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

NOVEMBER, 1971

TABLE OF CONTENTS

<u>Section</u>	<u>Subject</u>	<u>page</u>
I.	SUMMARY STATEMENT	1
II.	RELISTING OF OBJECTIVES	6
	A. Objectives	6
	B. Scope of Specific Objectives	6
III.	DEVELOPING OF TEACHING COMPETENCE	8
	A. Collaboration Between Departments	8
	B. Educational Philosophy	8
	C. Basic Courses	9
	D. Educational Innovations	11
	E. Evaluation of Teaching Efforts	12
	F. Health Planners Program	12
	G. Doctoral Candidates and Residents	14
	H. Student Involvement in Program Planning	15
	I. M.P.H. Curriculum Committee	16
	J. Education Research for Auxiliary Training Programs	17
	K. New Horizons in Nurse-Midwifery	18
IV.	INCREASE IN RESEARCH COMPETENCE	20
	A. Basic Orientation of Research Planning	20
	B. Functional Analysis of Local Health Needs and Services	22
	C. Health and Economic Development	24
	D. Narangwal Population Study	25
	E. Nutrition and Infections Study in Narangwal	27
	F. Epidemiological Studies of Leprosy in Calcutta	28
	G. Indigenous Practitioners and Family Planning	29
	H. Economic Studies in India	29
	I. Nutrition and Health Care in Peru	29
	J. Nigeria	31
	K. Chile	32
	L. Taiwan and Thailand	33
	M. Iran	33
	N. Chad and Afghanistan - Geographical Epidemiology	33
	O. Data Bank	34

<u>Section</u>	<u>Subject</u>	<u>page</u>
V.	CONSULTATIONS AND SERVICE ACTIVITIES	36
VI.	GENERAL UNIVERSITY ACTIVITIES	44
	A. Pattern of Allocation of 211-d Funds	44
	B. Population Center	44
	C. Department of Population Dynamics	44
	D. Department of Gynecology and Obstetrics	46
	E. Department of Behavioral Sciences	46
	F. Department of Biostatistics	47
	G. International Journal of Health Services	48
	H. Johns Hopkins Center for Medical Research & Training	49
VII.	OPERATIONAL WORK PLAN	51
	A. Teaching Program	51
	B. Research Program	52
VIII.	EXPENDITURE OF GRANT FUNDS	55
	A. Budget and Expenditures	55
	B. Percentage Allocation of 211-d Expenditures	56
	C. Projected Cumulative 211-d Grant Expenditures	57
	D. Cost Allocation by Area of Activity	58
	E. Fellowships	61
	F. International Travel	62
	G. Equipment Purchases	64
IX.	PUBLICATIONS	65
APPENDIX - A	Student List	A 1
	B - Department of International Health	B 1
	1. Staff	B 1
	2. Departmental Students (1970-71)	B 3
	3. Visiting Lecturers	B 5
	4. Departmental Seminar Programs	B 8
	C - Department of Population Dynamics Annual Report	C 1
	D - "Relevance Today and Tomorrow - A Forum" <u>California Medicine</u> magazine article	D 1
	E - IMAGE Magazine - article on students "From Katmandu to East Harlem"	E 1

I. SUMMARY STATEMENT

Each annual report on the contribution of 211-d support to progressive development of institutional competence at Johns Hopkins has had a central theme. In the first report our theme was that improved quality of work is the real determinant of increasing competence. In the second report the theme was stabilization after the rapid expansion permitted by the 211-d support. In this, our third annual report, the major theme is to report increased efficiency in our efforts to meet our varied responsibilities.

As early exponents of health planning it is only reasonable that we apply the principles of planning to our own activities as we try to increase our efficiency. We have become increasingly conscious of the need for maximizing results with minimum input because our long term investments in teaching and research relationships around the world have led to increasing opportunities for in-depth involvement. To meet the challenge of these opportunities without increasing our resources of people, time and facilities we have to concentrate on such basic principles of planning as clear identification of priorities, selecting those emphases that we can do most about, making maximum use of local talent and resources, and making sure that our efforts in one activity can be applied to the maximum number of situations. We are particularly conscious of the need for focussing effort on getting jobs completed, rather than getting trapped by the fascination of just keeping our organization and administration running, whether at our Baltimore base or in our overseas activities.

As before, most of this report deals with activities of the Department of International Health since most of the 211-d financial support has been allocated by the University to this department. In addition there have been major developments in other parts of the University. The Department of Population Dynamics has this year acquired a new chairman, Dr. W. Henry Mosley. We are particularly happy with the increasing collaboration between the two departments, especially as manifested in the development of a Population Center. The main responsibilities thus far assumed by the Population Center has been to run the U.O.P.I. Program of overseas fellowships and the University Services Agreement for Population research both with funding from TA/POP. Because of the need for organizing the Population Center we have been careful to not rush into rapid expansion under these new programs. Activities will be carefully developed for the most effective long term input.

In our teaching program we are particularly conscious of and gratified by the fact that our previous investment in good quality teaching is paying off in several specific ways. Most noticeable is the selection process which generates a gratifying flow of candidates from the informal communication network of young men and women interested in international service. We are tremendously impressed with the idealism and competence of the young candidates seeking international careers. We continue to have applicants from the top of their medical school or other academic programs who want to channel their idealism into practical overseas

experience and who show an encouraging dedication to serving the poor and needy.

A remarkable feature is that impressive numbers of these highly motivated candidates have spontaneously come to recognize the fundamental principle that there is a natural back-and-forth flow of mutual learning and synergistic strengthening between programs designed to help the poor overseas and the poor in the United States. Particularly in our residency and doctoral programs we find that graduates who have served for two or more years overseas fit naturally into openings in ghetto neighborhood health centers, Indian reservations and the rural south, with the expectation that after a few years they will again seek service overseas. A recent semipopularized article on this theme used case histories of six of our residents.(Appendix E). We are also impressed that many of the 70-80% of the general MPH classes who elect to take the basic course in International Health say that even though they have no intention of working overseas they have come to recognize that many of the principles and lessons that have been learned in developing countries are fundamental to innovative improvements in health services for the United States. (Appendix D). As we receive an increasing flow of application letters quoting a friend's comments we realize that the best recruitment of high quality candidates comes from a backlog of enthusiastic graduates.

Another means of increasing the efficiency of our teaching program directly is better handling of teaching time. We want to guard against the dangers of self-satisfaction in continuing without change courses that seem to be going well. While satisfied with our emphasis on stabilization last year, we want to make sure that we do not stop innovating. Such innovation must be directed toward being responsive to student needs. Perhaps the best insurance against our falling into teaching ruts is the fact that a very large proportion of our teaching is in seminars. No two seminars ever come out the same because of differences in classes and discussion inexorably follows the interests of the students.

Our greatest expansion of effective teaching seems to be in personal tutorial relationships with graduate students. Although at first glance this might not seem to be the most efficient way to use minimum resources, we have come to feel that an hour of intensive work on a current problem with a selected individual may have more ultimate payoff than an equal time spent in a didactic lecture to a large class. If our purpose is to prepare leaders and teachers, then it is important that we work individually not so much to share knowledge as to transmit the skills that are the hallmarks of competence and most importantly the sensitivities to nuances in international understanding and negotiations, the synthesis of underlying relationships gained from experience and the often intangible qualities of basic attitudes and ethical orientation that provide the ingredients of motivation.

In summarizing developments as they relate to research, again we are impressed by the many ways in which we reap benefits from earlier investments. Our greatest need in efficient planning is to make sure that the flow of research from one project to another provides adequate opportunity

for the intermediate stages of analysis and report writing. Some specific examples of such flow will be briefly summarized here but the projects are described in more detail in the body of this report.

Our largest overseas research base continues to be at the Rural Health Research Center in Narangwal in the Indian Punjab, with over 125 Indian staff working with 5 professionals from Hopkins. We are making encouraging progress in large scale field studies of population and nutrition. With a continuing research grant from AID/NESA, we are demonstrating that an effective service integrating family planning and maternal and child care can be provided to village homes by auxiliaries. Our experimental design tests the increments in family planning acceptance that can be achieved by integrating family planning services with different packages of health services. The Government of India is already committed to such integration but is not clear how it can be achieved. Interest in the Narangwal pattern of integrated services was indicated by official participation in a three day conference in November 1970. The top three Health and Family Planning officials from each State were invited. With the exception of only three States we were gratified that strong delegations came even though they had to live in tents under rather rugged village conditions. A book has been published in India as a conference report and is being sent free to a list of almost 1,000 persons supplied by the Central Health and Family Planning Ministry. The outstanding effect of the conference on our own plans has been that we are under increasing pressure to develop a satellite project in "the poorest district of India." We have committed ourselves to such a project, to put together a simplified demonstration from what we have learned in research at Narangwal in a community development block, probably in Bihar. A consortium arrangement between RHRC, the all India Institute of Medical Sciences and Jawaharlal Nehru University is being discussed with each undertaking such a field project in a separate state.

Another evolutionary development has been the establishment of an educational unit at Narangwal. The purpose is to adapt what we have learned in field activities to an educational framework that can be applied generally in India. We are systematizing routines of field operations to define new patterns for educating auxiliary nurse midwives, supervisory public health nurses, and health center doctors in new patterns of integrated care.

The NESA Bureau arranged for a five man site visit committee, organized by the Research Triangle Institute to evaluate our Population Study at the end of July, 1971. A comprehensive report has been published by RTI with a strong endorsement for continuation of the project and some valuable recommendations for improving research.

A similar sequence of encouraging developments has occurred in connection with the Nutrition Project at Narangwal. The basic experimental design tests the relative importance of nutritional supplements and infectious disease control in preventing and treating the weaning syndrome. Not only is the synergism of malnutrition and infections that occurs during the weaning period one of the greatest causes of mortality and morbidity

in developing countries, but also there is increasing evidence that it leads to permanent stunting in both physical and mental development. Our project has shown that services combining infection control with nutritional supplements produce measurable differences in early growth curves, findings which are important because other studies in total populations have not produced such a clear-cut improvement. We are now preparing to phase into more specific ramifications such as the effect of malnutrition on learning performance and neuro-integrative behavior, on immune response and on intestinal malabsorption. We also hope to study the effects of prenatal maternal nutrition on the child.

Another good example of a sequential flow of continuing research is the project on functional analysis of local health and family planning services. Grants from AID's Research Advisory Committee provided first for a two-year feasibility study in teaching health centers in North India, South India and Turkey. After a year of analysis this was followed by a two-year definitive study in ordinary government health centers in the Punjab, Mysore and three provinces in Eastern Anatolia. A general report of the successful implementation of the new functional analysis methodology has been submitted to AID and is now being prepared for publications as a book. This has now led to a field trial of a streamlined and shortened methodology in the Punjab in collaboration with the State Ministry of Health and may well become the basis for a new approach to health planning. We hope then to spread this methodology to other states of India. Even more important is a proposal that WHO set up an international comparative study of the functional analysis methodology in several developing countries with AID support and also, with separate financing, parallel studies in countries such as Japan, Soviet Russia, Poland, Yugoslavia, Hungary and the Bureau of Indian Health Services and various ghetto neighborhood health centers in the United States. As an example of our trying to achieve greater efficiency, we view our role in these activities to be to coordinate the research. Local teams in the various countries will come to Hopkins for training in the new methodology and for periodic conferences to compare experiences.

A final illustration of the way in which research experience flows from one project to the next is an exploratory project to investigate the feasibility of field research in the interactions of health, economic development and population growth. When AID originally provided basic funding to start the Department of International Health at Hopkins ten years ago, one of the first requests was for research on the relationship between health and economic development. We had to admit that we were not prepared for this type research and the methods were not available. In the past year, however, we entered a competitive bid to carry out the present exploratory study because we feel that our varied research activities and progressive development of competence now provide a basis for such an investigation.

A final summary comment needs to be made about consultations and service contributions during the past year. We have to select from among many worthwhile and challenging opportunities. Of those tasks that we do undertake only a few illustrative examples will be mentioned here with a detailed

listing in the body of this report. Dr. Baker spent two months in Brazil in the summer of 1971 as a special consultant for AID. Dr. Reinke served in an advisory capacity for WHO in a number of major activities in health planning. Similarly, Dr. Taylor consulted both for AID and WHO in activities such as being Chairman of the WHO Expert Committee that prepared the November 1970 Technical Report Bulletin No.(*) on Integration of Family Planning into Health Services, and was a member of the task force that set up the National Council for International Health and was then appointed as a member of that Council.

(*)not yet published

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 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 master's 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. Collaboration Between Departments

A marked increase in courses at the School of Hygiene and Public Health has led to excessive crowding of the curriculum. This wealth of courses makes it harder for students to choose what will best fit their particular needs. In the past the MPH Course was fairly standardized. A progressive move to more elective time has been accompanied by the multiplication of courses to meet the increasingly diverse range of interests of both faculty and students.

One specific measure to counteract the proliferation of courses has been a deliberate effort to develop joint courses and to have faculty members cross departmental lines in teaching. Since the first year of our AID support for family planning work we have had a joint course with the Department of Population Dynamics on "Population Growth: Interrelations, Problems and Policies." Dr. L. P. Chow continues to take primary responsibility for this course but members of both departments participate. There has been greater use of the case method of teaching to make the course increasingly practical and relevant to everyday conditions. This year a new joint course with Population Dynamics has been organized relating to the economics of health and population with primary responsibility being taken by Dr. Alan Sorkin of International Health with the collaboration of Dr. Ismail Sirageldin of Population Dynamics. Other joint courses which continue are Planned Change with the Department of Behavioral Sciences; Quantitative Decision Procedures with the Department of Biostatistics; Comprehensive Health Planning with the Departments of Public Health Administration and Medical Care and Hospitals; Clinical, Experimental and Epidemiological Aspects of Selected Infectious Diseases with the Department of Epidemiology; Clinical Aspects of Diseases of Global Significance with the Department of Pathobiology; and Methods in Health Services Planning with the Department of Medical Care and Hospitals. Interdepartmental collaboration also occurs in arrangements for doctoral students. This will be even more true as the Population Center develops. All of this collaborative teaching is obviously a strong move in the direction of greater efficiency.

