year and active leprosy cases who are excluded as a matter of policy from the biopsy survey. An overall positivity rate of skin biopsies in people without clinical signs of leprosy is 6.5%. The active clinical case rate is 4.4% in this same population. In the series of village people examined during the past year, there is no clear epidemiological association of positive cases with family contacts of leprosy patients as we had observed in the first two villages. More detailed efforts at epidemiological analysis are being carried out.

We are continuing to try to set up a better laboratory base for trying to identify the acid-fast bacilli found in skin biopsies. There are two main methods that we expect to use. So far we have not been able to get a laboratory facility in Calcutta where the method of inoculating mouse foot-pads can be used. Such experiments must be done very carefully because the bacilli found in biopsies will probably be below the minimal threshold level of bacilli required for positive growth. The second method we are trying to develop is histopathological examination of skin biopsies. Again, because of the rarity of the bacilli which are found by our concentration method, we will have to set up this investigation with the anticipation that a long and tedious search will be necessary to find bacilli in nerve endings. In the meantime, Dr. Chatterjee is continuing his efforts to cultivate leprosy bacilli.

The general epidemiological observations on the occurrence of leprosy in these intensively observed villages will permit longitudinal accumulation of data on the family occurrence and transmission pattern of leprosy.

To backstop the field work in India, laboratory investigations on the effect of the digesting solution for skin snip biopsies on viability of acid-fast bacilli have been done. It appears that the digesting solution adversely affects the viability of bacilli similar to the leprosy bacillus. (Funded by NIH).

### 3) Indigenous Practitioners and Family Planning

The official health systems of most developing countries disregard the ubiquitous presence of indigenous practitioners, particularly in the rural areas. The conflict between modern medical systems and the indigenous systems of medicine hinders efficient utilization of available health manpower. Since 1966, this department has been actively studying the role of indigenous medical practitioners in the traditional health cultures of India and Turkey. An increasing purpose of these studies has been to assess the practitioners' attitudes towards family planning and their response to a possible role in the national family planning campaigns. The preliminary results from Punjab and Mysore states in India are encouraging. The Turkey study of indigenous midwives indicates the desirability of educating them about the family planning program. All three studies were completed during

this year and they will be published shortly.

In addition, a new project has been conducted in Kerala during the past year to get opinions from village people, indigenous practitioners and health center personnel about the possibility of using the practitioners in the government family planning program. Detailed investigations have shown that in this part of India with a particularly strong tradition of Ayurvedic medicine, the possibility is worth trying. Data are being analyzed and may contribute directly to efforts to undertake trials for the national family planning program.

#### 4) Nutrition and Infection Project

The Nutrition and Infection Project is an exercise in child care measuring the efficiency of different packages of child care in reducing child morbidity and mortality and to enhance physical growth.

The development of the different child care packages and their delivery through a health team where 98% of direct patient contacts are made by auxiliaries (auxiliary nurse midwives or lady health visitors) has made great demands on innovative training and new managerial approaches. Equally important has been the active search for tools for community diagnosis for child health. This year a very intensive effort has been made to identify cross-sectional methods that would satisfy the needs of developing countries and permit an action oriented diagnosis of the nutritional status of children under 5 years. A first attempt was also made at community diagnosis through a cross-sectional diagnostic program for tuberculosis with follow-up therapy.

One of the fundamental hypotheses relating to family planning links child survival to family planning practice. We have increasingly the impression that infectious morbidity by its higher incidence and prevalence may be a more sensitive factor than mortality in determining the attitudes of the parents and the population in general about the health status of the children and may possibly influence family planning attitudes.

The nutritional status is another possible indicator to parents about the health status of their child. The development of tools to permit the parents to "see" the growth of their children could make a substantial contribution to let this factor play its role in family planning acceptance. The sensitivity of our villagers to infectious morbidity was well shown by the village lambardar of Chaminda spontaneously describing, during a village meeting, that after we had a DPT drive not a single whooping cough case occurred. In another village, Mansuran, where measles was endemic the year around, a live measles vaccine (Schwarz strain) drastically reduced the incidence except among unvaccinated children, this fact prompted mothers and the local female Panchayat member to plead for a new drive immunizing all of the children.

We have used simple weight charts (developed by Dr. D. Morley, London) as a health education device to keep mothers informed about their children's growth. The charts have proved very "readable" for illiterates and it is a joy to observe how mothers develop a sense of security as growth curves normalize and stay within the standard development range.

4) Functional Analysis of Primary Health Centers in Marangwal in the Punjab and Bangalore in Mysore State

For a number of years we have directed considerable attention to the difficult problem of relating levels of community need to the activities and services rendered through local health care systems. Interest in this matter has been further heightened by the rapidly increasing recognition of family planning needs and the consequent concern for optimal patterns of combining health and family planning services.

The project has the following objectives: 1. To define more clearly the functions to be carried out in the health centers. 2. To discover the resources now assigned to each of these functions and the present distribution of activities conducted by the health centers. 3. To study the relative qualitative level required by each of these health activities and the personnel who can most appropriately carry them out. 4. To try to develop innovative and practical approaches to matching available personnel and resources to the competing health needs. 5. To set priorities for health programs on the basis of community health needs which will be measured by a prospective one year survey. 6. To describe other potential applications of operations research methods and to streamline the general procedure so that it can have wide administrative use.

Operating on the thesis that a functional framework is the most appropriate basis for analyzing service needs and availability, we have completed a full year of community and health center data collection in 39 villages and 13 health centers of Turkey and India. The immense volume of closely interrelated units of information have been transferred onto magnetic tape and summarized via computer. A report of the study design, findings, and recommendations is in process and will be completed in December, 1970.

Drs. Robert Parker (Marangwal) and C. Alexander (Bangalore) who have directed the field work in India and Richard Scott (who worked with Warren Winkler in Turkey) have returned to Baltimore and are working with Dr. Reinke in putting the two sets of data together in an effort to develop recommendations for more effective allocations of health worker effort.

Such a comprehensive systems analysis has required multidisciplinary effort over a period of years. The fields of competence employed in the Baltimore project headquarters have included: epidemiology, administration, economics, operations research, behavioral sciences, medical care, and statistics. Just as the input has been multidisciplinary, the results serve many and varied interests. Most importantly, however, we feel that we have in hand the making of a simple, yet comprehensive, information system that can be implemented through routine administrative application under the varied circumstances found in de-

veloping nations. The data derived from such application can be used for establishing local health and population needs, especially the high-priority ones that are currently unfulfilled. The information system further quantifies present activity and service patterns and thereby provides guidance to the possibility for transfer of functions to individuals with lesser skills, especially as family planning, child care, or other activities are added to an already overburdened staff.

The methods developed in the functional analysis studies are currently being applied to the assessment of the innovative service packages being developed within the framework of our Narangwal Nutrition and Population Projects. Of special interest is the costing of these services in order to determine the practicability of their application operationally throughout India.

#### B. Turkey

Overall direction of the functional analysis field study in Turkey has been the joint responsibility of Dr. Warren H. Winkler, Research Associate in our department, and Dr. Nadir Takerli, of the School of Public Health in Ankara.

This project has been examining the functioning of rural health centers under the Nationalization of Health Services Program in three Eastern Provinces of Turkey (Diyarbakir, Kars, Mus).

Data has been collected systematically on nine health centers (three in each province) and the communities served by them during six week periods at four different times, thus providing for seasonal variations.

Three Turkish teams of trained investigators lead by a public health physician made the observations and interviewed in the field. A fourth team headed by Mr. Richard Scott, an American sociologist with extensive field experience in Turkey and a member of our departmental staff, has conducted a study, in depth, of multiple factors affecting health and disease patterns in rural Turkey. The anthropological approach has provided large amounts of information on knowledge, beliefs, attitudes, and behavior which is valuable in providing flesh for the bones of our other data collected by operations research procedures. Socio-anthropologic information is being obtained from community leaders concerning the local power structure,

important economic indicators, extent of urban contact, major health problems, attitudes toward health centers and various categories of health workers, utilization of other practitioners, and community health factors such as source of water supply, prevalence of pests, immunization status, and latrine construction.

Additional understanding of community characteristics and peculiarities is being gained through a brief household survey regarding nuclear and extended family composition, possession of assets, urban contacts, recent births, infant mortality, illness and accident recall, and attitudes toward the use of the health services.

Processing of the data is underway in Ankara as well as Baltimore. Staff and facilities have been made available in Ankara by the Turkish Government's School of Public Health, State Statistical Institute and Middle East Technical University and a report in Turkish is being prepared.

One of the unique features of the Ankara project is the intensive study of indigenous birth attendants (untrained midwives) in villages of Eastern Turkey. Interviews have provided detailed information on the background and practices as well as the roles of 54 indigenous practitioners. This is a significant achievement in an area where this type of practice has been outlawed but has been at the same time a necessary part of rural life for decades. Preliminary review of the information collected in this study suggests valuable clues to ways of including these workers in expanding and improving maternal and child health and family planning services.

### C. Manpower

Research in manpower, one of the initial programs emphasized in the Department of International Health has continued its position of importance. One of the major developments is a doctoral research program being carried out by Martin Gorosh (formerly with AID in India). Mr. Gorosh with the guidance of Dr. Baker, Dr. Reinke, and Dr. Taylor has developed a model for projecting demands for manpower needed for family planning programs. This project is being carried out in collaboration with Mr. Al Lackey of the Manpower Division of AID. The method will be tried first in Taiwan, where there is adequate data to test its effectiveness and utility, and then applied in Turkey and in Kenya under varying manpower constraints.

The health manpower study in Thailand was continued through the '69 - '70 academic year with two research consultation visits by Dr. Baker to former Thai students who are carrying out the program. There are difficulties and delays in a study financed and carried out by local personnel in a developing country. However, the great advantages of improved chances of acceptance and application of the results is worth the extra trouble.

In Chile, Dr. Thomas Hall has completed an extensive health planning program, dealing primarily with health manpower for the government of Chile. A major report in Spanish has been prepared which has informal approval from health officials of the incoming government. There is an excellent possibility that it will be implemented.