B. Educational Philosophy

Teaching for international service is much more than a didactic exercise. Through the years we have been greatly impressed with the need for teaching that will impart attitudes, values and ethical orientation. We are convinced that success overseas depends more on attitudes and motivation, even though they are hard to modify or measure, than on the more straightforward educational objectives of knowledge and skills. For postgraduate education to be most meaningful, there must be opportunities for personal sharing of experiences in working situations. It is out of such in-depth relationships and discussions that arise from natural working experiences that the most important forms of expertise can be transmitted. We take this responsibility most seriously and feel that

faculty members must make every effort to be available for frank exchanges. The opening lecture of the basic course in International Health deals with the ethics of International Health. Especially in discussions of research projects and the organization of services we try to maintain an open and enquiring perspective on approaches to attitude change as part of the development process. We are increasingly concerned with the social dimensions of development and the need to measure in an objective and realistic way "quality of life" variables which go far beyond economics.

C. Basic Courses

Because our curriculum is already full, we have been reluctant to add new courses. This does not mean, though, that our academic program is fixed. The content of each course changes continually. We find in our seminars it is of particular advantage to capitalize on the background of members of the class. Since many of the students have had extensive previous overseas experience, learning can be built best on deliberate sharing of concerns and successes leading to a search for realistic solutions. Even in introductory courses a constant shifting of emphasis occurs. Faculty members are expected to prepare mimeographed statements of what they would normally present as lectures. These are supplemented by selected readings. Then seminars can start where most teaching leaves off with detailed discussion of the questions raised. In more advanced courses this practice of in-depth seminar discussion advances the consideration of issues even further. For instance, in International Health-2, "Seminar on Projects and Problems," each of a selected small group of MPH students has his own topic of a research or action project that he expects to carry out. He has two seminar periods to present his project for in-depth criticism by the group, as well as special periods for individual discussion with faculty members on a tutorial basis. In the seminars on Teaching Community Medicine (IH-9), the students have to organize teaching sessions to present particular subjects to other members of the class. They are required to work their way through situations in which they learn to define behavioral objectives in teaching. The increasing use of video tapes increases the opportunity for self-learning.

In our concern to improve the efficiency of teaching we are aware that we must not lose the quality which has been our primary objective. High quality teaching is also the most efficient teaching. Periods of intense and concentrated personal exchange between faculty and students on practical issues can be far more efficient than many hours of lecturing to large classes. This type of personalized teaching is important even for our masters level larger groups. It is perhaps to be expected that the more we undertake this kind of responsibility, the more demanding the students become to have even greater access to faculty time. In the fine art of balancing priorities, maintaining accessibility for students requires continuing struggle.

The list of courses and the number of students enrolled for the 1970-71 academic year is given below. In this list as in the rest of the report we have identified those individuals who receive any support from 211-d funds by underlining their names.

Courses offered, number of students enrolled and instructors participating:
(faculty receiving partial support from 211-d underlined)

International Health 1: Introduction to International Health.

3 units - First Quarter - 59 students

Instructors: C. A. Alexander, Timothy D. Baker, John Bowers, William Boynton, Dennis Carlson, Nicholas Cunningham, George Graham, Abraham Horwitz, Lee Howard, Sol Levine, Vicente Navarro, Robert Parker, Reimert Ravenholt, Norman Scotch, Alan Sorkin, Ernest Stebbins, Carl E. Taylor, Paul White, Robert Wright.

International Health 2: Seminar for Program Planning and Project Development in International Health.

3 units - Third Quarter (Admission by permission only) 8 students

Instructors: Timothy D. Baker, Thomas L. Hall, Robert Parker, Carl E. Taylor.

International Health 3: Quantitative Decision Procedures.

(given jointly with Department of Biostatistics)

3 units - Third Quarter - 23 students

Instructor: William A. Reinke

International Health 4: Planned Change

(given jointly with Department of Behavioral Sciences)

2 units - Fourth Quarter - 45 students

Instructors: Charles Flagle, Sol Levine, Wallace Mandell, William Sykes, Paul White.

International Health 5: Comprehensive Health Planning

(given jointly with Public Health Administration)

10 units - Fourth Quarter (5 days a week) 50 students

Instructors: C.A. Alexander, Timothy Baker, Philip Bonnet, Charles Flagle, Thomas Hall, Cornelius Kruse, Colin McCord, Wallace Mandell, Vicente Navarro, Jeanne Newman, Robert Parker, William Reinke, Peter Ruderman, Ernest Stebbins, Carl Taylor, David Tejada, Albert Waterston, Abel Wolman, Robert Wright.

International Health 6: Techniques and Interpretation of Epidemiologic Field Studies of Infectious Diseases.

4 units - Fourth Quarter - 22 students

Instructors: Robert Anderson, Alfred Buck, Lydia Edwards, Harvey Fischman, Irving Kagan, Kaz Kawata, Maurice Langham, Thomas Sasaki.

International Health 7: Population Growth: Interrelations, Problems and Policies.

(given jointly with Department of Population Dynamics)

4 units - Fourth Quarter - 37 students

Instructors: L.P. Chow, Francoise Hall, Paul Harper, Rowland Rider, Carl Taylor, Robert Wright.

International Health 8: Area and Language Study
(not given this year)

International Health 9: Teaching of Community Medicine in Medical Schools.
2 units - Third Quarter - 60 students
Instructors: Edward Berdit, Evelyn Goldberg, Edward Grzegorzewski,
Carl Taylor, John Williamson, Robert Wright.

International Health 10: Economics of Health
2 units - Third Quarter - 51 students
Instructors: C.A. Alexander, Martin Gorten, Alan Sorkin.

International Health 20: Special Studies (Individual Student Projects)
(see Special Student Report in Appendix)

D. Educational Innovations

(R.D. Wright, J. Williamson, C.E. Taylor, C. McCord, A. Forman)

The course for Teachers of Community Medicine (IH-9) has gone through a particularly dynamic period of evolution with the introduction of a new framework for student participation in the program. We share the belief that awareness of the need for health promotion and health maintenance will enter the mid-brain of the medical student not through precept but through performance. The related conclusion is that the teaching of community medicine will remain impotent until social pressure forces a change in the medical practice model. This dissatisfaction with present systems of health care must perforce color all effective teaching of community medicine. It raises the fundamental question of whether the teacher of community medicine should be more concerned with changing the teaching model or changing the social model. Thus, teaching the teachers of community medicine becomes not a catalogue of current concepts but a challenge to consider first the functional objectives of both teaching and social goals, and then methods for reaching those goals.

In a short course of three credits on teaching community medicine we can hope for little more than to unsettle minds and, occasionally, to inflame a heart. One example of this process is the experience of a brilliant young medical missionary who, after a year of work and cogitation in Korea, wrote back that he had now reached the conclusion that community health "is more than the combination of curative medicine, preventive medicine, and public health. I think its essence will finally evolve as the right of the community to consciously chart and control its own health environment - ranging from ecological to heart transplants. This presupposes a community able and willing to assume this role." It is this kind of thinking and feeling that our course tries to generate through its two-pronged approach of educational science and community medicine concepts.

The final form of the course in the spring of 1971 was shaped by the needs and wishes of the students within a general framework provided

by the faculty. Student working groups took responsibility for planning teaching sessions in which they were responsible for getting across to the rest of the class the basic concepts of educational science and community medicine. In this day of student activism it is both pleasure and pain to note the initiative with which students grasp the opportunity to make an input into structuring their whole learning experience. This results in a dynamism quite alien to the traditional professor-gives-lecture, student-takes-notes approach.

The students made enthusiastic and valuable use of our video-tape and aural-tape recorders both for critique of their own work and to record special events, such as visiting experts and their field trip to Mt. Sinai Medical School's Department of Community Medicine, New York City. The latter experience gave opportunity for frank evaluations by medical students of what a community medicine clerkship does and does not mean to someone who has no intention of going into community medicine practice.

To further strengthen our ability to relate emphatically to the needs of the students from developing countries we have sent a portable video-tape recorder to our Narangwal project in India to get realistic records of needs and programs for use in course work in Baltimore. This equipment will also be used for experimental efforts to increase the efficiency of teaching auxiliaries in the massive expansion needed by the Indian Family Planning Program.

E. Evaluation of Teaching Efforts

It is almost impossible to evaluate in quantitative terms the qualities of teaching that we consider most important, especially our personalized seminar approach and concerns with attitude change. We need to learn how effective our teaching is and where it can be improved. The usual course examinations give evidence only in relationship to the particular objectives of a course. Any increase in efficiency can be measured only with better evaluation methods based on clearer definition of objectives. Now we tend to rely on intuition and experience.

One evaluation mechanism that we are trying to develop as a result of suggestions made by AID in the last meeting to evaluate our 1969-70 211-d report is to organize a more intensive follow-up of our students. Thus far we are able only to record in a rough way the geographical location and present responsibility of those who have maintained a spontaneous feedback with the School. During the coming year we expect to set up a more systematic means of keeping in touch and getting evaluation information. The lists in Appendix A give preliminary follow-up information on various classes since our 211-d support started.

F. Health Planners Program

(W.A. Reinke, T.D. Baker, C.E. Taylor, T. Hall, J. Newman, F. Nass, R. Parker, A. Sorkin, C.A. Alexander, V. Navarro, C. McCord, C. DeSweemer, A. Forman)

One of our most productive teaching activities continues to be the special program in health planning. This was the first course in Health Planning started outside of communist countries. It now has a world-wide reputation. Members of our department, and especially Dr. Reinke, are being called upon increasingly to help WHO set up regional courses in Health Planning in various parts of the world. Dr. Reinke and Dr. Abel Wolmar helped organize the WHO Regional Courses in Manila and Teheran over the last several years. Dr. Thomas Hall and Dr. Vicente Navarro also helped with the PAHO Health Planning Course in Santiago, Chile. Dr. Taylor taught in a WHO Course in Jamaica and Dr. Baker worked with the WHO Course in Manila. In addition, at Hopkins the Program for International Health Planners formed the core for a parallel development of one of the first Health Planners Courses for U.S. planners.

The program was designed primarily for Senior Health Planners who are senior ministry officials responsible for health planning or staff members of international agencies or institutions. Last year there were 18 in the group. In addition, selected members of the MPH class can elect this concentration. The resulting mix between experienced administrators and younger students fresh from quantitative courses provides a particularly desirable mix for seminar work.

Our most concentrated teaching activity is the 10 unit course in April and May each year in Comprehensive Health Planning. The basic concept is that long-range planning is essential for the development of comprehensive health and family planning services. Emphasis is placed on an integrated, multidisciplinary approach to health planning. Major consideration is given to the scientific base for planning including demography, economics, epidemiology, the measurement of health needs and socio-political demands and constraints. Special attention is given to data collection, analysis and interpretation in determining and projecting needs and demands for manpower and facilities. These methods include survey procedures and the techniques of operations research and systems analysis.

A major part of the course requires students to go through the exercise of actually developing a health or family planning model for a specified population such as a country, state or metropolitan area. Candidates work in small groups and have available extensive data banks so they can follow through all of the steps of the planning process as a formal academic experience. The program is designed primarily for physicians and for other health professionals and social scientists.

A new teaching effort was started in February and March last year when Dr. Reinke organized a third quarter concentration on Quantitative Methods in Health Planning for a smaller group of senior planners. The course content includes the following emphases:

Economics of Health: Basic definitions in economics; special economic features associated with health; factors affecting both the supply of and demand for health services; pitfalls in the measurements of costs and benefits; and the evaluation of alternatives are stressed.

Quantitative Decision Procedures: A framework is developed for the systematic appraisal of alternative courses of action. In view of the uncertainty associated with the outcome of most action programs, considerable attention is given to the measurement of probabilities. Finally, the valuation of outcomes is discussed including the common situation in which non-monetary values are important.

Research Methods in Community Health: Principles of survey design are considered, along with specific means of collecting information. The importance of developing a sound analytical framework is stressed in order that clear unambiguous conclusions and meaningful recommendations can be derived.

Public Health Statistics (optional): Methods are developed for quantitative analysis of current problems facing public health administrators in the planning and evaluation of maternal and child health, medical care, population planning, and other service programs. Besides giving attention to mortality, morbidity, and other numerical data, the course is directed to the development of quantitative measures of attitudes.

Principles and Practice of Modelling: Experience is gained in the systematic conversion of individual problems into quantitative models. With these problems in mind, a number of useful techniques in statistics and operations research are discussed. Illustrations are given of the use of demographic and epidemiological data in the development of population models. The value of comprehensive systems analysis is exemplified by the model developed at Johns Hopkins for the functional analysis of health services requirements.

G. Doctoral Candidates and Residents

We have reluctantly had to limit the number of doctoral candidates and residents that we will accept. This has become necessary because of the tremendous investment in faculty time that is required to provide supervision for an overseas field activity. We will have only five residents at a time and will also try to keep our doctoral candidates down to an equivalent number.

Several doctoral candidates who have been with us for some time finished their work during the 1970-71 academic year.

1. Asfaw Desta
Thesis: "National Health Planning in Ethiopia"
2. John Wellman
Thesis: "The Gbaja Family Health Nurse Project Lagos, Nigeria, 1967-70: an examination of its family planning impact."
3. Prakash Sangal (joint candidate with Dept. of Biostatistics)
Thesis: "Health and Family Planning Services for a Growing Population: A prediction model of family planning acceptance and its implication for health services in Rural India."

In addition, data collection has been completed and analysis and write-up are being pursued by the following candidates:

1. Cecile DeSweemer
Subject: Nutrition and Infection in India
2. Prakash Grover (joint candidate with Dept. Behavioral Sciences)
Subject: Social Psychological Correlates of Fertility
Behavior - India (Delhi)
3. Sunny Andrews
Subject: Indigenous Practitioners - India
4. Nicholas Cunningham
Subject: Health Problems in Children Under 5 Years of Age,
Imesi Ile, Nigeria
5. William VanArsdell
Subject: Nutrition in Early Childhood of American Indian
Children

The following doctoral candidates are still in the field collecting data:

1. Martin Gorosh
Subject: A Systems Model for Determining the Manpower and
Related Organizational and Administrative Dimensions
of Family Planning/Population Control Programs
2. Biswa Chatterjee
Subject: The Identification of Mycobacteria Found in
Asymptomatic Individuals in Association with Leprosy
3. Arnfried Kielmann
Subject: The Sequellae of Malnutrition in Punjab Children
4. D. Shanker (joint candidate with Dept. of Biostatistics)

New doctoral student:

1. Anthony Golda
Subject: Data Requirements for Comprehensive Health Planning:
An Evaluation

H. Student Involvement in Program Planning

Increased emphasis is being given to student participation in program and curriculum planning. In a specific effort to enhance this relationship, a joint student/faculty committee was recently inaugurated

in the Department of International Health. Students on this committee represent residents, doctoral students and masters level candidates since each of these groups has its own particular needs and viewpoints. This committee makes suggestions for the improvement of the existing curriculum and provides valuable insight into the written and oral communication needs of students. The committee will address itself to description of the duties and responsibilities in the advisor/advisee relationships. It will also prepare and distribute a "Guidelines" document which will provide advisors and students with a consolidated statement of School and departmental policy and requirements for each degree program. Graduate students have always been given responsibility for running certain seminar series. For instance, they have organized the departmental seminars and a special series in tropical medicine.