At the request of AID, a consultation was held with the Health Ministry of Indonesia on the feasibility of setting up health manpower planning in Indonesia. The impetus for this program was the need to provide additional manpower to cover the health ministry's new family planning programs. The initial consultations in Indonesia have been followed-up by conferences with Indonesian officials visiting the United States and through presentation of the outline for the research needed to the nationwide Task Force on Family Planning meeting in Djakarta.

The research competence of the department in the area of health manpower planning and family planning manpower should not be regarded as limited to Hopkins. Students and colleagues on our various research programs are now carrying out their own manpower studies and manpower plan development. Our service as advisors and collaborators continues to enhance the competence of the Department of International Health.

#### D. Nigeria

##### 1) The Gbaja Family Health Nurse Project, Lagos, Nigeria

This is a demonstration project, the goals of which are:  
1) to deliver continued curative-preventive ambulatory care to a defined group of preschool children at reasonable cost using nurse clinicians as primary decision makers; 2) to provide daily health education and family planning counseling to the mothers of these children; 3) to measure the results; and 4) to develop a training protocol for nurses working in such a system.

During 1969-70 Dr. John Wellman did research at the Gbaja Clinic to evaluate the impact of the Clinic on the associated family planning clinic of the Department of Community Health. Dr. Nick Cunningham visited Dr. Wellman during the year and will return to the project in April of 1971. The use of nurses and midwives as primary care agents for young children has been endorsed by the Society of Health of Nigeria. A family planning cubicle is now being set up in the Gbaja Street Clinic.

##### 2) University of Lagos Activities

The work of the Department of Community Health at the Medical College of the University of Lagos continues with solid accomplishments. Dr. Adeniyi-Jones is now acting as Chairman of the department since Dr. Robert Wright's return to Hopkins, a well qualified Nigerian staff performs the regular teaching assignments. There continues to be a

growing number of Lagos Medical College graduates who are continuing their medical education with specialization in the field of Family Planning and Community Medicine. (Funded by Ford Foundation, Population Council, and Lagos University Medical School)

3) Demography and Family Planning

A large scale demographic study by Dr. Robert Morgan is providing fundamental information on population dynamics in an African urban concentration. Practical field studies are being done of variables influencing acceptance of family planning in urban clinics. Dr. William Reinke together with Dr. Nicholas Cunningham have collected and are analyzing information from Nigeria concerning family planning attitudes, to ascertain the relation of these attitudes to morbidity and mortality experience of children and the presence of health services. The renewed Ford Foundation support for the demographic studies has now terminated. The survey team, however, has been held intact by transfer to the Gbaja Project under a UNDP grant. The Ford Foundation is continuing its support of the Family Planning Clinic in the Department of Community Health.

4) The Ilesha Study (An Evaluation of an Auxiliary Based Child Health Service in Rural Nigeria).

The field work of this study was completed in 1967. In 1968 - 69 the data was transferred to punch cards and tapes for analysis. A final report in the form of a doctoral thesis is being prepared and should be published in 1970 (Dr. Cunningham). Preliminary results suggest that the system is both economical (Approximately \$5.00 per child per year) and effective (Mortality of children 1-5 years of age reduced by 1/2 with improved growth and development of survivors.)

The program also resulted in a reduction in statements of desired family size but no reduction in fertility has appeared so far.

E. Chile

1) Men's Attitude Towards Family Planning, Santiago, Chile

The principal aim of this study (Dr. M.F. Hall) is to help broaden the focus of the present Chilean Family Planning program from one involving only the medical profession and its women patients, (mainly post-partum and post-abortion patients)- to one seen as pertinent to society as a whole - men as well as women, educators and economists as well as physicians, and adolescents as well as their married older siblings. Between June 17 and July 29, 1968, 801 men were interviewed in Santiago and a nearby rural area. Results were coded on a magnetic tape. The first stages of the analysis have been completed and an article on "Men and Family Planning Education" has been accepted by Cuadernos Medico-Sociales.

## 2) Evaluation of the Chilean Family Planning Program.

This study was started in December, 1968 by Dr. M.F. Hall and Jose Ugarte. Its aim is to measure the present resources of the program, both in human and material terms to estimate the number of women being served, and to set up a mechanism for such periodic evaluations.

In addition, an attempt was made to correlate family planning activities in any one area of the country with changes in maternal mortality (with deaths due to abortion analyzed separately) and infant mortality. The questionnaire, is being administered to approximately 300 public facilities providing contraceptive services after being pre-tested. Statistics are simultaneously being gathered on maternal and infant deaths. Results should be available in the coming year.

## 3) Administrative Studies in Health Planning

The manpower study of demand for health services is beginning to take real form on the Chilean side. After almost a year while virtually alone, Dr. Thomas Hall now has a Chilean team (full-time) of two physicians, a dentist, pharmacist, midwife and nurse working on a supply survey. Reports have been made to the Technical Advisory Council and official contact has been established with the Planning Office of the University of Chile.

The study of demand for health services is going reasonably well. Many forms are already in hand. Apparently they are fairly well filled out. Unfortunately, the reported demand for care is well below estimates. Much time has been spent with supervisors and going out with interviewers.

A medical care study has been completed under Dr. Alberto Diaz's direction. Several recommendations have already been put into practice and high officials are beginning to express interest in activities and press for results.

## F. Economics

The major activity in economics research is the initiation of a project to determine the relative importance of economic development versus family planning in "explaining" the beginning decline in the Punjab birth rate. A highly relevant consideration is to determine the timing of the decline in the birth rate in Punjab since the family planning program is relatively recent while economic growth has been quite rapid since independence.

Hopefully this type of analysis can be extended to other developing countries and regions experiencing a fall in the birth rate. Thus, an important ultimate goal of this project is to develop a methodology which will make interregional and international comparisons possible regarding factors influencing birth rate declines.

## G. Nutrition in Peru

### 1) Out-patient-treatment of diarrhea

Our successful experience in the ambulatory care of diarrhea in a rural environment was reported. The same principles have been applied to over 2,000 cases in a slum dispensary with similar success, although follow-up has not been as complete. With the recent training and introduction of a Pediatric Nurse practitioner, we have been able to significantly increase the numbers treated. She is able to identify and manage the milder cases, referring the more severe ones, and all those with underlying second and third degree malnutrition, to the physicians. On various occasions she has successfully instituted intravenous therapy on an emergency basis in cases with obvious acidosis or severe dehydration. The training of volunteer "health aides" drawn from the slum community has given us a "social service" which permits home visits and the tracking down of missed return appointments. This now makes possible, among other things, a more accurate assessment of results obtained.

### 2) Long-term follow-up studies

In a number of reports we documented significant deficits in stature of children admitted a few years earlier with severe malnutrition, compared with the 50th percentile of a U.S. standard. When head circumference was also related to a similar standard, it seemed to be even more severely affected, lending considerable further substance to the idea that brain growth, because of its much accelerated timetable, is selectively affected by malnutrition in early life. We noted, however, that some children experienced considerably more "catch-up" growth than others, and that this was related to significant improvements in their environment. During the past four years we have been carrying out a much more systematic follow-up of our discharged patients and all their siblings, with repeated, at least yearly, evaluations of their living conditions, economic status, educational achievements, and the stability of their families. For this purpose we are following over 120 families. From 18 of them we have admitted to our convalescent unit shortly after birth a younger sibling and assured him or her the best possible health and nutritional status until 18 to 27 months of age. A preliminary report indicates that our severely malnourished index cases have caught up in stature with their so-called "healthy" siblings, but that both are well below the genetic potential demonstrated by the truly healthy siblings. Within a year of discharge, however, most of this last group have become just as stunted as the rest of the family, demonstrating no apparent advantage to the best over the average or the poorest start in life. They do differ in their ability to make up rapidly their more recently acquired deficits. For all three groups, head size is approximately equal at the same height, suggesting that there is just as much "catch-up" potential in brain growth as in that of other systems. At a given height, age discounted, these children have heads which are smaller than those of the U.S. 50th percentile but larger than those of the 3rd percentile, indicating that they belong to a different population and that we were not justified in relating stature and head size to the 50th percentile.

We recently analyzed the growth of a group of children whose home environment improved dramatically after discharge from our unit, usually by adoption or placement in the care of a more privileged relative. Even some of the seemingly most stunted have demonstrated remarkable "catch-up" potential, continuing to grow at accelerated rates for 8 or 9 years, and reaching the 10th and 25th percentiles of the U.S. standard for height, with head sizes appropriate to their length. Their school performance has been satisfactory but this needs confirmation by formal testing. Quite notable has been the ability of some to make significant "spurts" at 7 or 8 years of age, a period of usually slow growth.

### 3) Ecology of malnutrition

The longitudinal study of the families of severely malnourished infants and children has allowed us to become intimately familiar with the environment in which severe malnutrition develops. Most of its components are universal and to be found among the poor of any nation, with differences being primarily ones of degree, particularly in the depth of their poverty and the availability of public services. The peripheral slums of Lima have no telephone service; public transportation is primitive in the daytime and non-existent at night; electricity is limited almost exclusively to dim and spotty street lighting; running water is equally spotty and available to a minuscule percentage of homes; water for drinking, cooking and washing is purchased in barrels; there is no sewage system and privies are almost unknown; open stretches of ground are used for defecation or for the disposal of chamber-pot contents; home refrigeration is a very rare luxury; cooking is with gasoline, kerosene or charcoal; most homes consist of one or two floorless rooms made of matting or cardboard with roofs of the same materials or of tin or concrete sheeting; there are no sidewalks and none of the streets are paved; food is generally purchased from tiny grocery stores or from a primitive local market. Despite the obvious drawbacks, these slums have decided advantages over those of the inner city and were formed by groups of people deserting these. Each family owns its plot of land and, although crowded in its own home, enjoys a fair degree of privacy from neighbors. As their economic situation improves, they first put up brick walls and a better roof, then a floor, and eventually electricity and less often running water. Because these slums were formed in the open arid desert, there is no stagnant water and no vegetation.

Within this setting there is considerable variation in the ability of families to cope, and in the health and nutrition of their children, even when per capita income may be nearly identical. In very few families the children grow up to their genetic potential; in the vast majority growth is at a considerably slower rate and eventual stature is significantly compromised. In many of these, severe malnutrition will occur in only one child, seldom the first or second, and in some it is a recurring phenomenon. Of the many factors which we have identified as prominent in causing severe deterioration of an already precarious situation, most

important is the absence of a regularly employed father, whether by abandonment, jailing, severe illness (tuberculosis in particular), alcoholism, or the lack of working skills in a chronically depressed economy. The immediate consequence is a mother who must work away from home, cannot care for her children, and cannot feed her infants at the breast. These, and other factors such as family size, level of education of the parents, length of stay in Lima, quality of the home, and money available for food, are being catalogued and related to the growth of the children, the incidence and severity of malnutrition, and mortality.

#### 4) Ambulatory treatment and prevention of malnutrition

Initially our dispensary in one of these slums served as a setting for further experience in the ambulatory treatment of diarrhea, as a source of patients for treatment and study in our metabolic unit, and as a supervised out-patient experience for our Residents. With better organization and supervision, expansion of its own diagnostic services, and finally the on-the-job training and introduction of the first of three Pediatric Nurse Practitioners, we have developed a model for the identification and treatment of malnutrition. Basic to this is the use of a weight for height, instead of weight or height for age, standard to classify severity of malnutrition. In this large slum we offer service to the poorest segment, a population of approximately 45,000 people. All children (and their accompanying siblings) brought to the dispensary are weighed and measured and have their vital signs recorded by a trained "aide". Second or third degree malnutrition, by our weight for height standards, or an abnormality of a given magnitude in vital signs (according to age) is reason for automatic referral to the attending Pediatric Residents. Basic laboratory data are obtained in advance: this includes urine, stool, complete blood count, hematocrit, total serum protein (TS meter), and just recently added, chest X-ray if indicated. The remaining patients are seen by the Nurse Practitioner and on the basis of history and physical signs, according to a rigid scoring system, may again be referred to the Residents or treated directly by the Nurse for minor illnesses or first degree malnutrition. Second degree malnutrition is evaluated and treated by the Residents, with referral for consultation and guidance to a "Nutrition Clinic" operating in the dispensary. Third degree malnutrition, after being examined by the Residents, is referred to our hospital unit for admission or to the Nutrition Clinic for management. The recent training and introduction of a growing number of "voluntary health aides" (from each of the 11 subdivisions of the population of 45,000) is facilitating the giving of realistic instruction to the mothers, surveillance of compliance, the obtaining of help from the community, and continuity of care.

The "voluntary health aides" are trained primarily to give immunizations and other injections, to weigh, measure, and take vital signs, and to carry out tasks in the dispensary, such as night-time supervision of intravenous fluid therapy. Each of the 11 subdivisions has its own elected government, which includes a "health committee," and is building

a small satellite dispensary (3 are completed) to serve as a base of operations for a program of growth monitoring and immunization to be carried out by the "aides." In one of these subdivisions a census was completed and the program is under way, with its details being polished as we go along. The census in the second subdivision is now under way. The monitoring of the growth of all children is serving to identify malnourished children by the same weight/height standard. First degree malnutrition calls for nutrition advice as well as identification of social problems and the seeking of assistance in the community; second and third degree malnutrition are referred to the dispensary, there to follow the same course of those appearing spontaneously. The parents actively seek and accept immunization but none are given unless heights and weights are taken and properly plotted. The mother receives a copy of the growth curve and immunization record. If these are up to date, the child in question is entitled to a reduction in the fee for the services of the dispensary, from the equivalent of 11 to that of 7 U.S. cents per visit. These, plus similar small fees for laboratory procedures, cover most of the costs of the dispensary with the exception of the diarrhea program and that of the Residents' and Nurses' salaries, borne by the British American Hospital and our research program.

A "family spacing" clinic, based on education and the "pill," operates in our dispensary. All the professionals connected with our program have learned to identify families who can profit from these services and may refer them directly to this clinic. We consider it a basic prerequisite for referral to have first demonstrated our concern for them as a family unit. Some mothers, particularly those without a stable "husband" may be referred to a separate birth control clinic relying on the IUD and operating in the same slum.

#### H. Chad and Afghanistan - Geographic Epidemiology

Field Work: A clinical and epidemiological follow-up on micro-filaruria in onchocerciasis was conducted in Chad during January and February 1970. The investigating team included an epidemiologist, laboratory scientist, internist, urologist, pathologist, ophthalmologist, dermatologist, and a nurse. The results of this study confirmed the high prevalence of urinary manifestations of onchocerciasis among the residents of Ouli Bangala, a village located in the southernmost tip of Chad, where infection is holo-endemic. Living microfilariae of Onchocerca Volvulus were recovered from small urine samples obtained by ureteral catheterization. These and other findings were reported to the Parasitology Unit of the World Health Organization in Geneva.

Between July and August of 1970 a special follow-up study on malaria was carried out in Kunduz Province of Afghanistan. The results of comprehensive epidemiological investigations of Afghan villages by the Geographic Epidemiology Unit of The Johns Hopkins University in 1968 indicated that endemic transmission of malaria (Plasmodium vivax) had continued in the area after 12 years of continued residual DDT spraying. In 1969 various smaller epidemics of malaria were recorded from areas north of the Hindu Kush Mountains. The results of our follow-up study at the

seasonal peak of malaria transmission revealed a parasitemia rate for P. vivax of between 20 to 40 percent among children under ten years of age in various rural communities surveyed. The entomological findings based on studies by Dr. Ronald A. Ward of WRAIR indicated that Anopheles superpictus, previously the most important malaria vector in the area, had been replaced by two rice field breeding anophelines, i.e. A. hyrcanus and A. pulcherrimus. Specimens of both species were collected and were found to have a high plasmodium infection rate.

Preparations for the establishment of a semi-permanent center for epidemiological research of tropical diseases in Central and West Africa included visits to government officials and professionals of the Republic of Chad and Cameroon during the month of October 1970. If sufficient funds can be raised for this purpose, the enthusiastic support of the local governments, physicians and medical institutions seems to be assured. The project will be endorsed, and in all likelihood symbolically supported, by small grants from the World Health Organization.

V CONSULTATIONS AND SERVICE

Increasing demands for consultation time are coming from AID, WHO and countries themselves. We continue to try to meet these demands because they are so often directly related to or growing out of teaching and research activities but find that we are forced into choices just because we cannot be in two places at the same time. We feel that our most challenging opportunities are the many occasions where we can directly influence the policy development in less developed countries. The intimate associations of mutual respect which have grown out of having senior officials as students or as collaborators on projects leads to unequalled opportunities to influence their decision making. Most of these consultations do not appear on the list because they are carried out best in informal contacts at their homes or ours, or in evening discussions at international meetings or most often through informal correspondence. This expanding network of intimate association represents one of our most valuable investments because it is particularly true in less developed countries that it takes a long time to build confidence but that once established such mutual trust can be more important than any other force in international exchange.

(See Appendix C for individual listing of faculty consultations and services)

## VI INTERDEPARTMENTAL ACTIVITIES

As outlined in the introduction to this report, one of our concerns in planning the use of 211-d support has been to distribute the funds appropriately in the University. At the time the grant was obtained, the School agreement was that overall strengthening of University competence could be best achieved by building up the capability in population and health in the Department of International Health with lesser allocations of money to four other departments in the Schools of Hygiene and Medicine and joint appointment in the faculty of Arts and Sciences. On this basis, all of the funds were quickly committed for the full five years of the grant. Now with financial stringencies in support from other sources the School is experiencing considerable need for further expansion of resources.

One of the strongest features of the programs in Population and in International Health at Johns Hopkins has been the ability to maintain interdepartmental involvement. It was realized that with separate departments in each of these areas there would be a natural tendency to centralize activities in these departments. A long standing pattern in the School, however, has been the deliberate effort to get maximum participation by other departments in an activity. For instance, since the start of the Department of International Health we have felt that we were being most successful when we are able to encourage the largest possible number of faculty from other departments to be involved in international activities. This was not difficult since the School of Hygiene has an illustrious tradition of overseas work.

When the present surge of interest and funding for population activities was being built on the long-standing history of pioneering in this area within the School, again it did not seem wise to construct a monolithic organization because this would have tended to discourage the involvement of other departments. As a result, we feel that we have been able to develop and maintain unique strength and capacity throughout the faculty in various aspects of population matters. This has become most evident in our overseas involvements. The Population Dynamics Department has had its major overseas base in Pakistan while the Department of International Health has had its largest continuing population activity in India. It would have been difficult for one group to work in both countries for political reasons but our double departmental involvement has made it easy - with opportunity for sharing of learning back in Baltimore. Functionally, the Department of International Health has concentrated on issues relating to the integration of family planning into health services while the Department of Population Dynamics has three units dealing with: Family Planning Administration, Reproductive Biology, and Demography.

The increasingly evident need for systematic coordination and facilitation of communication has now led to the establishment of a School Population Center headed by Dr. Jack Kantner. This center has the responsibility of

providing a better communication channel from the School to outside agencies. It also will increase the opportunity for departments to improve their capacity to work together in both teaching and research.

In the specific statements which follow there is rather brief mention of particular areas of interdepartmental activity. In addition to those specifically mentioned it must be reiterated that there are numerous additional points of contact with all of the departments of the School having international health or population involvement.

A. Activities Within the Department of Population Dynamics

This department evolved from being a unit in the Department of Maternal and Child Health, through a period when it was a major part of the Department of Population and Family Health to the independent departmental status established in 1969. Teaching about population matters is focussed in the Population Dynamics courses listed below. To help support this population teaching a block grant has been made from the 211-d grant. In addition, a wide range of research projects have been developed. The lists which follow illustrate the range of their activities. Most of their basic support continues to come from NIH and Ford Foundation. As pointed out elsewhere in this report, this department is facing financial stringencies with the reduction of Ford financing which will be partly alleviated by the AID programmatic grant which is being negotiated.