I. M.P.H. Curriculum Committee

(R.D. Wright, W.A. Reinke, T.D. Baker)

As part of a continuing re-examination of the M.P.H. program of the School of Hygiene, several members of the Department of International Health worked on special committees during the year examining the core curriculum concept as a device to assure that all candidates for the M.P.H. degree receive at least a broad-stroke picture of the major currents of concern and action throughout the whole spectrum of health care. Under present and previous required course patterns it has been and is possible for a student to get his M.P.H. without any exposure to the facts behind the great ecological apprehension, the population explosion, the influence of affluence on demand distribution, and quality in health care services or the mental health implications of cultural revolution at home and abroad.

The core curriculum approach has not yet been accepted here largely for the same reasons it has been only a partial success elsewhere: departments will reluctantly (or, in a few cases, gladly) allot part of their teaching resources to the core curriculum but none is willing to alter the basic patterns of its departmental offering to conform to changed student needs after the core is established. We all agree that we do not want a curriculum that is merely a stringing together of old-line introductory lectures rather than an integrated, multidisciplinary consideration of the interaction of such forces as energy consumption, ecological strain and rate of population increase.

In a modest effort to meet this impasse, work is proceeding on the development of a series of seminars on Great Issues in Health Care to be approached on a cluster basis as indicated above. The plan is to involve all concerned departments in the preparation and presentation of seminars addressed to a multifaceted problem of health care. The problems will be chosen by a student-faculty committee, coordinated by Dr. Wright. It is hoped that through several years of development this approach will give all M.P.H. students an introduction to those health care problems which are of major concern to his society.

J. Education Research for Auxiliary Training Programs

(R.D.Wright, C.E.Taylor, A.Forman, C.DeSweemer,T.D.Baker)

Departmental interests have been much concerned with problems of health and family planning manpower. Because it is increasingly apparent that the greatest shortages and unresolved problems are the issues related to auxiliary personnel and their preparation we are attempting to develop a new academic emphasis and to conduct field trials of innovative programs. With auxiliary training, even more than professional education, the primary concern must be to evolve local programs. Few international generalizations are possible and they must be relatively broad in their perspective. We are concerned primarily with working out an appropriate fit within local situations of the roles of auxiliaries as members of health and family planning teams.

The Department of International Health has two areas of long-term association where the potential is good for testing ideas concerned with the training of auxiliary health personnel for expanded responsibilities in rural maternal and child health planning services.

In Lagos, Nigeria, our program for evaluating the safety and efficacy of tutorially trained nurses and midwives acting as primary care agents in the care of the young child ("underfives") was begun in 1966 with the remodelling of part of the Gbaja Street Clinic for a demonstration unit and has now reached the stage where past experience can be translated into a national program.

Two doctoral candidates spent three years in Lagos on evaluation studies of the safety and efficiency of nurses and assistant midwives in primary care of the young child and the relationship of young child care to birth control acceptance by mothers. A training project requesting AID assistance to translate the pilot experience to a nation-wide approach has been formulated and has cleared all government approvals except the Ministry of Economic Development. The project will be directed by Professor Ransom-Kuti of the Department of Pediatrics. Johns Hopkins has been asked to provide continuing consultation. The most pressing challenge to this project will be the development of efficient and inexpensive techniques and devices for imparting the essential principles and procedures of child saving and child spacing to the low-literate, middle-intelligence mind.

Two significant recent developments at the Gbaja Clinic have been the establishment of a birth control clinic in the demonstration unit, thus avoiding the loss of acceptors inherent in a system requiring referral to a clinic a mile away; and the plans being developed by the local government to put the entire Gbaja Street Clinic on the care plan developed by the demonstration unit.

In Narangwal, Punjab, India, the work in the Rural Health Research Project's 23 villages depends on family health workers (female) and family planning workers (male) for direct services to families. Here, as in Nigeria, auxiliaries at the outset are largely tutorially trained since the

first priority for the introduction of decision-making auxiliaries is to get acceptance from the power structure. In both Narangwal and Lagos acceptance has been achieved with considerable difficulty. In Lagos, evaluation studies from 1966 to 1970 were needed to assure the safety and the efficacy of the auxiliary service. In India, long standing objections of the medical profession have been temporarily allayed by government interest in mass rural care but visiting professors continue to look for evidence that we are preparing quacks.

Any attempt to transform a pilot experience into a national program requires a shift from individual tutorial training to mass methods. At Narangwal the development and stabilization of the auxiliary based family service has now reached a point where higher level professionals can give increasing attention to training innovations for quantity as well as quality improvement. Major efforts have been directed this past year to revision of the FHW field service manual into a more appropriate guide for quasi-independent auxiliaries; formalizing the training program's objectives, content, and methods; criteria for selection of recruits; developing a quality control system for data collected in connection with longitudinal surveys relating to maternal and child health and family planning. conducting systematic observations of FHW functions with special regard to quality of performance as well as time and motion studies; evaluating results of services in relation to input and training.

Efforts to define the nature of supportive supervision essential to the effective functioning of auxiliaries have been started during the past year. Without this knowledge an efficient training program cannot be developed since the level of training required is directly related to the level of supervision.

Another training concern at Narangwal is to develop methods by which professional staff can be induced to alter their traditional functions in order to enable auxiliaries to function effectively. In order to promote a well-coordinated effort to deal with this problem an Educational Committee was formed at Narangwal last year to plan the needed training programs for professionals.

K. New Horizons in Nurse-Midwifery

(A. Forman)

"New horizons in midwifery" is the theme of the 16th Triennial Congress of the International Confederation of Midwives in Washington, D.C. from October 28 to November 3, 1972. Approximately 3,000 professional midwives expect to attend from 41 countries that have national organizations representing about 100,000 midwives. The significance of this event is not only that it will be the ICM's 50th anniversary and first meeting in the U.S.A, but also because the meeting has two specific objectives. It is expected: first that it will gain wider acceptance for nurse-midwifery services in the USA and second, that appropriate recognition will be stimulated that family planning is an essential component in the education of midwives around the world. The American College of Midwives with a membership of 500 has

major responsibility for planning the Congress. One of the major sources of support of the conference is AID. The agency's primary interest in the ICM is because it is launching a world-wide effort to introduce family planning into basic midwifery curriculum.

In keeping with our major interest in broadening the educational preparation of health professionals, a member of the department's faculty Alice Forman, has major responsibility for the more than one year of preparatory work that is necessary before the Congress. Following the meeting she will provide consultation to the ICM's program for introducing family planning in basic midwifery and nursing curricula in various countries.

IV. INCREASE IN RESEARCH COMPETENCE

A. Basic Orientation of Research Planning

The world is so full of challenging problems that considerable restraint in priority setting has to be exercised to ensure a meaningful concentration of effort. Faculty members have a wide spectrum of professional and geographical interests. Merely following personal interest, however, would not necessarily ensure concentration on the most important issues. We have tried various ways of focussing effort to ensure that we develop a critical mass of competence to be applied in chosen areas.

Consideration was given to the concept of geographical concentration as a means of building local relationships and providing continuity of expertise. The decision not to concentrate research effort in one geographical area was made for several reasons. First, our students come from all over the world and we find that it is essential to have faculty members who have worked in each region if not in particular countries. Second, our faculty comes with a wide range of past experience in diverse geographical situations and they feel that they should respond to continuing calls for involvement. To expect them to turn down particular opportunities just because it does not happen to fall in a specified geographical location seems excessively constrictive. This is especially true in the present political climate where we must be careful not to be too aggressive in taking the initiative on projects. Third, certain types of projects can be done best in particular places at different times. No region is optimum for all types of studies. Fourth, we have become increasingly conscious of the need to develop a sufficiently broad base of data from different situations to permit us to make generalizations and derive broad principles. This can often be done best by gathering comparative data on the same variables or testing the same hypotheses under widely different conditions.

Instead of geographical concentration, therefore, we have decided to focus our research activities around certain critical themes which are of particular importance in developing countries. These themes are developed in more detail in the sections of this report which describe individual research projects. Some major departmental interests are:

1. The integration of health and family planning services at the local level.
2. The basic motivations for continuing family planning utilization, especially among rural people.
3. The development of innovative planning and evaluation methodology for health and family planning services.

4. The functions of the health team and role definitions of each member.
5. The adaptation of educational preparation to more clearly defined occupational roles and the development of new educational methods for mass production of high quality auxiliaries.
6. The development of a community orientation in health professionals, especially through the use of field training areas.
7. The epidemiology of the weaning syndrome of synergistic malnutrition and common infections.
8. The sequelae in growth and development, both physical and mental, from poor nutrition and illness in early life and the development of better weaning supplements.
9. Epidemiology of diseases of poor populations, especially in tropical areas.
10. Interactions between health and economic development.

Although these subjects are wide ranging, they do in fact bear a sufficiently close relationship to each other to permit cross fertilization in both methodology and field work.

The organization of research activities seems to be developing in two different patterns. First, we are continuing our previous pattern of developing research bases in which we can carry out field projects with our own teams. The best example is our Narangwal Rural Health Research Center. ~~Second, an increasing pattern is to rely on teams of local scientists in collaborating institutions to carry out the field work. Our role will be to provide conceptualization, plan implementation, provide training for local teams, insure quality control of data gathering and provide a base for analysis and reporting. The best example of this pattern is the new proposal for an International Comparative Study of the Functional Analysis Methodology for Local Health Planning.~~

As pointed out previously, prior to obtaining 211-d support the Department was involved in many small projects with short-term goals and financing, reaching a high of 19 projects in 9 countries. Although each of these projects made its own specific contribution, we did not have the feeling that we were able to engage the deeper issues that most urgently require resolution. It was much easier to get support for practical problems of immediate relevance. With 211-d financing we have been able to concentrate our efforts on some of the tough underlying problems of health, development and population growth. With more perspective we can plan better to make our contributions fit together so as to provide both immediate answers for administrators responsible

for service programs and also to structure long term data gathering and analysis to study the more difficult basic issues.

Under the research headings which follow we have responded to the suggestions of AID in relation to our previous reports by specifically identifying the faculty members from Baltimore who are involved. Those who receive support from 211-d funds have been designated in each instance by underlining their names.

B. Functional Analysis of Local Health Needs and Services
(W. A. Reinke, R. L. Parker, C. A. Alexander, C. E. Taylor,
B. S. Shankar, W. Winkler, F. Nass, R. B. Scott, P. Sangal)

Functional analysis represents a new methodology for local planning that has been developed in the Department of International Health. Field studies in India and Turkey have been designed to contribute to the following objectives:

- a. To measure community health needs with particular attention to developing a better basis for setting priorities among them.
- b. To identify ways in which effective health demand is currently being met and to focus specifically on what can be done for those high priority areas not now receiving adequate attention.
- c. To develop methods to measure the quantity and quality of health resources currently available for health programs.
- d. To quantify specific activities of health centers both in the center and in the community.
- e. To develop methods to measure results of health center activities.
- f. To test the general usefulness of a functional framework for analyzing the manner in which community demands can be translated into health center activities.
- g. To define desirable and practical alternatives for the reorganization of health centers, in terms of both program priorities and job descriptions.
- h. To identify other potential applications of our research methods and to streamline the general procedure so that it can have wide administrative use.

The project has gone through the following stages. First, a two-year feasibility study in teaching health centers in Turkey, Punjab and Kerala led to a report showing that methods could be developed.

Then a two-year definitive study led to standardized methods for making qualitative as well as quantitative appraisals of the functions performed by health center personnel through work sampling and patient flow. Household surveys at intervals of two weeks provided information on community health and family planning needs and practices. The data that were gathered showed that it is possible: (a) to quantify the volume of services generated by the providers in selected health center areas; (b) to quantify the volume of health needs as perceived by the community; and (c) to describe the functional articulation of services to needs for purposes of deriving the costs per unit of health and family planning service provided and of optimizing the allocation of scarce resources available to the health system.

With the ultimate aim of routine administrative application in mind, the field work was carried out in regular government health centers. Two separate areas in India were selected, one in Bangalore in Mysore state and the other in Narangwal in Punjab state. Each was able to closely coordinate field work with the other and to develop one set of questionnaires. In each case attention was focussed on two health centers and their surrounding service areas. In each area three village communities were chosen which clearly differed with respect to ease of communication and transportation and utilization of the health centers. A full year of survey work permitted the analysis to cover the whole range of seasonal influences.

In Turkey three provinces of Eastern Anatolia were selected and three health center areas in each provided the study sample. All activities were coordinated through the Ankara School of Public Health.

The functional analysis study was published in a mimeographed report entitled "Functional Analysis of Health Needs and Services" in December 1970. A further report in Turkish of the Turkey data is being prepared by Dr. Warren Winkler and the faculty of the Ankara School of Public Health. In India a two day conference was held in Delhi in January 1971, which was attended by senior health and family planning officials and chaired by the Director General of Health Services. Both Punjab and Mysore were represented by their Directors of Health and Family Planning. Many suggestions were made for implementing the general recommendations arising from the findings, especially the desirability of building this methodology into routine planning at the state level.

Dr. Robert Parker is now back at Narangwal on a two year assignment to conduct a field trial of a streamlined functional analysis methodology. This is being carried out in cooperation with the Punjab Health Ministry's planning group. By working together on this first effort to use the method for routine planning we hope that a more general application will be achieved.

Also in January 1971, a meeting on Functional Analysis was held in Geneva with more than 50 members of the WHO staff. Following a detailed presentation of the methods and findings there was much discussion of possible applications. This led to the proposal that an international comparative study be set up under WHO auspices. A grant is being negotiated with AID to support work in selected developing countries such as Indonesia and Brazil. In addition, there is a good probability that locally financed projects will be developed under the Bureau of Indian Health in Arizona and Alaska, in association with selected neighborhood health centers in urban ghettos, and in countries such as Japan, Russia, Poland, Hungary and Yugoslavia.

C. Health and Economic Development
(T. D. Baker, M. Sorkin, W. A. Reinke, C. E. Taylor,
J. S. Newman)

The complex interrelationships between health and economic development has long been of interest to economists, health specialists, and program officers in AID. It has been one of the subjects that members of our faculty have long been concerned with and have discussed in publications. We have realized that we would have to respond to AID's interest in definitive research on this topic but deliberately delayed starting field studies while concentrating on developing methodology. This past year in open bidding we were given a contract to conduct a feasibility study of the possibility of developing models and conducting field research. This project represents a good example of the particular value of the institution support from the 211-d grant. It has permitted the Department of International Health to develop faculty strength in disciplines such as health economics, epidemiology, demography and systems analysis. Since this project requires understanding of the process of development in less developed countries, it was essential that the investigators not only have expertise in technical disciplines but also that they have had extensive work experience in less developed countries. Basic 211-d support has made it possible for investigators with this type of experience to be brought together in our department.

Progress to date can be best described according to the four stages of work projected for the initial year. The first stage - literature search - has been well started. An extensive bibliography is being developed from the medical literature and searches have been initiated in the economic and systems analysis literature. The process of annotating references and writing over-all review articles is underway. The second stage - consultations - has been initiated with discussions with World Bank experts and AID specialists. The third stage - exploration of overseas bases for data collection - has been initiated in Brazil and is now being explored in Indonesia. A review of the possibilities of using data from Taiwan will be undertaken in early 1972. The fourth stage - model construction - has yet to be initiated. The conceptual problems in the complex interrelationships of service

programs, levels of health, nutrition, population growth, productivity, and economic development will require time to work out.

Proposals for three potential, definitive research projects will be submitted to AID at the conclusion of the one year feasibility study.

D. Narangwal Population Study
(C. E. Taylor, W. A. Reinke, A. Sorkin, A. M. Forman, D. C. E. Ferguson, R. L. Parker, C. DeSweemer, S. P. Sangal, C. W. McCord, F. Nass)

Previous reports have described the background and experimental design of this long-term study. The two outstanding events of the year at Narangwal were the November 1970 Narangwal Conference and the Research Triangle Institute's appraisal of the program in July, 1971. Reports of both events have been prepared as separate volumes which are available to A.I.D. Only background information, therefore, will be presented here.

The November conference was our first major effort to report to the Government of India the accomplishments of the Population Study at Narangwal. We had previously hosted many visits from small groups of officials and some formal activities such as a WHO Seminar for 20 professors of Social and Preventive Medicine, Social Obstetrics and Social Pediatrics from various medical colleges in India. We had also supplemented the usual formal reports to the Indian Council of Medical Research and Health and Family Planning Ministry with many personal conversations with all levels of Indian Officials. For the November conference, however, officials in the Secretariat of Health and Family Planning and the Office of the Commissioner of Family Planning arranged that invitations should be sent to the top three officials in Health and Family Planning in each of the seventeen states in India. We had strong delegations from all but three States with a particularly outstanding group from the Central Ministry of Health headed by Mr. B. P. Patel, Secretary of Health and Family Planning. There were also representatives of international agencies such as AID/NESA, the AID Mission in Delhi, WHO and foundations. Most of the delegates stayed in tents and the three days of meetings were held under colorful shamiana canopies.

A large volume of data from the baseline surveys was presented in tabular form. Detailed descriptions were presented of the service packages that have been evolved to provide family planning integrated with various components of health services along with a comprehensive review of the experimental design. Field visits were arranged to project sub-centers where family health workers provide integrated health and family planning services. Although no clear cut differences between villages in family planning utilization have yet emerged, the acceptance of family planning seems to be progressing well.

One result of this conference was that we have had numerous requests from various states of India to open branch projects in collaboration with their services. This pressure has been almost embarrassing at a time when the Central Government is actively trying to discourage foreign research activities in India. We have had discreet discussions with Ministry of Health and Family Planning officials about the best response to these requests for satellite projects. The findings from Narangwal are strongly influenced by the Green Revolution and the Punjab's rapid development, and cannot be universally applied. We feel that we should, therefore, pick one of the poorest districts in India for our next demonstration. A second reason for a satellite project is that our activities at Narangwal are mainly research. Tremendous effort goes into surveys and sophisticated data gathering and analysis. Even our field procedures for providing health and family planning services by auxiliaries are under constant scrutiny by various research devices in our Functional Analysis of Narangwal Services. Before the patterns of services that are being developed at Narangwal can be applied in mass programs they will have to go through a stage of field demonstration under circumstances more typical of what will be replicable in government services. The proposal that is now being discussed is that the All India Institute of Medical Sciences, Jawaharlal Nehru University and the Rural Health Research Center form a consortium with each undertaking a field project in a different state. We have been asked to consider Bihar. Our proposal is to distill out of our Narangwal experience a minimum service package which would be implemented in a whole community development block. These negotiations are proceeding slowly because of the delicacy of relationships between the State, the Central Government and our unit. In the meantime, we have plenty to do at Narangwal in consolidating present progress.

With two of the five years of this research grant completed AID/NESA arranged for a site visit to appraise progress in the Population Study. A contract with the Research Triangle Institute provided a team of five professionals headed by Dr. Quentin Lindsay. In a week at Narangwal they conducted an exhaustive evaluation. They brought their own interpreters from Delhi in order to have direct access to the village people without going through our field workers. They have made three recommendations:

1. We have been slow in starting work in our family planning only experimental group of villages and they rightly point out that it is urgent that this part of the project be started. This will be done during the coming winter.

2. A significant data backlog has accumulated both because primary attention has been paid to field work and because of difficulties in recruiting statistical personnel. The evaluation team stressed the need for building up the statistical organization so that processing and analysis of the data can be carried out concurrently with its collection. This should be accomplished by June 1972.

3. They recommend intensive socio-metric studies of the interaction between family health workers and the village people. They were impressed by comments of our supervisory staff about the markedly different personalities of individual villages and the difficulties of predicting effectiveness of family health workers. While we recognize the desirability of such research it is not easy to develop an appropriate methodology. In the functional analysis of Narangwal services we will obtain considerable work sampling data. It should be possible to extend these activities to get qualitative information on the role of the family health worker in addition to the quantitative data that we are now gathering.

Overall, they strongly endorsed the research project and recommended continuing support at an expanded level.

One of our greatest concerns at Narangwal has been to adapt what we learn for rapid implementation in government programs. To do this a new educational unit has been established under Dr. Colin McCord, our new Resident Administrator. Experience from the field will be reduced to routines and standing orders. A more precise job definition for members of the health center team will permit more ready development of innovative teaching programs. We are preparing training manuals from our experience in training our own family health workers. We are advising government training programs. If we develop a satellite project in Bihar we will train the family health workers at Narangwal with the expectation that the study block will become a new type of training center. The best prospect of widespread implementation of the Narangwal pattern of services will be through such training activities. According to our calculations India needs to expand from the present 25,000 active ANM's to over 250,000. We feel that family health workers should not be trained in hospitals as is done now but that a new kind of teaching health center needs to be developed in rural areas. One feature that fits in particularly well with government policy is that such training programs may provide a mechanism for getting the present educated unemployed out of cities and into service programs in villages.

In summary, at a time when most foreign sponsored research in India is being sharply curtailed, we are gratified that our research is considered of sufficiently high priority by the Indian government so that we are being encouraged to expand our activities. We are very conscious, however, that all such relationships in India are fragile and hesitate to predict the future.

e. Nutrition and Infections Study in Narangwal, India

(Taylor, C.E., DeSweemer, C., Reinke, W.A., Parker, R., A. Forman, Sorkin, A., Ferguson, D., Sangal, P.)

During the period covered by this report the field work of the Nutrition and Infections Study has continued as previously described. Three major new activities were initiated: 1) analysis of the large accumulation

of data gathered from 1968 to 1970; 2) introduction of family planning activities in the villages receiving combined nutrition and medical care (Mansuran, Rattan and Saya); 3) a gradual build-up of arrangements to have the village panchayats assume responsibility for providing food for the nutritional supplement program.

1. By December 1, 1971 we expect the analysis of data collected from 1968-70 to have advanced sufficiently to cover most of the descriptive data from the dietary survey, the anthropometric survey and the morbidity survey. In each case the wealth of data permits different approaches to quantification and the testing of relationships. These approaches will be tried out analytically during the next year to determine which contribute most to understanding the interactions of nutrition and infection. We are already being asked to use this developing methodology to help other research projects such as the Punjab study of Levinson from Cornell and longitudinal growth data gathered by the Harvard School of Public Health.

2. The introduction of family planning in Mansuran, Rattan and Saya has gone smoothly because of good relationships in these villages and since some women have been asking for family planning services to be provided by RHRC. This group of villages now becomes the cell in the population study experimental design showing interaction between child care services and family planning.

3. Our study villages are in the heart of the Punjab, the center of the Green Revolution in India. It seems economically feasible to have farmers provide the food for the child and mother feeding program. We are proceeding slowly because the program requires a continued collaborative effort between different factions in the villages, a certain humanitarian motivation on the part of the more affluent farmers, self discipline on the part of those who handle the storage and extraordinary trust by the donors. It is a fascinating exercise in reshaping human relationships for the benefit of the village community. It may be too early to make generalizations, but we are pleased that in the two villages where panchayats were asked to provide food for the feeding program we have had an enthusiastic response.

F. Epidemiological Studies of Leprosy in Calcutta and Purulia, India
(Taylor, C.E., Elliston P.)

An ongoing study of nine villages in West Bengal has been continued with an emphasis on identifying acid fast organisms found in the skin of villagers in this area where leprosy is endemic. Acid fast bacilli are found in 5.7% of persons showing no clinical evidence of leprosy. Asymptomatic family contacts of lepomatous and tuberculoid cases show 7.2% positivity. Of those individuals who are asymptomatic but who have acid fast organisms in their skin, 13% developed clinical leprosy during one year of follow-up. This is more than 13 times the incidence in the general population. Efforts are being made to examine these organisms in the skin histologically, with mouse footpad studies and by immunological methods to determine whether these bacilli are M. leprae.

In Baltimore the emphasis has been on producing a leprolin from M. leprae collected from lepromatous human tissue. This skin test antigen is being used in the Bengal villages under study and in guinea pigs to examine cross reactivity between various mycobacterial antigens. The hope is that this skin test antigen will provide a useful tool in further developing our understanding of the basic epidemiology of leprosy.

G. Indigenous Practitioners and Family Planning, India
(Andrews, S., Taylor, C.E.)

The conflict between modern medical systems and the indigenous systems of medicine in rural communities hinders efficient utilization of available health manpower. Since 1966 our department has been actively studying the role of indigenous practitioners in the traditional health cultures of India. Mr. S. Andrews, a doctoral student with our department, has completed the field work and is preparing a thesis on the possibility of using indigenous practitioners in the state family planning program in Kerala, India. In addition, there is in preparation a study of cultural patterns and beliefs in village India to be published with our monograph series.

H. Economic Studies in India
(Sorkin, A.)

A study of the factors associated with the decline in the Punjab birth rate has been started under the direction of Dr. Alan Sorkin. During his preliminary field work in India he set up a team who are collecting the data. The purpose of the study is to determine the relative strength of multiple variables related to economic change and to family planning and health services as they influence fall in birth rates that has taken place in the Punjab. A related study focussed on factors that have accounted for the success of the "Green Revolution" in the Punjab and has been published.

I. Nutrition and Health Care in Peru
(Graham, G., Baertl, J., Paige, J., Cordana, A.)

1. Health care in a slum area

An additional year of experience in attempting to set up a comprehensive health care scheme in one of the poorest peripheral slums of Lima has permitted a more critical appraisal of our successes and our failures, of our possibilities and of the limitations.

To begin with, it has been demonstrated that it is possible to provide decent care to infants and children at a very low cost in an ambulatory care unit. Most life-threatening illnesses can be coped with, but some require the backing of better hospital facilities than are generally available in a country like Peru. We have been able to treat some of the very sick children at the British American Hospital, where excellent care is available, but this is a fortuitous circumstance.

The key to any success we have had in our dispensary is a devoted Pediatric Nurse Practitioner, who has steadily increased her proficiency and the amount of primary care which she delivers. Our attempt to train two additional nurses to carry out the same work met with resounding failure for a variety of reasons. First and foremost was the unavailability of the U.S. physician who trained the first one, and who was able to give her the backing and the prestige which she needed to develop the dedication and self-confidence to resist the factors which discouraged the others. These were primarily the open scorn and resistance on the part of the Pediatric Resident physicians who provide the back-up care in the dispensary. They resent the responsibilities given to the nurse, constantly try to make her feel inadequate, attempt to humiliate her, and do nothing to improve her capabilities. This, in spite of the fact that they practically have to be dragged to the dispensary, and that once their training is complete, they will never again lift a finger to help the very poor people we are serving. This factor, the resistance of physicians to delegate responsibility for primary care, is not an isolated phenomenon and must be given serious consideration wherever such schemes are being contemplated.

At present we are trying to solve this important problem in a variety of ways. We now have working in our unit for two years an AID-supported U.S. Pediatric Nurse Practitioner who, as part of her program, is supervising the training of two new candidates. Arrangements have also been made for closer and more intense attention by the Peruvian physicians who direct the program and who are now much more dedicated to its success.

Although the Government of Peru has displayed an honest interest in this program and would almost certainly be eager to let us train other groups to carry out this work, we cannot dream of doing so until our own program is on much more solid footing.

2. Peripheral facilities

Some of our naive assumptions about the ease with which we might be able to reach out into the community have been shattered. We have failed to hold together a significant number of the "volunteers" we trained for this purpose, most having left to pursue further education or remunerative work. In attempting to train replacements we have not been successful because of the lack of a qualified individual who can select the candidates, plan the programs, and coordinate the efforts of the various professionals responsible for teaching. This is now being done by the U.S. Pediatric Nurse Practitioner.

The effectiveness and the perseverance of the community organization have been disappointing but this is in part our fault, again because of the lack of a readily available "leader" and our failure to discuss with the community leaders the problems we were encountering.

We are experimenting with a series of "incentives" to hold the trained "volunteers" in the program, short of paying an unrealistic salary. Even if we could pay such a salary, this would be an artificial situation, not replicable in Peru.

We are now concentrating our efforts at complete immunization and growth-screening to a single well-defined unit of the community and will not attempt to move on to others until we are satisfied with the methods and their success.

3. Prevention and treatment of malnutrition

As far as the children who are brought to our dispensary are concerned, we have been successful in the identification, treatment, and follow-up of infants with moderate to severe undernutrition. Although still leaving much to be desired, we have improved the effectiveness of efforts to immunize all children brought to the dispensary, as well as accompanying siblings.