1) Staff Promotions

- a. Hugh J. Davis, M.D., from Lecturer to Assistant Professor, effective July 1, 1969.
- b. Melvin Zelnik, Ph.D., from Associate Professor to Professor, effective July 1, 1969.

2) Resignations

- a. Frances Damratowski, M.S.N., Instructor, effective July 1, 1969.
- b. Jean E. McCarthy, M.S., Instructor, effective June 30, 1970.
- c. Andrew C.W. Montague, M.D., Assistant Professor, effective July 1, 1969.

3) New Appointments

- a. Joseph F. Kennedy, M.D., Assistant Professor, effective July 1, 1969.
- b. Ann M. Koontz, M.S., Instructor, effective August 1, 1969.

- c. George J. Marcus, Ph.D. Assistant Professor, effective July 1, 1969.
  - d. Richard W. Osborn, Ph.D., Assistant Professor, effective May 1, 1970.
  - e. David M. Paige, M.D., M.P.H., Assistant Professor, effective September 1, 1969.
  - f. Samuel Stern, Ph.D., Assistant Professor, effective July 1, 1969.
- e. Courses Offered and Number Enrolled (1969-70)
- a. PD-1: Introduction to Population Dynamics. (45 students)
  - b. PD-2: Introduction to Physiology and Methods of Fertility Regulation.
  - c. PD-3: Population Growth: Interrelations. Problems and Policies. (13 students)
  - d. PD-4: Maternal and Child Health. (43 students)
  - e. PD-6: Introduction to Demographic Methods. (10 students)
  - f. PD-7: Family Planning Administration (17 students)
  - g. PD-9: Biology of Reproduction (13 students)
  - h. PD-10: Population Studies. (28 students)
  - i. PD-11: Techniques of Estimation. (5 students)
  - j. PD-12: Stochastic Models for Birth, Death and Illness Processes. (6 students)
  - k. PD-14: Population Mathematics. (3 students)
  - l. PD-15: Research Seminar in Demography. (10 students)
  - m. PD-20: Special Studies and Research - (30 students)
  - n. Special course for eight short-term trainees in biostatistics at about Biostatistics 1. level, family planning administration, and family planning methods.

5. Departmental Degree Candidates

a. Master of Public Health - 26

PD: Afzal, L.S.  
Arole, M.  
Dehejia, N.  
Ferraz, E.  
Khan, M.  
Kolawole, A.D.  
Liao, S.C.  
Mayhugh, C.  
Mir, Z.S.  
Moline, R.  
Robinson, C.  
Singhadey, O.S.  
Stampar, D.

b. Doctor of Public Health - 7

PD: Alam, S.  
Chi, I.C.  
Dellaportas, G.  
Zafir, S.

c. Master of Science - 5

PD: Chaudhury, R.H.  
Chung, S.O.  
Cross, M.  
Destler, H.  
Shah, M.A.

d. Doctor of Science - 7

PD: Alam, I.  
Alam, Z.  
Hayat, F.  
Hopkins, S.  
Monjon, U.  
Osteria, T.  
Ramakumar, R.

e. Doctor of Philosophy - 1

PD: Norris, D.

f. Special Students - 9

PD: Ahmed, K.A.  
Ansari, B.  
Huq, A.K.M.S.  
Islam, A.  
Islam, S.  
Malik, T.  
Outb, S.  
Rashid, I.  
Sweitzer, J.

g. Post-Doctoral Fellows - 5

PD: Finn, C.  
Kamel, W.  
Kramen, M.  
Melton, R.  
Peterson, R.

6. Departmental Seminar Program - Population Dynamics

November 19, 1969	MCH and Family Planning Programs in Maryland	Dr. Matthew Tayback Assistant Secretary of Health, Mental Hygiene & Scientific Affairs, State of Maryland
November 26, 1969	Status of MCH and Family Planning at the Federal Level	Dr. Arthur Lesser, U.S. Children's Bureau, D.C.
December 3, 1969	The Evaluation of Federal Family Planning Programs	Dr. J. Richard Udry, Professor, Dept. of MCH, School of Public Health, University of N.C.
December 17, 1969	Advances in Fertility Control with Emphasis on Orals	Dr. Aquiles J. Sobrero, Director, Margaret Sanger Research Bureau
January 7, 1970	Extent and Implications of Unwanted Fertility in the U.S.	Dr. Larry Bumpass, Office of Population Research, Princeton, New Jersey
January 14, 1970	Menstrual Cycle Factors Related to Fertility	Dr. Hilton Salhanik, Harvard School of Public Health, Boston, Mass.

January 28, 1970	Maternal and Child Health in Developing Countries	Dr. Cecily Williams
February 4, 1970	Sex Ratios at Conception	Dr. David Phillips, Assistant Professor, Social Relations, JHU
February 11, 1970	Family Planning in Taiwan: Progress and Prospects	Dr. L.P. Chow, Visiting Associate Professor, Population and Family Health
February 25, 1970	Allied Professionals in Obstetrics and Family Planning	Dr. Louis M. Hellman, Chairman, Dept. of Obstetrics & Gynecology, State University of New York, Brooklyn, New York
March 4, 1970	Condom Distribution Program to Reduce Unwanted Pregnancy	Mr. Lenni W. Kangas, Deputy Director, Office of Population, AID, Washington, D.C.
March 11, 1970	Interactions of Malnutrition and Infection	Dr. Mevin S. Scrimshaw, Professor and Head, Dept. of Nutrition and Food Science, Massachusetts Institute of Technology
March 18, 1970	The United Nations Fund for Population Activities	Mr. John Keppel, Chief, Population and Family Planning, United Nations

## 7. Research Activities of Faculty

STUDIES ON OOGENESIS, CLEAVAGE, AND IMPLANTATION (Dr. John D. Biggers). The aim of this project is to determine the interactions between the genetic constitution of the preimplantation mouse embryo and the maternal environment. This work will be carried out using in vivo and in vitro studies. Some of the accomplishments may be seen in some of the publications from the Reproductive Biology Division. (PD)

ANALYSIS OF PROGRAMS FOR PREGNANT ADOLESCENTS (Dr. J.J. Dempsey) The original intention of comparatively evaluating selected health, education and welfare components of programs serving adolescents pregnant out-of-wedlock has had to be modified due to cutbacks in funds that forced severe restrictions or abandoning of most programs. Work continues with the Cleveland and Baltimore City programs and essentially involves delineation of specific input information, the system for forming on a continuous basis this data,

and analysis of outcomes of services provided. A Monograph Series is being prepared for national distribution. (MCH)

EXPLORATORY STUDIES OF DIFFERENTIAL FERTILITY (Drs. J.F. Kantner and M. Zelnik). Drs. Kantner and Zelnik carried out several exploratory studies related to Negro fertility under a grant from the Social and Rehabilitation Service (SRS) of HEW. A larger study based in part on this work has been approved by NIH. (PD)

OÖGENESIS IN THE HUMAN (Dr. J.F. Kennedy). Aim: to determine the requirements of the human oocyte for the completion of meiotic maturation in vitro and in vivo. (PD)

OVUM IMPLANTATION (Dr. G.J. Marcus). The key question of this work is: What are the inter-relationships between the endometrium of the uterus and the blastocyst which determine the specificity of implantation? (PD)

THERAPEUTIC ABORTIONS WITH SPECIAL REFERENCE TO TEENAGERS (Dr. W.C. Opper). An initial analysis of therapeutic abortions performed at the Johns Hopkins Hospital will be undertaken and subsequently throughout Baltimore City. Fundamental characteristics of populations seeking, obtaining and rejecting abortions among teenagers is the focus of this study. (MCH)

NURSE PEDIATRIC PRACTITIONER PROJECT (Dr. D.M. Paige). A screening form, scoring system and guidelines have been devised to assist a Nurse Pediatric Practitioner in staging the delivery of primary health services to an impoverished population in Lima, Peru. The screening and scoring system is designed to utilize more effectively the time of the non-medical personnel, maximize the number of patients able to be served, facilitate patient flow, enhance communication between nurse and physician, and to produce a feasible system for routine data gathering and program surveillance. The system has been established and is currently being evaluated. (MCH)

EPIDEMIOLOGY OF OUTCOME OF PREGNANCY IN DIVERSE CULTURES IN SELECTED COUNTRIES (Dr. R.V. Rider) (PD)

EVALUATION OF SEX EDUCATION PROGRAM AND CONTRACEPTIVE SERVICES FOR UNMARRIED TEENAGE GIRLS (Dr. T.T. Sasaki). Dr. Sasaki continued his studies in connection with evaluation of the Planned Parenthood-Urban League project in teenage fertility in West Baltimore. (PD)

STUDIES CONCERNED WITH HORMONAL OVARIAN TISSUE INTERACTIONS (Dr. A.W. Schuetz). The aim of this work is to determine what factors regulate meiosis at the cellular and molecular level and what agents are responsible for the onset of ovulation. (PD)

WEST PAKISTAN RESEARCH AND EVALUATION CENTER (Dr. I. Sirageldin) Dr. Sirageldin directed the analysis of data for the basic reports of the Pakistan "Impact Survey." This is the first study of fertility and family planning in Pakistan to be conducted on a national scale with a probability sample of women of reproductive age and a subsample of their husbands.

STUDIES ON THE PREIMPLANTATION STAGES OF DEVELOPMENT (Dr. S. Stern). The main aim of this work is to determine the role of carbohydrate metabolism in the development of the preimplantation mouse embryo. (PD)

B. Comprehensive Health Planning as an Interdepartmental Program

Considering the fact that our teaching program in Comprehensive Health Planning has been established for several years, the expansion of its thrust in the last twelve months has been quite remarkable. It has become increasingly interdepartmental and multi-faceted.

While the program continues to be directed from the Department of International Health, a formal advisory group has been formed to include faculty from the Departments of Public Health Administration and Medical Care and Hospitals as well as International Health. In addition, a substantial teaching commitment is contributed by the Departments of Behavioral Sciences, Demography, Population Dynamics, Mental Hygiene, Environmental Health, and Epidemiology. Students come from each of these areas with a considerable expansion of the class to 44. In addition to international country and regional plans we have included two groups who develop U.S.A. regional plans.

C. International Center for Medical Research and Training

One of the outstanding units in the world today concerned with basic research in tropical medicine is the Johns Hopkins Center for Medical Research and Training in Calcutta. Supported by the National Institutes of Health, there has been an active research program using clinical, laboratory and epidemiological approaches.

Diseases Studied

Institutions

Cholera  
Diarrheal  
Diseases

Calcutta School of Tropical  
Medicine  
Institute of Child Health  
Infectious Diseases Hospital

Leprosy

All India Institute of Hygiene &  
Public Health

Liver Diseases

Post Graduate Institute of  
Medical Education & Research  
S.S.K.M. Hospital

Medical  
Entomology

Calcutta School of Tropical  
Medicine

Medical  
Zoology  
(Ecology)

Science College, University of  
Calcutta,  
Calcutta Zoological Gardens  
Zoological Survey of India

<u>Diseases Studied</u>	<u>Institutions</u>
Parasitology	Calcutta School of Tropical Medicine  All India Institute of Hygiene & Public Health Indian Statistical Institute
Virology	Institute of Postgraduate Medical Education & Research  Institute of Child Health  West Bengal Health Department

The Department of International Health is actively involved in the overall planning and administration of the program. In addition, our leprosy research is part of the overall effort.

D. The International Journal of Health Services

This new journal with publishing starting this year will be a multidisciplinary publication devoted to the subjects of planning, administration, and evaluation of health services. Published on a quarterly basis, it will contain analytical and descriptive articles on policy and methods as well as papers on original research in these areas. Objectives of the Journal are to offer an international forum for new thinking of the concepts, problems and techniques in the planning, administration and evaluation of health services, and to provide a means for the exchange of information among health professionals working in these fields in a variety of political, social, and economic environments.

Each issue will contain approximately one hundred pages and will include a table of contents, editorials, letters to the editor, a "viewpoint" section containing discussions on a topic of current interest by authors with different points of view, six or seven articles with abstracts, book reviews, and notices. A proper balance between policy and research papers, as well as between contributors representing diverse viewpoints and nationalities will be sought in each issue. The first issue will appear in February 1971.

## VII. WORK PLAN

The funds provided in this grant have already been fully allocated over the five years of the grant period. This is shown clearly in the projections shown in the financial report (Section VIII) where it is clear that at present rates of expenditure, we will not have sufficient funds for even a normal 10% increase to cover increments and inflation.

Any major changes in direction, therefore, will have to be carried out by reducing present activities in particular areas. The only way in which we can see this as a likely possibility is by a) obtaining other sources of funding to pick up particular on-going activities; and b) changing the location of overseas bases.

We are hoping that there will be new funding for an expansion of our functional analysis studies to establish an international comparative study. We also hope to be able to pick up some partial support for core staff who will be developing research projects under the new Programmatic Grants Program from AID/Population Division. Finally, we will be reducing activities in Chile with the return of Drs. Thomas and Françoise Hall to Baltimore. In Nigeria we are serving only in a consultant capacity to the continuing projects that have been developed over the past six years of our involvement there.

Turning to presently planned activities in research, we find ourselves being ever more deeply involved in expanding research in India. The population program at Narangwal continues to grow in importance and in its potential contribution to the national program. There has been growing pressure from the government that we start demonstration projects on the basis of our findings in the poorest parts of India. Because of the difficulties of working out interrelationships with state governments we have found it difficult to move rapidly on such projects. This problem has now been largely resolved by the proposal that we serve as technical advisors for the new demonstration projects being started in Mysore and the U.P. by the World Bank. They will eventually be working in four districts in each of these states with each district averaging about 2 million people. Of particular importance will be a much needed massive expansion of a new pattern of training for the auxiliary nurse-midwives who are the key personnel needed for subcenters. We are developing a whole educational unit at Narangwal to work out the educational base for this expanded ANM training program. Because of the great need for supportive supervisory staff, we are also continuing experimentation on modification of field training for medical, nursing and lady health visitor schools.

A second possible area of expansion will be in Africa where we are engaged in discussions about an Afro-American residency program and possible involvement in educational experimentation with new efforts to introduce family planning in medical schools. These discussions are at an early stage.

We will continue involvement with programs in Thailand, Indonesia, etc. In Latin America we will be exploring opportunities for new involvement as we reduce activities in Chile, with Brazil offering particular opportunities.

In our teaching program, the major changes will be in our continuing efforts to improve quality. After the new chairman of the Department of Population Dynamics is selected there will undoubtedly be further changes in teaching responsibility. There is a continuing growth of challenging opportunities provided by our doctoral and residency programs, especially with the new possibilities of field work under the Overseas Population Fellowship Program.

VIII. EXPENDITURE OF GRANT FUNDING

<u>Line Item</u>	<u>Previous Projection for 1969-70</u>	<u>Actual Expend. 1969-70</u>	<u>Estimated Expend. for 1970-71</u>
Salaries	\$ 177,000	\$ 223,462	\$ 227,000
Pilot & Student Projects	15,000	1,545	12,000
Fellowships	54,000	20,517	20,000
Travel	31,000	28,405	19,500
<u>Other Direct Costs</u>	<u>18,000</u>	<u>24,407</u>	<u>25,000</u>
Sub-Total	295,000	298,336	303,500
Salaries for Depts. of Population Dynamics & Biostatistics	50,000	33,377	50,000
<hr/>			
TOTAL	345,000	331,713	353,500

Combined expenditures of the Department of International Health have been slightly greater than projected. The salary overrun was brought about primarily by cutbacks and shortages in other sources of Federal funding, (several of which were outside the Department) and to a lesser degree to increases in staff. Compared to the first year of the grant, total personnel changes were up seventy-one percent. The expenditures shown in the Pilot and Student Projects category are only those for Dr. Wellman's work in Lagos, Nigeria. For Dr. Francoise Hall's study in Chile, also budgeted in this category, costs were accruing during the latter part of the reporting period but had not been entered on the University's books. The total cost of her study, the field work for which was completed in October, 1970, will be close to the original budget.

The availability of other funding for several students in our degree programs, as well as the fact that several students began their overseas field work during the year and therefore were transferred to various salaried positions, account for the underrun in fellowships. The principal factor in the Other Direct Costs overrun was the necessity of using costly duplicating methods, a problem that has been met by the acquisition, with 211-d funding, of more economical equipment in the department as well as the creation of centralized duplicating services in the School.

Total expenditures in the Department of International Health were within two percent of the projection in the previous report.

Expenditures were also allocated to our three major areas of concentration: a) health, b) integration of health and population, and c) population. We have used the distribution of faculty effort as a basis for analysis, with the listing of faculty members receiving support from 211-d and the allocation to each heading being presented in Appendix B. The graph on page 46 illustrates how the allocations of our expenditures to these areas shifted toward the population end of the spectrum during the second year, as well as the percentage of support going to the various departments.

Expenditures in the Departments of Population Dynamics and Biostatistics have been made against the annual block budgets of \$30,000 and \$20,000 respectively that were allocated to them at the inception of the grant.

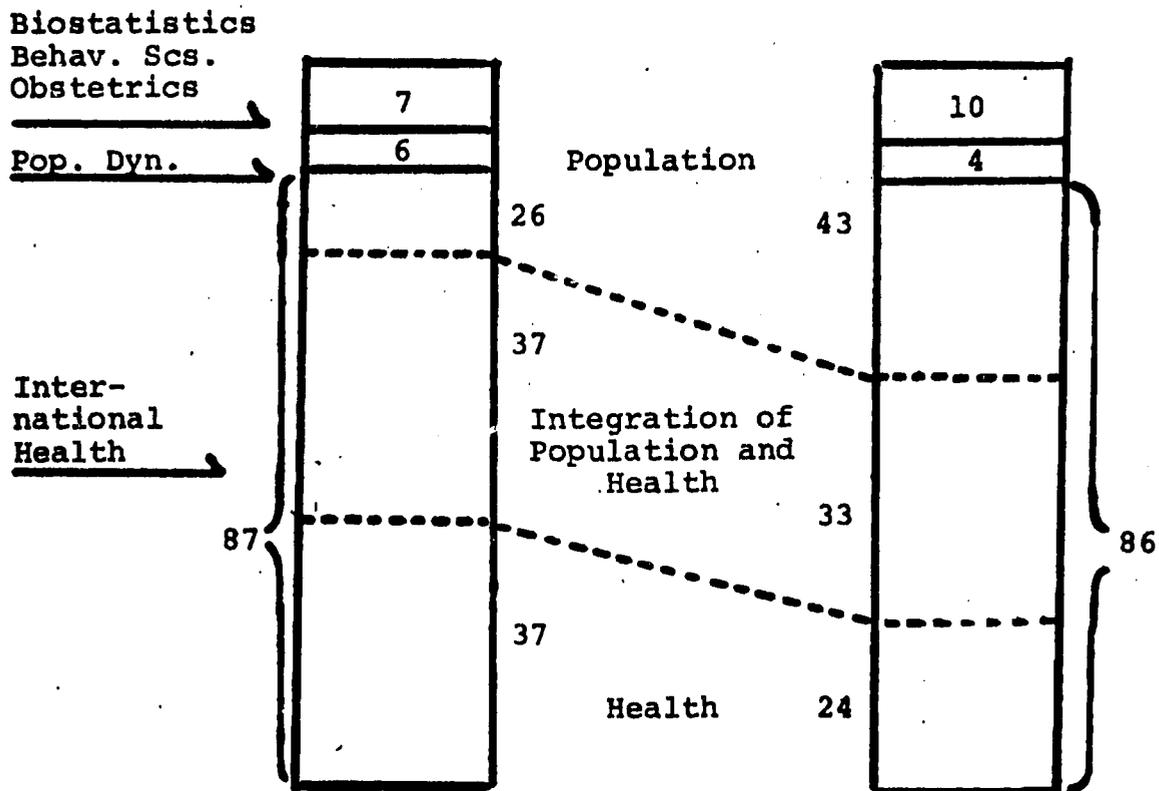
Lists of international travel and equipment purchases during the year will also be found in Appendix B.