4. Ecology of malnutrition

Our analysis of the relation between socio-economic factors and growth of children in a very poor population is advancing. In a large group of children who were originally admitted with severe malnutrition we find no correlation between their body length or height on admission and the height of their parents or their socio-economic standing. When we look at their height six to seven years later, there is again no correlation with parental height but now we find a significant correlation between this later height and the socio-economic "index." This index takes into account parental origin, length of stay in Lima, education, employment, income, health and alcohol ingestion. It also takes into account the condition of the home, its population density, the presence or absence of services and conveniences, and a number of other factors. We are now beginning an analysis of the data to determine which factors have the greatest predictive value when taken alone or in various combinations.

5. Lactose "intolerance"

Having found a very high incidence in Peru of lactase deficiency leading to lactose intolerance after the age of 3 years, we are now carrying out studies of the implications of this finding on the consumption of milk and milk products by children in Peru. At various times and places in Peru, rejection of donated milk has been found to be a problem.

J. Nigeria

(Wright, R.D., Wellman, J., Taylor, C.E., Reinke, W.A., Nass, F.)

With the return to Baltimore of Dr. John Wellman in September, 1970, Dr. R.W. Morgan, a sociologist, is the only member of the Department of International Health still in Nigeria. Dr. Morgan is now on UNDP funding via WHO directing the research work of the community laboratory, which originated in the Department of Community Health and was transferred to the Gbaja Family Nurse Project in the Department of Pediatrics (Lagos University) when UNDP funding of the project began in June, 1970.

The population activities of the Gbaja Clinic have been greatly strengthened by the establishment of a contraception clinic in the Gbaja Clinic Building immediately adjacent to the Family Nurse Project Clinic. It is no longer necessary to refer mothers to the clinic at the Lagos University Hospital.

In May of 1971 Professor Ransom-Kuti visited the Department of International Health (Baltimore) with information that the Family Planning Training Project first drafted by Dr. Wright in 1967 had, after many rewrites now received the approval of the Nigerian Commissioner of Health and was awaiting clearance by the Ministry of Economic Development before going to AID. In a letter to Dr. Taylor, Professor Ransom-Kuti has requested that Johns Hopkins act as consultants to the project.

During the past year two pilot training programs for nurses from northern states were held at the Gbaja Clinic. Dr. Ransom-Kuti's visit also brought the disturbing news that Dr. A. Adeniyi-Jones had submitted his resignation as Acting Chairman of the Department of Community Health at the Lagos University Medical College. This could have deleterious effects on the population emphasis in the teaching program.

Dr. John Wellman completed his doctoral thesis on the work of the Gbaja Clinic. Five copies were sent to AID. At the request of AID, 100 copies were also sent for distribution to all participants in the Columbia Conference on "The Use of Growth Charts for Assessing Progress of Children and Teaching Parents."

During 1970-71 the Department of International Health has negotiated with the Carolina Population Center on a possible consortium project to upgrade the teaching of population in health training institutions in Tropical Africa. These negotiations are continuing between North Carolina, Howard, Michigan, Johns Hopkins and AID.

K. Chile

(Hall, T.L., Hall, M.F., Baker, T.D., Reinke, W.A.)

In October 1970 Dr. Thomas Hall completed a 39-month assignment to the Government of Chile which was financed by a US-AID/Hopkins contract for consultant services. This association was continued under the direction of Dr. David Lawrence, a department resident. The consultant service will be concluded by the end of 1971. Activities included the following:

1. A national health manpower study, completed in 1970, resulted in the preparation of a dynamic model of the entire health sector. A nationwide survey of the met and unmet demand for health care of 45,000 Chileans provided a starting point for estimating the possible growth of demand. Alternative hypotheses regarding future characteristics and targets of the health sector were proposed and their implications for manpower and fiscal policies analyzed. The methods used to project possible demand for care and to convert service requirements into manpower needs gave a chance for innovative field studies.

2. A medical care study in three large regional hospitals was completed. This study was designed to develop improved techniques for identifying and quantifying the impact of greater efficiency in patient care and staff utilization.

3. Dr. Hall was family planning officer for the AID Mission. He provided technical assistance in arranging for the promotion, development and early implementation of eight major projects in family planning. These projects were to be carried out by various Chilean government agencies with AID financing.

L. Taiwan and Thailand
(Baker, T.D.)

Manpower research activities in progress include studies of migration of physicians from Taiwan and Thailand and methods of estimating appropriate numbers of specialists to be trained in developing countries. The Medical Education Commission Project in Taiwan has been extended for six months.

M. Iran
(Ferguson, D., Wright, R.D.)

The Advisory Report on the Organization and Curriculum of the University of Teheran Faculty of Medicine was completed and published by Dr. Donald Ferguson in November 1970

The department is negotiating a request to act as consultants to assist the community medicine teaching program of Pahlavi University at Shiraz, Iran, in the development of population and family planning teaching to be related to the field work of the Health Corps.

N. Chad and Afghanistan - Geographical Epidemiology
(Buck, A., Anderson, R.)

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 Geographical 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. Entomological findings in collaboration with 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.

Negotiations to finalize the African research center have not been pushed because Dr. Alfred Buck is taking two years leave of absence from Johns Hopkins. He will be in charge of the Parasitology Unit of WHO in Geneva. The Geographical Epidemiology Unit at Johns Hopkins will be under the direction of Dr. Anderson until Dr. Buck's return and follow-up studies will continue. As a result of his role in WHO Dr. Buck expects to continue the groundwork for the research base in Africa.

O. Data Bank

(Newman, J., Reinke, W.A., Baker, T.D., Nass, F.)

Since its inception the department has maintained a collection of journals, books, reports and documents of interest to students and faculty concerned with International Health. These have been supplemented from time to time with data obtained in the course of work undertaken abroad. A major effort is now underway to evaluate, organize, and update these materials, and to incorporate them into an ongoing information system, designed to provide a source of data both for the teaching program in comprehensive health planning and for student and faculty research.

When fully operational, the system will consist of four major elements:

1. Background information on sets of data, ranging from ephemeral agency handouts to computer files of the complexity of a national census.
2. A set of procedures to locate, retrieve and analyze these data, employing both standard library and ad hoc computer routines.
3. The necessary users' manuals.
4. Personnel skilled in organizing and maintaining such an information system, in helping potential users to define their information needs, and in developing the program and systems capabilities for rapid retrieval and analysis.

The staff is expected to have completed the tasks of organizing, evaluating and updating the existing library and vertical file systems during the next year, and to have established a mechanism for keeping these files current. Heavy usage of the data bank is anticipated during the senior health planners course (March-June); the staff will work closely with the planners, modifying the organization and/or operation of the system, and/or the users' manuals as needed.

During the summer and fall of 1972 we expect to incorporate several major computerized data sets into the information system, together with their technical documentation. The three initial 1970 U.S. Census tapes for Maryland have already been obtained, and with the assistance of a consulting firm in Washington, D.C., a set of computer programs for accessing these data are in use on the School of Hygiene's IBM 360-40.

By November 1972 we expect also to have available a wide variety of analytical computer programs, on a fully operational, even routinized basis. The aim here is to free each student and faculty researcher from close dependence upon the programming staff, except for specialized, non-routine operations.

V. CONSULTATIONS AND SERVICE ACTIVITIES

A. Carl E. Taylor, M.D. - Departmental Chairman

1. University Activities

Teaching: International Health 1
International Health 2
International Health 5
International Health 9
International Health Seminars
Comprehensive Health Planning Seminars

Students Advised:

S. Gopalan
N. Nayar
E. Orrell (Elliston)
S. Andrews
P. Grover
A. Kielman
B. Chatterjee

Committees:

University Population Committee
CMRT Coordinating Committee
Advisory Board

2. Extra-University Activities

American Public Health Association
Governing Council
Technical Development Board
PAC on International Health
Committee on Population
MEDICO Advisory Board
Leonard Wood Memorial Advisory Medical Board
Pathfinder Fund Executive Board and
Medical Advisory Board
Iran Foundation Medical Advisory Board and
Board of Directors
Planned Parenthood Medical Advisory Council
AID Population Panel
WHO Advisory Committee on Population & Human Reproduction and
Expert Committee on Professional Education
World Council of Churches, Christian Medical Commission
American Leprosy Mission Advisory Committee

a). Consultations:

AID Manpower Meeting, Washington, D.C. July 2, 1970

b). Meetings and Conferences:

AID Manpower Meeting, Washington, D.C. July, 1970
AMA International Medical Task Force Meeting, Washington, D.C. July 7, 1970
U.S. Library of Medicine, Washington, D.C. July 1970
Pathfinder Fund Executive Board Meeting, Boston, Massachusetts, July 1970
APHA Technical Development Board Meeting, New York, July 1970
Christian Medical Commission, WCC, Geneva, September 1970
AMA Task Force Meeting, Washington, September 1970
American Leprosy Mission Meeting, New York, September 1970
APHA Technical Development Board, New York, September 1970
Pathfinder Fund Board Meeting, Boston, September 1970
Ad Hoc Committee Meeting Review of Leprosy, Rockville, Maryland, September 1970
Army Industrial College, Ft. McNair, D.C. September 1970
AID Consultation Meeting, September 1970
Army Industrial College, Ft. McNair, D.C. October 1970
APHA Annual Meeting, Houston, Texas, October 1970
AID Nutrition Conference, Elkridge, Maryland, November 1970
WHO Expert Committee Meeting on Family Planning, Geneva November 1970
Brookings Institute, Washington, D.C. December 1970
PAHO/WHO International Conference on Viral Diseases of Man, Washington, D.C., January 1971
AMA Task Force Meeting, Washington, D.C., January 1971
Triangle Research Institute, Durham, N.C., February 1971
AID Government Affairs Institute, Washington, D.C. February, 1971
University of Chicago Seminar, March 1971
American Leprosy Mission Meeting, New York, April 1971
University of Michigan, Nepal Academic Research Development Source, April 1971
Christian Medical Commission, WCC, Rome, June 1971

B. Timothy D. Baker, M.D., Professor

1. University Activities

Teaching: International Health 1
International Health 2
International Health 5
International Health 8

Students Advised:

Asfaw Desta
Henry Perry
Grace Kleinback
Theodore Dagi
Hosain Ronaghy
Charles Hostetter
Ned Wallace
Ward Hurlburt
Bruce Bistran
Peter Newell
William Oldham

Committees:

MPH Policy Committee
Doctor of Science Committee
Curriculum Committee
Residency Program Committee
Doctoral Examining Committee
Medical Institute Library Committee
Planning Committee Hopkins Centennial
Alumni Day Program Committee
Population Center Committee

2. Extra-University Activities:

Seminars: Government Affairs Institute, April 1971
Walter Reed Institute for Medical Research,
January 1971
Department of Labor Manpower Institute,
January 1971

Ad Hoc Committee, American College of Preventive Medicine
Boards in Preventive Medicine, October 1970
Jefferson Residency Program, March 1971
Maryland Public Health Association Policy Committee
Baltimore City Medical Society Medical Care Committee,
Chairman
Maryland House of Delegates, State Medical Society

a). Consultant:

AID, Indonesia, July/August 1970
AID, Brazil, January 1971

C. George G. Graham, M.D., Professor

1. University Activities

Teaching:

International Health Seminar
Pediatric Residents, JH Hospital and Baltimore City

2. Extra-University Activities:

Affiliations:

Baltimore City Hospitals, Assoc. Ch. Pedia.
British American Hospital, Lima, Peru

Professional Societies:

American Institute of Nutrition
American Society for Clinical Nutrition
Society for Pediatric Research
American Pediatric Society

Committees:

Committee on Amino Acids, Food and Nutrition Board,
National Academy of Sciences, National Research
Council

Journal of Nutrition, Editorial Board
American Journal of Clinical Nutrition, Editorial
Board

Lectures and Conferences:

American Chemical Society, Los Angeles, California,
March 1971
American Chemical Society, Washington, D.C. September
1971
Protein Advisory Group, Washington, D.C., October 1971
PAHO, Washington, D.C., August 1971

a). Consultant:

AID, Nutrition Division
NIH, Office of International Research, Nutrition Division
Pediatric Staff and Faculty, JH Hospital
Resident Advisor, JH Hospital and Baltimore City
Hospitals

D. William A. Reinke, Ph.D., Professor

1. University Activities

Teaching:

Biostatistics 3
International Health 5
Comprehensive Health Seminars

Students Advised:

Satya Sangal
Martin Gorosh

Committees:

MPH Admissions and Credentials Committee, Chairman
MPH Academic Program Committee
Ad Hoc Committee on Data Processing and Computers
Committee on Environment Control

2. Extra-University Activities:

Meetings, Conferences, Lectures, etc.:

India, to review RHRC projects, August 1970
Chicago, Institute for Health Planning Executives
Annual Meeting, December 1970
India and Geneva, to review plans for developing more
refined information system at Narangwal and field
report to WHO personnel in Geneva, April 1971
Tucson, Health Program Systems Center, Indian Health
Service, June 1971
Washington, Conference of Assoc. for Health Records,
June 1971
Conference on Group Relations, JHU, March 1971

Editorial:

Association for Education Operations Research
Ed. Consult. Demography

a). Consultant:

WHO Committee to prepare monograph on Health Practice
Research
WHO Eastern Mediterranean Regional Office to plan
course on Health Manpower Planning

E. Robert D. Wright, M.D., Professor

1. University Activities

Teaching:

International Health 1
International Health 5
International Health 7
International Health 9
International Health Seminars
Comprehensive Health Planning Seminars

Students Advised:

A. Mumm
P. Newell
A. Oyemade
N. Wallace
J. Wellman
Doctoral Examining Team - 5 students

Committees:

MPH Academic Program Committee
Coordinator for new course "The Great Issues in Health
Care Today"

2. Extra-University Activities

Lectures:

University of Illinois College of Medicine
Zero Population Growth Society, University of
Virginia
Unitarian Church, Charlottesville, Virginia

F. Thomas E.C. Barns, M.D. Associate Professor

Project Officer at the Rural Health Research Center, Narangwal
Village, Punjab, India

G. Thomas L. Hall, M.D., Associate Professor

1. University Activities

Teaching:

International Health 2
International Health 5
International Health Seminars
Comprehensive Health Seminars

Resignation: June 1, 1971 to join Carolina Population
Center, N.C.

2. Extra-University Activities:

Conferences:

AID, Washington, D.C.
Triangle Research Institute, Durham, N.C.

a). Consultant:

Carolina Population Center, N.C.
University of Illinois School of Public Health
WHO Scientific Group for Development of Health
Manpower Studies, Geneva

H. Donald C. Ferguson, Ph.D., Assistant Professor

1. University Activities

Teaching:

International Health 5

Research:

Chief of Party, Resident Administrator Rural Health
Research Center, Narangwal, India

2. Extra-University Activities:

Meetings:

Population Association of America, Washington, D.C.
Functional Analysis of Health Center Activities
Conference, Indian International Center, New
Delhi, India
Johns Hopkins Alumni Meeting, Ashoka Hotel, Japan

Member:

American Association for Advanced Science

I. Alice M. Forman, R.N., M.P.H., Assistant Professor

1. Miss Forman has overall responsibility for nursing and midwifery aspects of Department's programs in teaching and research in Baltimore and overseas.

2. Extra-University Activities:

Harriet Cook Carter Lectureship, Duke University School
of Nursing, Durham, N.C., March 1971
Speaker at Pi Chapter Dinner Meeting of Sigma Theta Tau,
National Honor Society of Nursing in Baltimore
Annual Convention of the American College of Nurse-Mid-
wives in Chicago
Chairman, Legislation Committee of ACNM
Member at large of ACNM's Executive Board
Chairman US/ICM Program Committee for International Con-
gress of Midwives to be held in Washington, November
1972

J. Alan Sorkin, Ph.D., Assistant Professor

1. University Activities

Teaching:

International Health 1
International Health 10
International Health 5
Labor Economics (Homewood)
International Health Seminars

Students Advised:

Asfa Desta (doctoral candidate)
Tony Golda
Sunny Andrews (doctoral candidate)

K. Cecile De Sweemer, M.D., Research Associate

1. University Activities

International Health Seminars

2. Extra-University Activities:

Conference:

AID, Technical Assistant Bureau, HEW, Columbia, Md.
Presented paper (with Dr. Taylor) "The Use of
Growth Charts in Teaching Family Health Workers"

a). Consultation

NIH, Pakistan Rural Health Care Program
Punjab Nutritional Field Study with Cornell University
Student

L. Robert L. Parker, M.D., Research Associate

1. University Activities:

Teaching:

International Health 1
International Health 2
International Health 5
Comprehensive Health Planning Seminars

2. Extra-University Activities:

Conference, APHA, Houston, Texas

Completed requirements and examination for American Board
of Preventive Medicine, December 1970

M. Jeanne S. Newman, Ph.D., Research Associate

1. University Activities:

Teaching:

International Health 5
Assisted students in problem formulation and data
analysis
Student assistance in U.S. Planning Course

2. Extra-University Activities:

a). Consultations:

City of Baltimore, Operation Census Recount
Mayor's Commission on Councilmanic Redistricting

VI. GENERAL UNIVERSITY ACTIVITIES

A. Pattern of Allocation of 211-d Funds

In previous reports we have explained in detail the background for the present distribution of the funds provided by the 211-d grant. In summary, the historical derivation is that an intra-university agreement had provided for AID support to go primarily to the Department of International Health. The pattern of allocation of funds is that 25% of the 211-d money is for health services in general. Another 25% is purely for population work. The remaining 50% is for studies on the integration of health and family planning services. In our budgetary breakdown we show how this allocation has been carried out. In the sections which follow specific departmental contributions to general University activities are described to which 211-d support contributes. These are almost entirely within the category of purely population activities. In the last two sections some other interdepartmental activities of the Department of International Health are described for which the backup support was taken from the health part of the grant.

B. Population Center

The Population Center which is, in part, an outgrowth of the institutional support from the 211-d grant, was developed to facilitate communication and coordination between departments and to provide a channel for administration of university-wide grants. Two grants are now being administered by the Center, the University of Overseas Population Internship (UOPI) (AID/CSD 2832) and the University Services Agreement (USA) (AID/CSD 2956). Currently there are two interns in the field under the UOPI and four projects are being supported by the USA.

The Center operates under an Advisory Board appointed by the Dean, representing the various departments involved in Population programs. The Center staff presently consists of Dr. W.H. Mosley, Director, Mr. Henry Chuck, Financial Officer, and one secretary, with support coming (in part) from the grants currently being administered.

In reference to 211-d support, it should be noted that the UOPI and the USA grants were awarded based on the institutional competence that had been developed with 211-d support. The bulk of the support in both of these grants is directed toward international activities, i.e. the placement and supervision of interns in L.D.C.s (UOPI) and the development and supervision of research projects in L.D.C.s (USA). Thus the productive operation of these grants is dependent on the maintenance of a substantive base of competence in research and training at the home institution through continuing institutional support such as is provided by the 211-d grant.

C. Department of Population Dynamics

Funds from the 211-d grant constituted a substantial part of the support for the program of the Department of Population Dynamics for the

1970-71 academic year. The proportion of support for the faculty is given in the tabulation below; this tabulation also indicates the fields of specialization for the faculty supported:

Name	Field	Proportion of Support
Paul Harper, M.D., M.P.H.	(Dept. Chairman) Administration	41%
Rowland Rider, Sc.D.	Administration/Evaluation	18%
John Kantner, Ph.D.	Demography/Social Sciences	28%
Melvin Zelnik, Ph.D.	Demography/Social Sciences	42%
Ismail Sirageldin, Ph.D.	Economics/Demography	100% (3 mos.)
Zenas Sykes, Ph.D.	Mathematical Demography	42% (2 mos.)
John Biggers, Ph.D.	Reproductive Biology	42% (6 mos.)

The courses given by the Department and the number of students enrolled are given below:

Course	Faculty	Enrollment
<u>P.D. 1</u> Introduction to Population Dynamics	<u>Dr. Harper</u> & all members of staff	61
<u>P.D. 2</u> Introduction to Physiology and Methods of Fertility Control	<u>Dr. Biggers</u>	29
<u>P.D. 3</u> Population Growth, Interrelationships, Problems and Policies	<u>Dr. Kantner</u>	18
<u>P.D. 4</u> Public Health Statistics	Dr. Tayback & <u>Dr. Rider</u>	51
<u>P.D. 6</u> Introduction to Demographic Method	<u>Dr. Zelnik</u>	30
<u>P.D. 7</u> Family Planning Administration	<u>Drs. Harper, Chow, Rider</u> with International Health	37
<u>P.D. 9</u> Biology of Reproduction	<u>Dr. Biggers</u> & staff	11
<u>P.D.10</u> Population Studies	<u>Dr. Kantner</u>	15
<u>P.D.11</u> Techniques of Estimation	<u>Dr. Zelnik</u>	13
<u>P.D.12</u> Stochastic Models for Birth, Death, and Illness Processes	<u>Dr. Abbey</u> (Biostatistics)	8
<u>P.D.13</u> Economics of Population and its Planning	<u>Dr. Sirageldin</u>	12
<u>P.D.15</u> Research Seminar in Population Dynamics		12
<u>P.D.20</u> Special Studies & Research		41

In 1970-71 there were 60 departmental trainees from ten foreign countries and the United States. A list of these trainees as well as activities of the Department of Population Dynamics, including the research program, are given in the annual report (Appendix C). One hundred two students have been trained in Population since 211-d support began in 1968. These students are located in 24 countries, with the majority directly involved in population and family planning programs (Appendix C).

With reference to the 211-d grant, it should be noted that these funds have been used primarily to support the Department's training program in the 1970-71 academic year. The bulk of the remaining support for training came from a Ford Foundation Grant. In July 1971 the department received a five year training grant from N.I.H. This, however, is for Research training and does not support foreign students. In June 1972 the Ford grant will be sharply reduced. Then the department will be more dependent on institutional support and/or the 211-d grant to maintain the competence that has been developed with these funds.

D. Department of Gynecology and Obstetrics - Johns Hopkins University School of Medicine and Hospital

The facilities of the Department of Gynecology and Obstetrics provide a useful training resource for the University's population program, particularly useful because they are immediately accessible to the School of Hygiene and because of the leadership of this department in providing a broad range of family planning services. Dr. Hugh J. Davis, Associate Professor of Gynecology and Obstetrics, holds a joint appointment in International Health and Population Dynamics and is Director of Family Planning at the Johns Hopkins Hospital. The emphasis of the research and service program under his direction has been on demographically effective contraceptive techniques, particularly the use of intrauterine devices.

Training in the following areas is available by virtue of this collaborative program:

- Recruitment and Management of Contraceptors
- Techniques of IUD Insertion and Removal
- Techniques of Suction and Saline Termination of Pregnancy
- Cervical Cancer control in contraceptive programs
- Field trips to family planning services in rural health centers.

The Family Planning Program at Johns Hopkins during the past year serviced over 8,000 patient visits, performed over 1200 sterilizations, 1800 terminations and processed over 1000 new clients. A satellite clinic in the community is being activated in January, 1972, with comprehensive health services as well as family planning services, which will provide additional training opportunities.

E. Department of Behavioral Sciences - Population Control Activities

Three faculty members hold joint appointments in the Departments

of Behavioral Sciences and International Health: Dr. Norman A. Scotch, Dr. Paul E. White and Dr. Sol Levine.

The Department of Behavioral Sciences contributes to the Population Control Program by offering the following courses:

1. Behavioral Sciences I, given by Dr. Levine, Dr. Scotch, Dr. White and staff, which discusses general social factors in the success or failure of public health programs.
2. Health Attitudes and Beliefs, given by Dr. Marshall Becker, which discusses the ways in which attitudes may serve as barriers to the use of health services.
3. Health Professions and Organizations, given by Dr. Paul White, which illustrates how the culture of professions and characteristics of organizations may serve as impediments to the success of public health programs, including population control programs.
4. Planned Change, taught by Dr. Sol Levine in the fourth quarter, which analyzes the causal models and strategies of various public health programs aiming to change the attitudes or behavior of individuals and groups.
5. The Department also provides courses in research methodology which are relevant to people who are interested in evaluating population control programs.
6. Behavioral Sciences also provides individual tutorial help to students interested in population control.

In addition, members of the Department of Behavioral Sciences advise on and participate in the whole range of research activities in the School which are concerned with population problems. Dr. White spent two years in Lahore with the WEPREC project of the Department of Population Dynamics and maintains an active interest in continuing research. One student, Prakash Grover, is jointly being sponsored by Behavioral Sciences and International Health.

F. Department of Biostatistics - Teaching Program as Related to Population

The teaching program of the Department of Biostatistics is addressed to three groups of students. The first is the Master of Public Health class. A general introductory course (Biostatistics 1) is required for all 100 M.P.H. students and about 60 other students also elect this course. Approximately 40% of the content of this course is concerned specifically with the development and use of natality, mortality, and fertility statistics. Considerable attention is given to the construction of life table functions and to the effects on population composition of changes in natality and mortality. Dr. Abbey had primary responsibility for this course in the fall of 1970. She

was assisted in the laboratories by Drs. Gittelsohn, Horn and other members of the Department. Biostatistics 1 was offered again in the summer of 1971 to accommodate a group of 27 degree seeking students. Dr. Ross was responsible with assistance from Dr. Horn and others. A number of the students in Biostatistics 1 sections concentrated their elective work with the demographers in the Department of Population Dynamics.

A second group of students is composed of persons who are candidates for doctoral degrees or for the Master of Science Program. This group tends to elect one or more methods courses in Biostatistics beyond the introductory course. In the spring of 1971 there were 39 students registered in Biostatistics 2, a general methods course. About 20% of the content of Biostatistics 2 is devoted to analysis of life table functions, mortality ratios and other concepts used by demographers. Other topics, such as variance components and applications of probability are discussed in the context of population genetics. Three students concentrating in Population Dynamics took a course in sample survey methods (Biostatistics 5). The sample survey course is aimed exclusively at techniques for sampling human populations. Examples are drawn primarily from health services research and demographic surveys. Dr. Kimball was the instructor for Biostatistics 2. Dr. Ross was instructor in Biostatistics 5.

The third group of students consists of candidates for the Ph.D. and M.Sc. in Biostatistics. From a total of 25 department students six have taken advanced work in the Department of Population Dynamics as part of an "outside" minor. One of these courses, Stochastic Models for Birth, Death, and Illness Processes, is given by Dr. Abbey. Two of these students have dissertation topics in demography. The dissertation of S.P. Sangal, a joint doctoral candidate with International Health, was concerned with approaches for increasing the number of people accepting family planning in Indian villages (see III-I).

A significant amount of the teaching and research effort of the Department of Biostatistics deals directly with techniques and concepts used by demographers and administrators of family planning programs. The allocation of AID grant funds provides a necessary margin for attending to the needs of non-departmental students. Their needs are met by a broad range of formal instruction plus individualized faculty advice and consultation on research and analytical methods.

G. International Journal of Health Services

An annual subsidy of \$6,000 from the Health fraction of 211-d funds has been provided for a new international journal jointly sponsored by the Department of Medical Care and Hospitals and the Department of International Health.

The "International Journal of Health Services: Planning, Administration and Evaluation" was started in January, 1971. This Journal is a multidisciplinary publication and is published on a quarterly basis. It contains analytical and descriptive articles on policy and methods as well

as papers on original research.

The objectives of the Journal are to offer an international forum for new thinking on 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 contains approximately one hundred pages and includes a table of contents, editorials, a "viewpoints" 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 is sought in each issue. The Editorial Board, headed by Dr. Vicente Navarro, the Editor-in-Chief, is the sole body responsible for setting the policies and objectives of the Journal. Editorial consultants have also been appointed to advise the Editorial Board in matters of policy. The official language of the Journal is English.

Subscription prices for the "International Journal of Health Services: Planning, Administration, and Evaluation" is \$20 per year for countries with a gross national product of more than \$500 per capita per annum and \$12 for countries with a per capita of less than \$500. The attached brochure includes the contents of the first volume (four issues) and the names of the current Editorial Board. Overall printing at the time of the second issue was 1,000 copies, with half for overseas distribution.

H. Johns Hopkins Center for Medical Research and Training (CMRT)

The JH-CMRT has completed 11 years of research in tropical medicine with Indian Scientists and has recently concluded a new agreement with the Indian government establishing guidelines for continued research. Dr. Taylor is on the coordinating committee which brings together the interests of the School of Hygiene and of the Department of Medicine in the Medical School. He works closely with Dr. Bang in working out the numerous administrative problems and in negotiations with G.O.I. Our project on the epidemiology of leprosy is part of this overall effort.

During the last three years several studies of the interaction between parasite and human populations have been carried out. An analysis of the ecology of hookworm infections in a rural population of West Bengal was conducted. A study of urban filariasis showed that mosquitoes infected with microfilariae had a higher mortality than uninfected mosquitoes and that vector mosquitoes survived for a very short period after the maturation of larvae to an infective stage. Both of these factors may contribute to the relatively low endemicity of filariasis in Calcutta. A series of ecology studies concentrated on animals closely associated with man, i.e. cattle, house crow, bandicoot rats, rhesus, and showed particularly the

tremendous loss of food to rodents in India.