The FY 70-71 estimate projecting an increase of less than two percent over last year's expenditures, reflects our broad theme of stabilization of activities, not to mention financial necessity. The second year of the grant saw a rapid increase in staff supported by 211-d, as well as an approximately fifty percent expansion of our already large research base in Narangwal. The latter is separately funded but requires substantial technical and logistical backstopping from Baltimore. The emphasis now is on improving the quality of our work to meet more complex needs.

Looking further ahead, the graph in Appendix B illustrates an updated projection of our total expenditures from 211-d originally prepared in January of 1970. (Block budgets for

other departments, mentioned earlier, are included in the overall totals). While the cumulative total is still below the original projection, the trend of the curve clearly indicates the need for stabilization. Since average salary and fringe benefit levels have been rising at a combined rate of ten percent or more for several years, and since inflation can be expected to increase our other costs by at least five percent annually, it is now impossible to increase staff and expect to stay within the budget. However, the present situation is that in response to requests from other departments who have recently suffered cutbacks and who are working in areas related to the grant objectives, we are attempting to increase the support allocated to them from 211-d funding.

PERCENTAGE OF EFFORT  
SUPPORTED BY 211-d GRANT TO  
JOHNS HOPKINS UNIVERSITY



IX. PUBLICATIONS

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- \_\_\_\_\_, "International Health: Getting More Than We Give." Image and Commentary. 12(4):3 1970.
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## APPENDIX A

### DEPARTMENT OF INTERNATIONAL HEALTH

#### I. STAFF AND FACULTY

##### A. Promotions

William A. Reinke, Ph.D., Professor  
C. Alex Alexander, M.B., B.S., Dr. P.H., Associate Professor  
M. Francoise Hall, M.D., M.P.H., Assistant Professor

##### B. New Appointments

Thomas E.C. Barns, B.M., B.Ch., D.M., F.R.C.O.G.,  
Associate Professor  
Elsie L. Ferguson, Ph.D., Associate (International)  
Dolores Laliberte, B.Sc., M.Nursing, Associate  
(International)  
David McK. Lawrence, M.D., Associate (International)  
Ernest Y.T. Yen, Dr.P.H., B.M., Associate (International)  
Herbert K. Abrams, M.D., M.P.H. Lecturer  
Ruth M. White, R.N., M.S., M.P.H., Lecturer

##### C. Joint Appointments

Robert I. Anderson, Ph.D., Associate Professor  
Paul E. White, Ph.D., Associate Professor

##### D. Resignations

Abel Wolman, D.Eng., Professor Emeretis  
M. Alfred Haynes, M.D., M.P.H., Professor  
Tom T. Sasaki, Ph.D., Associate Professor  
Warren H. Winkler, M.D., Research Associate  
Edward Grzegorzewski, M.D., Lecturer  
Matthew Tayback, Sc.D., Lecturer

##### Professor

Carl E. Taylor, M.D., Dr.P.H., Chairman  
Timothy D. Baker, M.D., M.P.H.  
\*\*Alfred A. Buck, M.D., Dr.P.H.  
George G. Graham, M.D.  
\*\*Sol Levine, Ph.D.  
\*\*Norman A. Scotch, Ph.D.  
\*\*Ernest L. Stebbins, M.D., M.P.H.  
Robert D. Wright, M.D., M.P.H.  
\*\*Allan C. Barnes, M.P.

## APPENDIX A-2

### Associate Professor

Thomas L. Hall, M.D., Dr.P.H.  
\*\*John W. Williamson, M.D.

### Assistant Professor

Angel Cordano, M.D.  
\*\*Hugh J. Davis, M.D.  
Donald C. Ferguson, Ph.D., M.P.H.  
\*\*Vincent Navarro, M.D., D.M.S., Dr.P.H.  
Alice M. Forman, R.N., M.A., M.P.H.  
Alan L. Sorkin, Ph.D.

### Research Associate

Biswa R. Chatterjee, M.B., B.S.  
Cecile DeSweemer, M.D., D.T.M., Dipl.Hyg.  
\*\*Anna A. MacRae, Sc.M.  
Robert W. Morgan, Ph.D.  
Robert L. Parker, M.D., M.P.H.  
S. Prakash Sangal, M.Sc.

### Assistant

Elizabeth P. Elliston, M.A.  
Richard B. Scott, M.A.

### Senior Associate (International)

C.A.A. Adeniyi-Jones, L.R.C.P., M.R.C.S., D.P.H., M.P.H.  
S.C. Hsu, M.D., M.P.H.  
A. Torab Mehra, M.D., M.P.H.

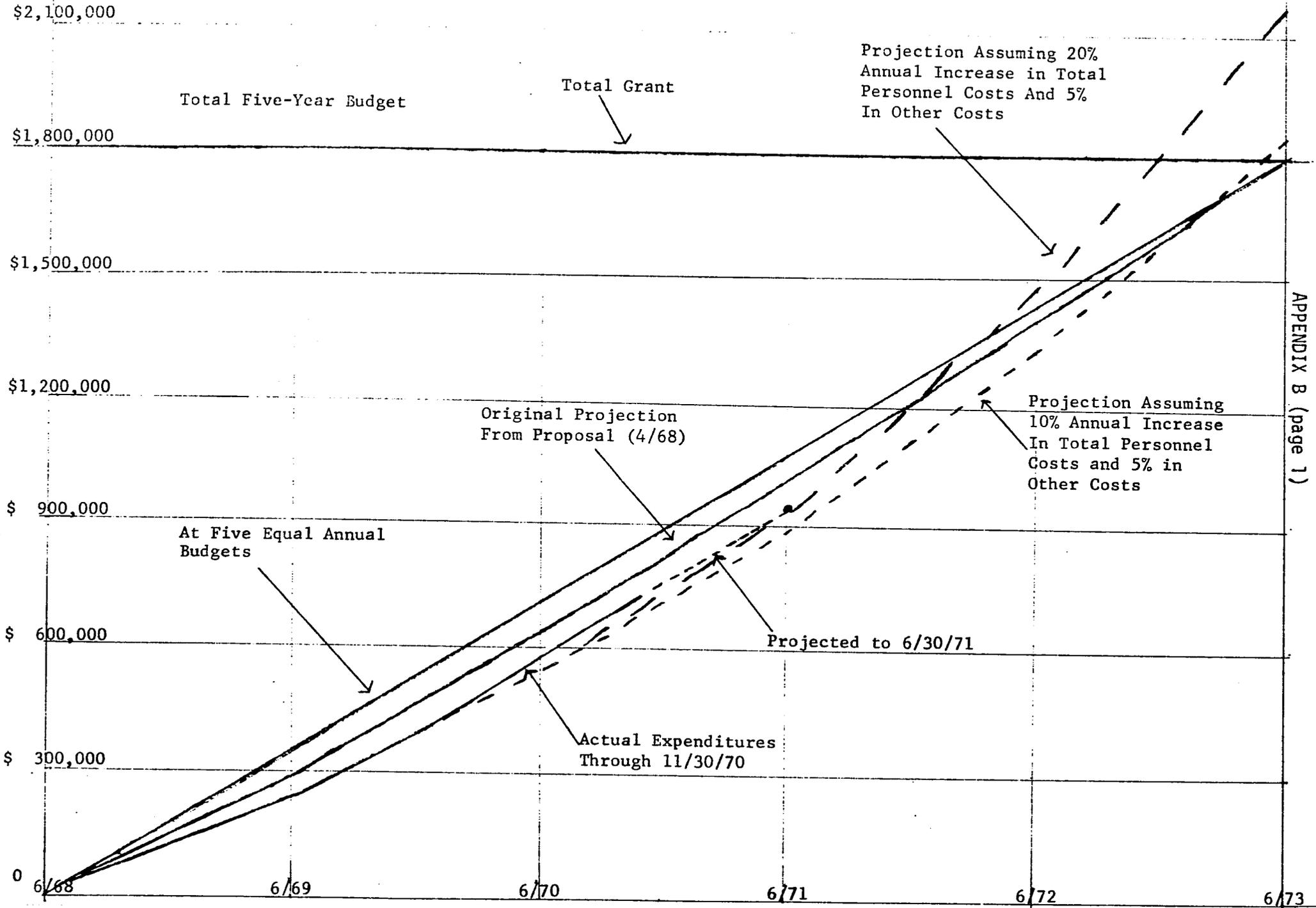
### Associate (International)

James W. Alley, M.D., M.P.H.  
Harbans S. Takulia, M.A.

### Lecturer

Nicholas Cunningham, M.D., D.T.P.H.  
Kurt W. Deuschle, M.D.  
Abraham Horwitz-Barak, M.D., M.P.H.  
George E. Immerwahr, M.S.  
A. Peter Ruderman, Ph.D.

Projected Cumulative 211-d  
Grant Expenditures



APPENDIX B (PAGE 2)

INTERNATIONAL TRAVEL  
FISCAL YEAR 1969-70  
AID/cs<sup>d</sup> 1939

Baker, T.D.	2/13-3/3/70-Tokyo/Hong Kong/Saigon/ Bankok/ Taipei/Tokyo	\$125.65
	Per diems only for travel. To Taipei for conferences with Ministry and Deputy Ministry of Education on new Medical Education Commission and to Bangkok for work on Health Manpower Study.	
Cunningham, N.	4/1-4/26/70-New York/Geneva/Lagos/ New York	\$1,178.65
	To Lagos, Nigeria for consultation on Gbaja Street Project.	
Forman, A.	8/8-11/28/69-Baltimore/Geneva/Turkey/ India/Turkey/Geneva/Baltimore/Santiago/ San Juan, P.R./Baltimore	\$3,249.89*
	Review of Rural Health Research Projects in Turkey and India. To Santiago, Chile to attend International Confederation of Midwives Congress.	
Sorkin, A.	A.7/1-8/6/69-Baltimore/Turkey/India/ Geneva/Baltimore	\$1,770.06*
	To become familiar with Department of International Health overseas pro- jects in Turkey and India.	
	B.6/26-8/16/70-Baltimore/Egypt/India London/Baltimore	\$1,963.01*
	To Cairo to assess the feasibility of a study to determine the economic and social factors accounting for decline in Egyptian birth rate and to India to initiate study of same in Punjab.	
Taylor, C.	A.8/19-9/7/69-Narangwal/Russia/Baltimore	\$878.29*
	Return from overseas assignment with a stop in Moscow to meet Professor Ivan Demidovich, Institute of Social Hygiene and Organization of Public Health about future projects.	
	B.10/11-10/15/69-Geneva/Alexandria/Geneva	\$405.30

APPENDIX B (PAGE 3)

INTERNATIONAL TRAVEL (continued)

Represent Johns Hopkins School of Public Health at the Inter-Regional Meeting of Directors of Schools of Public Health in Alexandria, Egypt.