Several aspects of diarrheal diseases were investigated. Enterotoxigenic strains of E. coli appeared to be responsible for some cases of cholera-like diarrheal disease. These organisms were isolated from cases of non-cholera diarrhea but not from normal subjects. An E. coli enterotoxin has been found to be similar to V. Cholerae enterotoxin in its effect on the rabbit ileal loop but the two had little immunological relationship. Oral administration of glucose-containing electrolyte solutions was effective in maintaining fluid balance in adults once the hypovolemic shock was corrected. A dramatic field test of this new method of oral rehydration was carried out in refugee camps of Bengali refugees. The profound life saving potential is indicated by the observation that this method makes it possible to reduce by more than three-fourths the need for intravenous fluids.

The role of cultural traditions in relation to disease was examined in relation to Ayurvedic medicine, hookworm infection and the worship of Sitala (the goddess of small-pox).

VII. OPERATIONAL WORK PLAN

The coming year will be critical in the development of population and health activities at Johns Hopkins. We must be responsive to pressures in the U.S.A. and developments from around the world, as well as readjustments associated with the development of the Population Center which will enhance our contributions to population programs. We will not only modify the existing patterns of teaching and research, but also plan to start several new activities.

Realistic planning requires clear recognition of uncertainty about the form of Congressional support for International Assistance. While being aware of proposals that universities should be increasingly involved in technical assistance, we also are conscious of the possibility that limitations on funding may force program reduction. Our response to this uncertainty is to feel even more urgency to accomplish as much as we can quickly because the best basis for continuing support for all technical assistance will be evidence of real accomplishment.

A. Teaching Program

We envisage no major changes in the basic teaching program in International Health during the coming year other than maintaining the internal flexibility that has been stressed earlier in this report. Dr. Mosl y is, however, beginning to plan a significant reorientation of the teaching in the Department of Population Dynamics. In his first year as head of the department and the Population Center he is evaluating current teaching and reviewing the academic programs in other schools. On the basis of this analysis he will then plan new departmental teaching activities and perhaps some changed emphases.

We are considering a new contribution in teaching in the form of one-week orientation courses for persons preparing for international work in health and family planning. The impetus came at the initiative of the Medical Advisory Board of CARE/MEDICO. Each year about twenty doctors, nurses and medical technologists go overseas on staff assignments with their medical and health programs in developing countries. In addition, about fifteen Care directors rotate back to the United States each year. The orientation course would also be available for some of the 75 to 100 clinical specialists who go out as volunteers under their program. The immediate reason for CARE/MEDICO interest is because of their increasing awareness that they should be more involved in preventive medicine and family planning. Such an orientation program might also be attractive to other groups sending personnel overseas. Present plans for course content include a bank of video tapes of specific topics in International Health and Population, a reading list, and in-depth discussions with faculty members. This program may be developed in collaboration with the Training Branch of the Center for Disease Control in Atlanta, Georgia.

B. Research Program

Planning for field research must adjust to the present unpredictable pattern of shifts in local policy relating to collaborative programs in many developing countries. We view much of this behavior as a healthy sign of growing scientific independence which can best be encouraged by our being more flexible in our response to local sensitivities. We have been most aware of this instability in relation to our major investment in research activities in India. As other universities and international groups have been eased out, we have become conscious of the fragility of all agreements. As far as we know, Johns Hopkins is the only university with a special umbrella agreement for research projects in India. We felt flattered when, in the process of renegotiating this agreement a year ago, the Ministry of Health set up a special Hopkins Advisory Committee chaired by the Director General of Health Services with membership including the Director of the Indian Council of Medical Research, the Joint Secretary of Health and Family Planning, the Deputy Commissioner of Family Planning, a representative of our Narangwal Rural Health Research Center and a representative of our Center for Medical Research and Training in Calcutta. This committee was to provide a protective cover for our two research centers and to facilitate negotiations, but we continue to have problems.

The continuing recognition in India of Hopkins research contributions seems to indicate that government officials do not include our work in their general complaints about "academic colonialism." For instance, we were encouraged when the Deputy Director of ICMR, in discussing our relationships with the government, commented, "I consider the Rural Health Research Center to be an Indian institution." He then went on to explain that just as the two Christian Medical Colleges receive their support from overseas but are accepted as Indian institutions, we have now established ourselves sufficiently to qualify. We hope that this attitude will permeate generally through the government.

As discussed earlier in this report, the major new emphases in India are in response to governmental insistence that our findings be quickly applicable in national family planning and health services. We are setting up an educational unit to translate what we learn in field research into innovative educational programs for all members of the rural health and family planning team. We are negotiating to set up a satellite project, probably in Bihar, where the research findings from Narangwal can be tried out in a simplified demonstration framework appropriate for general implementation.

A major activity planned for the coming year is to proceed with the International Comparative Functional Analysis Project. This will involve applying our streamlined functional analysis methodology in several different countries under AID and WHO sponsorship. Preliminary negotiations have been started in Brazil, Indonesia and the Philippines, in addition to continuing work in North India. As previously described in this report, this will involve a pattern of collaboration in which local teams do the field work while the core unit at Hopkins provides training, coordination, and quality control of data and analysis.

In Chile, with the return of Drs. Thomas and Francoise Hall, we have greatly reduced our involvement. Dr. David Lawrence has continued some of the projects started by Tom Hall, but is returning to the U.S. by the end of 1971. The new government has endorsed the findings of Dr. Hall's Health Manpower Study and seems to be moving rapidly toward implementation of the recommendations. The Ministry of Health hopes to publish an English translation of the book prepared by Dr. Hall in Spanish to ensure wider circulation. Dr. Francoise Hall is continuing on the faculty of the Department of International Health, even though living in North Carolina, during the coming year in order to finish analysis of Chilean studies on Population Policy.

We have been considering work in other countries of Latin America. Possible involvement seems most promising in Brazil and Dr. Baker's two-month consultation for AID opened up a number of possibilities such as a Health Manpower Study and perhaps a Functional Analysis Project. In addition, of course, Dr. George Graham will continue his extensive nutrition research program in Peru.

We are now maintaining a low profile in Nigeria where we have had our major African research base. Dr. Robert Morgan will continue for another year his involvement in demographic research and the evaluation of family planning activities based in the Gbaja Clinic and the Department of Community Health in the University of Lagos Medical School. If the application to AID for a large training grant for family planning personnel is cleared by the Ministry of Economic Affairs, we will once again have major involvement.

Among other possibilities for involvement in new projects the following seem most definite. We are negotiating a consultative relationship with the International Institute for Rural Reconstruction in Cavite, Philippines. A field experiment is being started in which groups of villages will receive different inputs of family planning education and services. Because of obvious similarities with our Narangwal project we are attracted by the possibilities of collaborative work.

Another promising field possibility is to respond to a request from the Saudi Arabian government that we organize a consortium with the American University of Beirut to provide technical expertise for a new Health Planning project in an Eastern province. This pilot effort in health planning may become a prototype for their national health planning and will be funded by the Saudi Arabian government.

We are also negotiating proposals for interesting projects in Iran, in collaboration with the Pahlavi Medical School in Shiraz; in Indonesia with the Public Health Institute in Surabaya; and in Korea. Some of these may be among the projects to be developed through the University Services Agreement with TA/POP.

Finally, a research effort that in a sense ties together much of the rest of our activities is the new AID contract to explore the interactions

of Health, Population and Economic Development. As we proceed with the literature search and with the development of alternative models we maintain the perspective implicit in the practical objective of setting up field research projects. The process of synthesizing methods from many disciplines and conceptualizing complex, fundamental issues results in potentiation of all of our efforts to help resolve world problems of population and health.

VIII. EXPENDITURE OF GRANT FUNDS

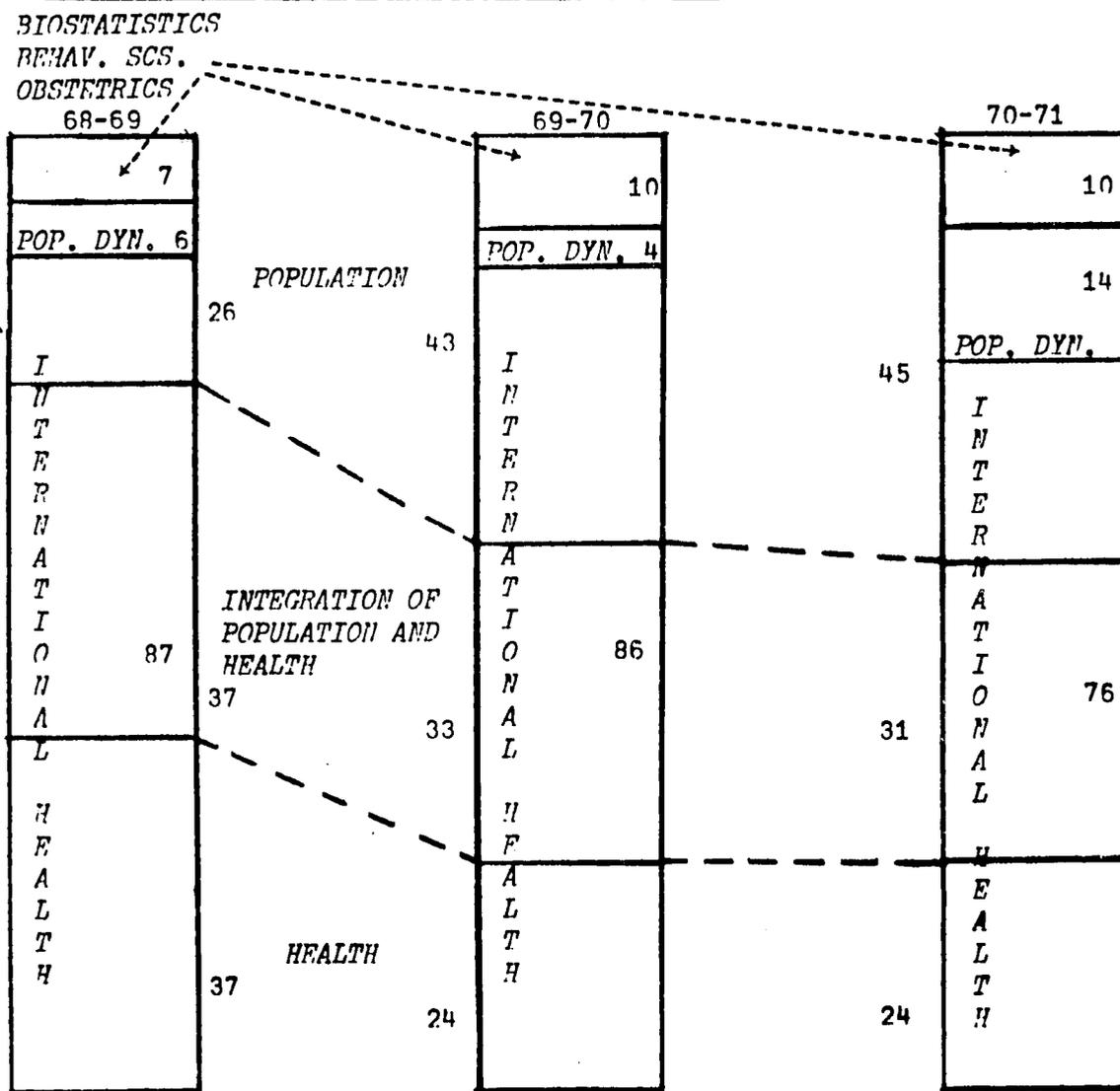
A. Budget and Expenditures.

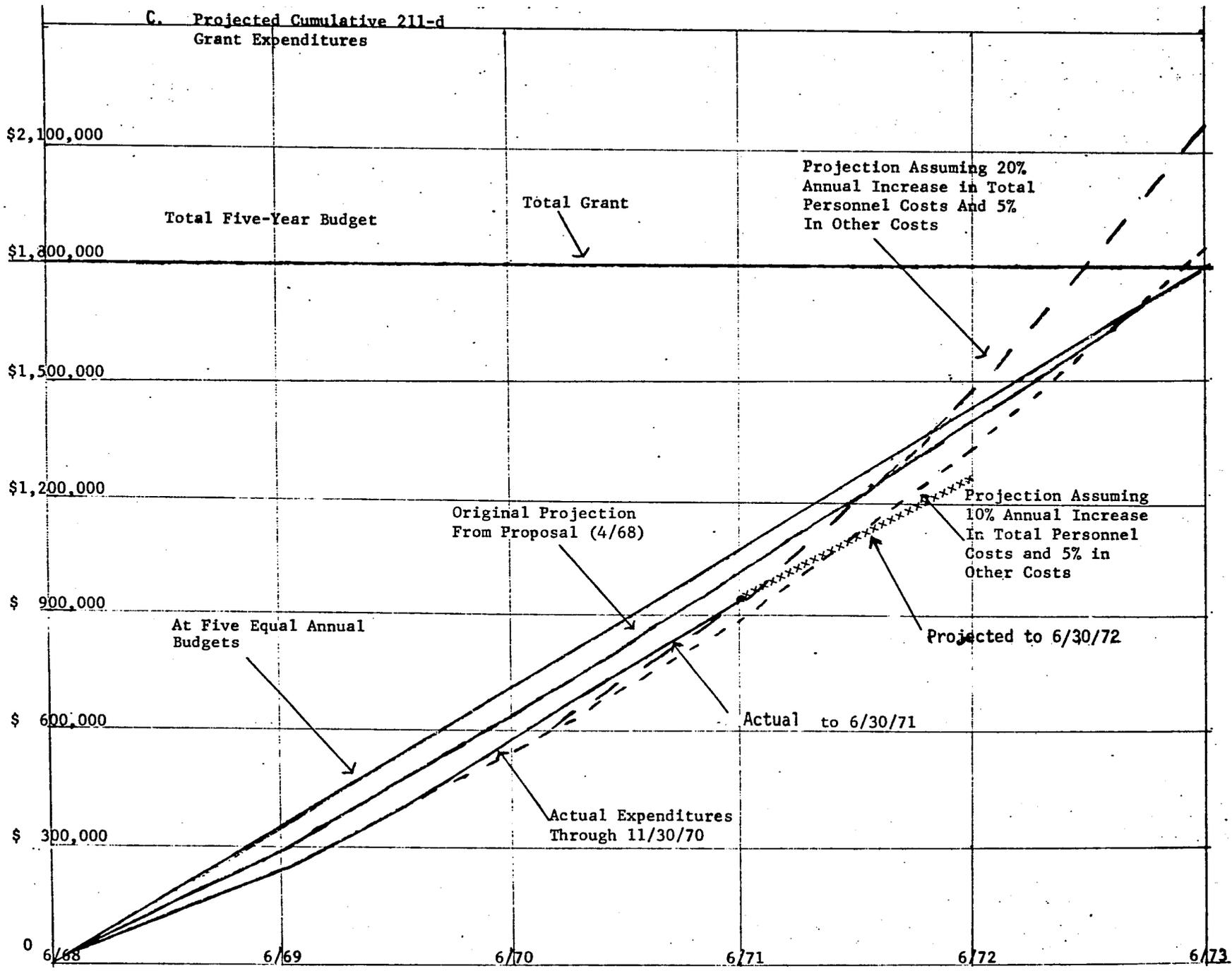
Line Item	Previous Projection for 1970-71	Actual Expend. 1970-71	Estimated Expend. for 1971-72
Salaries	\$ 227,000	\$ 210,992	\$ 202,000
Pilot & Student Projects	12,000	11,187	9,200
Fellowships	20,000	16,538	1,000
Travel	19,500	16,678	8,200
Other Direct Costs	<u>25,000</u>	<u>28,033</u>	<u>45,500</u>
Sub-total	303,500	284,328	265,900
Salaries for Depts. of Population Dynamics & Biostatistics	50,000	70,502	50,000
TOTAL	<u>353,500</u>	<u>354,830</u>	<u>315,900</u>