C.11/12-12/10/69-Baltimore/Delhi/Baltimore \$1,320.74\*

Travel to India for discussions with AID and GOI officials and project coordination Rural Health Research Center.

D.3/16-3/31/70-Baltimore/Delhi/Baltimore \$1,228.68\*

Project coordination in India.

Winkler, W. 1/21-2/22/70-Istanbul/Baltimore/Istanbul \$717.40

Consult with Hopkins staff concerning overseas Functional Analysis Project in Turkey.

Wright, R. 5/28-7/16/69-Baltimore/Stuttgart/Lagos/India/Japan/Korea/Baltimore \$1,549.10\*

To interview candidate in Stuttgart, consult on projects, and study family planning programs.

\*Cost approximate as tickets purchased on GTR's, charges for which not yet reported to us by A.I.D.

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EQUIPMENT PURCHASES  
 FISCAL YEAR 1969-70  
 AID/csd 1939

<u>Date</u>	<u>Item</u>	<u>Manufacturer</u>	<u>Price Each</u>
9/30/69	Electronic Stencil Machine	A.B. Dick	\$895.50
11/30/69	Desk	Steelcase	214.30
11/30/69	Typewriter	IBM	456.20
12/31/69	2 Chairs	Steelcase	166.50
2/28/70	Typewriter	IBM	420.00
2/28/70	Filing cabinet	Steelcase	103.98
2/28/70	Filing cabinet	Steelcase	141.60
2/28/70	Filing cabinet	Steelcase	131.40
2/28/70	2 Filing cabinets	Steelcase	103.08
4/30/70	Typing arm for desk	Shaw Walker	148.75
4/30/70	2 Filing cabinets	Steelcase	113.88
4/30/70	2 Filing cabinets	Steelcase	100.80
4/30/70	4 Filing cabinets	Steelcase	113.10
6/30/70	Typewriter	IBM	420.00
6/30/70	Filing cabinet	Steelcase	136.20

APPENDIX B (PAGE 5)

211-d SUPPORT

Cost Allocation by Area of Activity

This is a relatively simple exercise for Departments other than International Health, since all their support consists of salaries of individuals who are concerned solely with population work. For International Health, which makes comparatively large expenditures in each of the three areas of activity and in all line items within these, precise allocation becomes impractical. After substantial study and review of this problem, we have concluded that the distribution of effort of the faculty supported by 211-d provides the best means of approximating cost allocation of overall expenditures. This distribution, for Department of International Health faculty in FY 69-70, is given in the following table:

	<u>Health</u>	<u>Population and Health</u>	<u>Population</u>	<u>Other Support</u>
Alexander, C.A.	3%	3%		94%
Baker, T.D.	22%	15%		63%
Ferguson, D.C.	8%	4%	29%	59%
Forman, A.M.	25%	50%	25%	
Graham, G.G.	50%	9%		41%
Hall, F.			100%	
Meredith, J.	25%	50%	25%	
Parker, R.L.		57%		43%
Reinke, W.A.		13%		87%
Sangal, S.P.		25%		75%
Scott, R.B.		69%		31%
Shankar, B.S.		20%		80%
Sorkin, A.	6%	13%	6%	75%
Taylor, C.E.	20%	36%	25%	19%
Wright, R.D.	14%	19%		67%

APPENDIX B (PAGE 6)

211-d SUPPORT (continued)

These percentages, when weighted for salary levels, combined, and extrapolated to overall expenditures, yield the following percentage breakdowns:

Department of International Health				
As percent of total	Health	Integration of Health and Population	Population (Dept. Int. Health only)	Population (All other Departments)
Dept. of International Health 211-d Expenditures	28%	38%	34%	
As Percent of all 211-d Expenditures	24%	33%	29%	14%

From the second row, it will be seen that Department of International Health expenditures were 86% of the total and that population work, considering all departments, accounted for 43% of the total.

## APPENDIX C

### CONSULTATIONS

#### 1. Dr. Carl E. Taylor

##### Lectures and Papers Presented:

University of Delaware, Newark	Oct. 6, 1969
WHO, Geneva (Medical Research Priorities & Responsibilities)	Oct. 8, 1969
Assoc. Schools of P.H. in Africa and Asia, Alexandria, UAR	Oct. 13, 14, 1969
Morgan State College	Oct. 24, 1969
Towson College, Baltimore, Md.	Feb. 12, 1970
Association of Schools of Public Health, Washington, D.C.	Apr. 6, 8, 1970
American Society of International Medicine, Philadelphia, Pa.	Apr. 11, 1970
Goucher College, Baltimore, Md.	May 4, 1970
NIAID Workshop, Princeton, N.J.	May 19, 21, 1970
AID Spring Review of Population	

##### Consultation:

AID Manpower Meeting, Washington, D.C.	July 2, 1970
AID Population Units in India and Nepal - on repeated visits	
WHO, Chairman of Scientific group on Health Aspects of Family Planning producing Technical Report	July, 1969
WHO, Chairman of Expert Committee on Integrating Family Planning into Health Services producing Technical Report	Nov., 1970

##### Meeting and Conferences:

Christian Medical Council, New York	Oct. 20, 1969
Leonard Wood Memorial, Washington, D.C.	Oct. 30, 1969
APHA Annual Meeting, Philadelphia, PA. (Chairman of Program Area Com- mittee on International Health and member of Program Area Com- mittee on Population)	Nov. 8, 12, 1969
WHO, Delhi, India	Nov. 12, 1969
SID Conference, Delhi, India	Nov. 15, 1969

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APHA Technical Development Board Meeting, New York	Feb., 6, 1970
Pathfinder Fund Advisory Board Meeting, Boston, Mass.	Feb. 9, 1970
Ad Hoc Panel on Manpower, AID, Washington, D. C.	Feb. 18, 1970
American Leprosy Mission Meeting, New York	Apr. 24, 25, 1970
Leonard Wood Memorial Meeting, Washington, D. C.	May 2, 1970
AMA, Task Force on International Medicine, Washington, D.C.	May 28, 1970
AMA International Medicine Task Force Meeting, Washington, D.C.	July 7, 1970
Pathfinder Executive Board Meeting Boston, Mass.	July 8, 1970
AID Advisory Panel, Washington, D.C.	July 13, 1970
APHA Technical Development Board Meeting, New York	July 13, 14, 1970

2. Dr. Timothy D. Baker

Activities Outside University

Examiner, Board of Preventive Medicine  
 Maryland Public Health Association, member  
 Legislative Committee  
 American Public Health Association, member  
 Governing Council  
 Medical & Chirurgical Faculty Committee on  
 Post-graduate Education  
 Medical & Chirurgical Faculty Committee on Traffic  
 Safety, (Chairman, Traffic Safety subcommittee)  
 Baltimore City Medical Society Medical Care Committee,  
 Chairman  
 Member, Republican State Central Committee  
 Delegate, Baltimore City to the Medical & Chirurgical  
 House of Delegates  
 Co-Chairman, Technical Discussions, Association of  
 Schools of Public Health

Meetings:

American Public Health Association  
 Association of Schools of Public Health  
 Toronto - Discussions on School of Public Health Program  
 Ciba Foundation Symposium - presented paper on  
 "Paramedical Paradoxes - Challenges and Opportuni-  
 ties", June 8, 1970, Istanbul, Turkey

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Maryland Public Health Association  
Participant, Department of Labor Symposium on  
Health Manpower, June 19, 1970  
Presented graduation address to Walter Reed Global  
Medicine class, June 25, 1970

Consultations:

July - August, 1969, Thailand, Projected Manpower  
Needs; consultation continued in February 1970  
Consulted - AID/Health, Vietnam, February, 1970 on  
Health Planning  
Indonesia - July - August, Consulted AID/Population  
Office, India on Development of Health Manpower  
Plans to meet new demands of Government Family  
Planning Program. Work with Ministry of Health  
presented paper at Task Force Conference.  
Thailand - Consultation during initial analysis stages  
of Health Manpower Study.  
Philippines - Consultation with WHO on Health Planning  
Course.  
Consulted with Dr. Landis, AID, on Health Centre Costs

Research:

Development of a series of background papers for  
International Health Technical Discussions of  
Association of Schools of Public Health Meetings  
Preparation of Analysis of Costs and Benefits of  
Water Supply in Taiwan

3. Dr. William Reinke

Extra University Activities

WHO, Manila	July-August 1969
WHO, Geneva	October, 1969
WHO, Geneva	April, 1970

Member, Maryland Regional Medical Program  
Statistics & Epidemiology Advisory Committee  
Continuing Education Advisory Committee  
Associate Editor of Operations Research Journal  
Editorial Consultant: Demography

4. Dr. Thomas L. Hall

Consultation:

AID, Population, Chile, August 1969

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5. Miss Alice M. Forman, R.N.

Consultations:

Dr. Eliza V. Sebastian, Assistant Commissioner MCH,  
Directorate General of Health Services, India  
Mrs. Karthiyani, R.N., Assistant Director for Train-  
ing, Ministry of Health & Family Planning, India  
Miss A. Cherian, R.N., Nursing Advisor to the Govern-  
ment of India, Directorate General of Health Ser-  
vices, New Delhi  
Dr. Chaiyan K. Sanyakorn, Head Department of Biostatistics  
Faculty of Public Health, Mahidol University,  
Thailand  
Christabel Kaitell, R.N., Ibadan University College of  
Nursing, Nigeria  
Admiral Bristol Hospital School of Nursing, Istanbul,  
Turkey, November 1969  
Florence Nightingale Higher Nursing School, Istanbul,  
and Hacettepe University Higher Nursing School  
Ankara, Turkey, October 1969

6. Dr. Cecile DeSweemer

Consultations

Rural Programs of Frances Newton Hospital, Ferozepur  
and Ambur Hospital, Madras

7. Dr. Alfred Buck

Consultations

The American Journal of Tropical Medicine, as  
consultant editor  
The Parasitology Unit of the World Health Organization,  
Geneva  
The Armed Forces Board of Epidemiology (Parasitology)

Staff members gave guest lectures to medical officers  
of the Walter Reed Institute of Medical Research on  
"Medical Care and Surveys in Underdeveloped Countries";  
to the medical faculty and professionals of the Kabul

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University and Institute of Public Health on "Health and Disease in Rural Afghanistan"; and in the sessions on sero-epidemiology and filariasis of the Second International Congress of Parasitology on "Microfilaruria in Onchocerciasis", "Geographic Variations of Test Capacities", and "The Use of Immunodiagnostic Screening Tests in Comprehensive Epidemiologic Studies". A round table conference on new aspects of onchocerciasis was held with the staff of the Parasitology Unit of the World Health Organization, Geneva, in August, 1970 at which Dr. Buck presented the results of the team's investigation of onchocercal microfilaruria.

8. Dr. Robert D. Wright

Consultations:

Consultation to CENTO countries, Turkey, Iran and Pakistan on integration of family planning instruction into Community Medicine teaching, Jan-Feb., 1970  
Consultation to Semashko Institute, Moscow, on functional analysis of medical auxiliary output.  
Consultation to Papago Indian Study, Sells, Arizona  
Consultation visit to Loma Linda School of Public Health and Medical School for discussions with Nurse consultant Ruth White on future relations with Programs in Nigeria.

ROCHE MEDICAL  
 **Image &  
 Commentary**

Published by International Medical Press, Inc., 110 E. 59th St.,  
 New York, N.Y. 10022 for Roche Laboratories, Division of  
 Hoffmann-La Roche, Inc., Nutley, N.J. 07110

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Printed in U.S.A.

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Image Commentary

# International Health: Getting More Than We Give

Carl E. Taylor, M.D.

*Professor and chairman,  
 Department of International Health,  
 Johns Hopkins School of  
 Hygiene and Public Health*

**T**HE UNITED STATES is getting more out of international health efforts than we are now investing in them. At a time when foreign aid programs have been more drastically cut than most other items in the Government budget, we are draining the medical manpower trained at the expense of overseas nations—particularly those developing nations that most sorely need their physicians. Even our contributions to medical missionary work have declined; and this reduction, coming in a period of escalating medical costs, is forcing mission hospitals throughout the world to reduce their activities or close their doors. If, temporarily, we are giving increased medical assistance to Vietnam, it is mainly from a sense of guilt and political motivation.

Unfortunately, there is no political constituency in America that supports foreign aid. We do have vague altruistic feelings about helping others because—in the words of President Kennedy—"it is right"; but this compunction tends to be readily submerged by more immediate considerations closer to home.

Consequently, to the politician who covets a reputation for looking after his own constituency, nothing in the budget looks more susceptible to cutting than foreign aid. He may justify his action on the ground that we must concentrate on our own long-ignored problems. But this is a naïve assumption, because no Government expenditure automatically increases when another item on the budget is cut. Every

budget appropriation must stand or fall on its own justification.

There are many reasons to justify not less but more international medical aid. The most cogent reason is that involvement in international health helps us in our own efforts to improve medical care in the United States. Our efforts at home and abroad are interrelated, since they deal with essentially the same issues of service to the poor. If the American medical profession understood just how inextricably our home efforts are intertwined with those in other lands, our physicians would become a potent constituency to support and publicize international medical aid.

Perhaps the most important benefit we derive from international work comes from the long-lasting effect of overseas service on American physicians. Increasing numbers of our best physicians volunteer for short-term missions abroad and then return with changed attitudes and values. From exposure to the dramatic needs of developing countries they acquire an understanding of the ecology of health that enables them to grasp and seek solutions to the social conditions that underlie our most oppressive health problems at home.

Medical agencies such as MEDICO and Hope provide an organized framework for these short-term missions abroad. Independent efforts of individuals to get involved in overseas service on their own make relatively small contributions and often lead to frustration in both donor and

host. A systematic program, on the other hand, provides the continuity within which the individual physician can make his limited contribution to a large project that is both vital and carefully planned. Furthermore, the fact that these projects demand some sacrifice on the part of the physician, or a financial contribution from him, ensures emphasis on motivation and dedication to the exclusion of persons looking only for adventure.

**M**EDICAL SCHOOLS and universities have also established overseas affiliations that permit faculty members to teach in remote foreign centers without losing their status on the academic ladder at home. Through whatever agency American physicians serve, the general consensus is that the benefits to the people aided by such programs may often be less than the value to the practitioners, whose knowledge is enhanced and whose vision is enlarged.

Even more exciting is the growing trend among young physicians to train for careers in what I call ecumedicine—international medicine. Ecumedicine provides a channel of service for some of the most idealistic among the new generation of medical graduates. For the past five years our department at Johns Hopkins has trained many of these men in an international health residency program. After two or more years in developing countries, most of these physicians are now being drawn into the pressing health needs of our own country—an ironic phenomenon, considering that our original objectives were quite different. They now work in the inner-city programs of Harlem, Washington, and Watts, in Appalachia, and on Indian reservations. The problems, they tell us, are the same as those in the developing countries.

A second and somewhat less tangible benefit of international cooperation is the fact that the lessons learned overseas can be directly applied to health services in the U.S. It is sometimes argued that 90 per cent of the contributions made to the world by medical research come from America. In the area of basic biomedical research this may be true. But in such areas as improved organization of comprehensive health services, reducing the cost of medical care, and family planning and population control more has been accomplished abroad. In most developing countries, for example, a geographic network of health centers organized in regional programs has long formed the basis of health planning.

Also, because of their limited resources, these nations have for years been forced to consider carefully the problems of health costs and priorities. Impeding the realization of their plans, however, is the ambivalence of their own medical communities, which too often attempt to duplicate the

services they have seen in the more industrialized Western world. If, in this country, we developed more innovative approaches toward improving health center services for the poor, our efforts would make such advances more respectable in the eyes of overseas physicians.

The organization of community health centers, as applied to the current crisis in American health care, needs considerable revision. So far the tendency has been to experiment only with the development of health center services for the poor. Since the funds for such services come mostly from tax sources, the threat to traditional private practice is not very great. Public pressure for some sort of national health service, however, makes it evident that unless the medical profession takes the leadership in developing an equal system for the medical care of all classes of citizens, Government solutions will be found that may be disadvantageous to physicians.

Overseas manpower studies have demonstrated some basic principles of health care organization that are relevant to the American medical situation. There is, for instance, a pressing need to redefine the relative roles of professionals and auxiliaries. Because of spiraling costs, it is essential that we assign routine tasks in both curative and preventive medicine to paramedical workers. Such an arrangement would permit professionals to spend their time on those tasks that require greater judgment and an understanding of causation.

Again, in relation to the population problem in America, much of what we know about family planning we learned from overseas, where governments faced the need for balancing birth rates and death rates long before we did. Only now are we Americans recognizing the relationship between our own problems of crowding and pollution and, as a corollary, the need to integrate family planning as an important part in maternal and child care services. Certainly our present discriminatory pattern, whereby knowledge and facilities for family planning are not available to the poor, aggravates the health problems of both mothers and children.

**T**HE PRESSURE for population control in this country is generated less by the medical profession than by those citizens concerned with pollution and conservation. Presumably, before long, we will arrive at the point where the spontaneous free choice of family planning will be accessible to all families. Until that time, however, it seems reasonable to direct to our own people any immediate efforts at population control through legal or economic sanctions before we press action on other nations.

One major contribution from overseas must be mentioned with a sense of shame.

An increasing proportion of our physicians and other health personnel is drawn from the developing countries. In a health manpower study we made at Johns Hopkins five years ago, we found that Turkey had given us more in money (spent by its Government to train physicians who wound up in the United States) than we had given the Turks for health-related services. Although an international exchange of physicians is desirable, it should be a balanced give and take, not a brain drain.

There are two basic reasons for the view that the current large-scale immigration of foreign medical graduates to the United States is undesirable. The most obvious one is that for an affluent nation like ours to depend on manpower drained from countries in which highly skilled professionals are so much more urgently needed is morally wrong. The second is that different standards of education and practical experience in these developing countries produce graduates who are inadequately prepared to practice in the United States.

**T**HE SOLUTION to both these problems is obvious. We should produce sufficient numbers of our own physicians and scientists to fill our needs. Unfortunately, all the current trends point in the opposite direction. The records demonstrate, for example, that last year the total number of graduates of foreign medical schools to join the medical manpower pool in this country exceeded the number of newly licensed physicians who had graduated from medical schools in the United States. Because our hospitals cannot find enough American-trained graduates for routine services, approximately one-third of our internships and residencies are filled by foreign-trained graduates. If these physicians subsequently returned to their own lands with greater knowledge and experience, that would be commendable, but increasing numbers of them now seek to remain here. If we do not wish to set up barriers to the immigration of these professionals, we should at least abolish our present programs of offering special inducements to lure them to our shores.

Many of the benefits we now receive from abroad are the reward of bread we once cast upon the waters. We have contributed a great deal to the development of educational and medical institutions overseas. Even much of overseas research in health center care and population from which we now receive so much benefit was made possible in developing countries by the pioneering work of American scientists who were sponsored by U.S. missions, foundations, and the Government. Why, if these past achievements are admirable, we now face a whole new era of greater challenge in ecumedicine. We should give more than we get.