Last year's report stressed the need for stabilization in expenditure, in view of the probable trend of our costs. We budgeted for only a small expenditure increase, and by the end of the year had succeeded in holding the total for the Department of International Health to seven per cent less than the estimate. Of the many factors that contributed to this, the most important derives from the fact that during the year our research backstopping effort became heavily concentrated on the India projects. Consequently, appropriate shares of salaries, international travel, and, in the case of a DrPH student beginning his overseas field work, fellowships, were shifted to the direct sources of support for the India research. Reviewing our long-term projection of grant expenditure, which is again presented, in updated form, as Section C, it may be seen that we now have established a trend that can keep us within the total grant over the five years. The financial picture is now much brighter in this respect than it was last year at this time, but the expanded objectives of the next work plan make continuing improvements in efficiency most important.

Our day-to-day operational experience in working with the grant over the past year leads us to reaffirm the great value we attribute to the flexibility provided by the grant instrument. It makes possible the rapid shifting of resources, on a small scale, that are vital to the efficient functioning of an organization engaged primarily in international work. This is in marked contrast to the frequent paralysis of action that experience has shown us to be inherent in the standard contract mechanism, when applied to our situation. With three years of solid experience with the grant in hand, we feel better able than ever before to concentrate on improving the efficiency with which we apply the funds to reaching our objectives. It must be recognized, of course, that the determination of productivity in a service organization such as this is notoriously difficult; the measure of it must finally be taken in the technical portions of these reports. Nevertheless, we believe that it is both real and increasing. Unquestionably, major credit for this must accrue to AID for having developed the grant instrument that has made this possible.

B. Percentage Allocation of 211-d Expenditures.





D. Cost Allocation by Area of Activity

As in last year's report we again point out that, for the Department of International Health, which makes substantial expenditures in each of the three major areas of activity, precise allocation is impossible, while for other departments, concerned solely with population work, it is, of course, quite simple. 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 70-71, is given in the following table:

	<u>Health</u>	<u>Population and Health</u>	<u>Population</u>	<u>Other Support</u>
Baker, T. D.	26%	15%	10%	49%
Ferguson, D. C.		9%	8%	83%
Forman, A. M.		19%	19%	62%
Graham, G. G.	22%			78%
Hall, F.			100%	
McCord, C.	25%	50%	25%	
Meredith, J.	20%	39%	20%	21%
Nass, F.	17%	34%	17%	32%
Newman, J.		25%	25%	50%
Parker, R. L.	19%	18%		63%
Reinke, W. A.	21%	13%	8%	58%
Sangal, S.			75%	25%
Scott, R.		100%		
Shankar, B. S.	50%	50%		
Sorkin, A.	6%	12%	6%	76%
Taylor, C. E.	9%	23%	13%	55%

Cost Allocation by Area of Activity (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	<u>Health</u>	<u>Integration of Health and Population</u>	<u>Population (Dept. Int. Health only)</u>	<u>Population (All other Departments)</u>
Dept. of International Health 211-d Expenditures	30%	39%	31%	
As Percent of all 211-d expenditures	24%	31%	25%	20%

From the second row, it will be seen that Department of International Health expenditures were 80% of the total and that population work, considering all departments, accounted for 45% of the total.

Other Departments

Department of Population Dynamics:

All of the 211-d funds used by Population Dynamics have been allocated to professional salary support. This year \$50,728 were used by this department, a sharp increase over last year because reduced funding from other sources made it necessary for this department to use 211-d funds not expended in previous years. The seven faculty members who received partial support are listed on page 44 of this report together with the proportion of their salary that was paid from 211-d funds.

Department of Biostatistics:

The portion of the grant assigned to the Department of Biostatistics totaled \$20,000 in the fiscal year 1971. Most of that amount was used for support of faculty salaries. The small unexpended balance was applied against purchase of several calculating machines, which were placed in open laboratories for general school use.

Expenditures were distributed as follows:

Dr. Helen Abbey	\$8,000
Dr. Alan Gittelsohn	4,000
Dr. Susan Horn	2,400
Dr. Alan Ross	<u>3,000</u>
Sub-total	17,400
Personnel benefits	2,256
Supplies	<u>166</u>
Total Expenditures	19,822

Department of Behavioral Sciences:

Although three senior faculty (Drs. Levine, Scotch and White) are participating in population teaching, only one received financial support from 211-d funds - Dr. Paul White received 11.5% of his salary (\$2,570).

Department of Gynecology and Obstetrics:

Again several members of this department are active in teaching about family planning, including individuals with major involvement such as Dr. Irving Cushner and Dr. Lorin Lau. However, only Dr. Hugh Davis received partial salary support to the amount of \$4,080 from 211-d funds.

E. Fellowships

	<u>FY 69-70 Stipends</u>	<u>FY 69-70 Tuition*</u>	<u>Candidate for Degree</u>
Gorosh, M. (7/69-6/70)	\$7,000.	\$2,250.	Dr.P.H.
Grover, P. (4/70-6/70)	1,174.	112.	Ph.D.
Wellman, J. (7/69-6/70)	8,500.	1,563.	Dr.P.H.
Yen, E. (7/69-1/70)	3,093.	563.	Dr.P.H.
Diaz, A. (7/1-31/69)	750.	50.	Resident

	<u>FY 70-71 Stipends</u>	<u>FY 70-71 Tuition</u>	<u>Candidate for Degree</u>
Gorosh, M. (7/70-11/70)	\$2,458.	\$ 625.	Dr.P.H.
Shankar, B.S. (9/70-11/70)	604.	625.	Sc.D.
Wellman, J. (7/70-6/71)	9,000.	3,125.	Dr.P.H.
Grover, P.		50.	Ph.D.
Scott, R.		50.	Ph.D.

*Tuition not included in FY 69-70 Report.

Direct support for International Journal of Health Sciences:

	<u>FY 69-70</u>	<u>FY 70-71</u>
Editorial Assistance	\$400.	\$5,504.

F. International Travel

Baker, T. D.	6/4-6/18/70 - Baltimore/Geneva/Istanbul/Tunis Baltimore	\$830.50
	Consult with WHO Geneva, participate in seminar in Istanbul, and consult with Dr. Thorne in Tunis.	
Forman, A. M.	10/29/70-1/20/71 - Baltimore/Istanbul/Narangwal/ Istanbul/Geneva/Baltimore	\$2,276.37*
	For consultations on nursing aspects of our Department's Population Project and Nutrition Project in Narangwal, India. En route consultations on other programs related to our department's international health interests.	
Kielmann, A.	7/3-8/22/70 - Baltimore Guatemala City/ Retalhulem/Guatemala City/Baltimore	\$1,167.50
	To attend INCAP's summer course in Public Health Nutrition, Guatemala, C.A.	
Meredith, J.	7/14-8/21/70 - Baltimore/Narangwal/Baltimore	\$1,719.88*
	To revise accounting and management systems to facilitate cost-benefit analyses for India project.	
Parker, R.L.	7/4-8/20/70 - Baltimore/Narangwal/Baltimore	\$1,596.59*
	To India to work with Narangwal staff in developing methods and an on going program to collect quantitative service input measurements for the population and nutrition studies.	
Reinke, W. A.	8/7-8/19/70 - Baltimore/Narangwal/Baltimore	\$1,414.13*
	To assist in review of Hopkins-AID projects in India.	

International Travel (continued)

Taylor, C.E.	A.7/29-9/9/70 - Baltimore/Narangwal/Baltimore	\$1,932.33*
	To India to review Rural Health Research Projects.	
	B.11/5-12/1/70 - Baltimore/Narangwal/Baltimore	\$1,096.37*
	To India to review Rural Health Research Projects.	

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

G. Equipment Purchases

<u>Date</u>	<u>Item</u>	<u>Manufacturer</u>	<u>Price Each</u>
9/70	Bookcase	Lucas Bros.	\$269.00
9/70	Table	Lucas Bros.	112.00
2/71	Dictating Machine	Stenorette	265.52
2/71	Dictating Machine	Stenorette	265.52
2/71	Transcriber	Stenorette	265.52
3/71	Typewriter	IBM	420.00
3/71	Calculator	SCM Marchant	935.75
3/71	Filing Cabinet	Maryland Office Supply	235.00
5/71	Filing Cabinet	Shaw Walker	148.80

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- _____ : "Health Care for the Disadvantaged in the International Area." address delivered at ASIM's Annual Meeting, The Internist XI:7:4,5,7 July 1970
- _____ : "Community Medicine and Medical Education." Ind. J. of Med. Educ. IX:6-7 June-July 1970.
- _____ : "Practice: in Public Health: an Overview," in Manual of Family Planning and Contraceptive Practice, 2nd edition, ed. by M.S. Calderone. Baltimore: Williams and Wilkens 1970.
- _____ and H. Takulia: Integration of Health and Family Planning in Village Sub-Centres, Report of Fifth Narangwal Conference published in India by Narangwal Rural Health Research Centre 1971.

- Taylor, C.E.: "Epidemographic Surveillance and Family Planning" in Epidemographic Surveillance: A Symposium, Monograph 13, edited by Harald S. Frederiksen. Chapel Hill: Carolina Population Center, University of North Carolina, 1971.
- Taylor, C.E.: "The Place of Indigenous Medical Practitioners in the Modernization of Health Services." paper prepared for Symposium of Wenner-Gren Foundation for Anthropological Research, Austria, July 1971 entitled Toward the Comparative Study of Asian Medical Systems (to be published in book form).

APPENDIX A (page 1)

STUDENT LISTS SHOWING PRESENT POSITION:

Residents

1. Adams, Edvin E., MD, MPH
Instructor
Loma Linda University Medical School
Loma Linda, California
2. Alley, James W., MD, MPH
Director General, Public Health Program
Montero, Bolivia
3. Bonnländer, Benjamin H., MD, MPH
Assistant Professor of Public Health
Public Health College
Haile Selassie University
Gondar, Ethiopia
4. Cunningham, Nicholas, MD, MPH
OEO Health Program, East Harlem Project
Mt. Sinai, New York
5. Davis, Joe H., MD, MPH
Office of Health, TA Bureau
AID, Dept. of State
Washington, D.C. 20523
6. Diaz, Alberto, MD, MPH
Director, Community Health Service
Bon Secours Hospital
Baltimore, Md.
7. Clinton, John J., MD, MPH
Public Health Physician/Pop. Officer
USAID, Djakarta, Indonesia
8. Dodge, R. Edward, MD, MPH
Medical Advisor, Frontier Nursing Serv.
Hyden, Kentucky
9. Eidsvold, Gary, MD, MPH
Director, P.H.S., Indian Hospital
Tuba City, Arizona
10. Gwon, Nancy V., MD, MPH
Instructor, Dept. Environmental Med.
State Univ. of N.Y., N.Y.
11. Farley, Eugene Shedden, MD, MPH
Director, Family Medicine Program
Univ. of Rochester School of Medicine
Rochester, N.Y.
12. Hall, M.-Francoise, MD, MPH
Assistant Professor, Dept. of Intern. Hea.
Johns Hopkins Univ. School of Hygiene
13. Hall, Thomas, MD, MPH
Deputy Director, Carolina Pop. Center
Chapel Hill, North Carolina
14. Joseph, Stephen C., MD, MPH
Director, Comprehensive Health Services
Division, Office of Economic Opportunity
Washington, D.C.
15. Krijger, Paul, MD, MPH
1141 Westmoreland Ave.
Syracuse, N.Y. 13210
16. Lawrence, David, MD, MPH
USAID/Chile
Santiago, Chile
17. O'Byrne, David M., MD, MPH
Resident, Dept. of Pediatrics
Stanford University Hospital
Palo Alto, California
18. Parker, Robert L., MD, MPH
Assistant Professor, Dept. of Intern. Health
Johns Hopkins Univ. School of Hygiene
19. Payne, John, MD, MPH
Baltimore City Hospital
Baltimore, Md.
20. Roht, Lewis H., MD, MPH
Resident, Dept. of Preventive Medicine
Univ. of Md., School of Medicine
Baltimore, Md.

APPENDIX A - 2

Residents (continued)

21. Skrovan, Clarence, MD, MPH
Assistant Professor, Dept. of Community Hea.
Univ. of Missouri School of Medicine
Columbia, Missouri
22. Taylor, Berry B., MD, MPH
Resident, (2nd year)
Dept. of International Health
Johns Hopkins Univ., School of Hygiene
(in Montero, Bolivia)
23. Van Arsdell, William, MD, MPH
Medical Director
Model City Clinic
Jamaica Plain, Boston, Mass.
24. Wallace, Donald K., MD, MPH
Preventive Medicine Officer, US Army
Fort Jackson, South Carolina
25. Wellman, John, MD, MPH
USAF School of Aerospace Medicine
Brooks AFB, Texas
26. Winkler, Warren, MD, MPH
Director, Admiral Bristol Hospital
Istanbul, Turkey
27. Yen, Yuh Ting, BM, MPH
Secretary of Medical Education
Ministry of Health
Taiwan, Republic of China

1971 Residents - Student Status, JHU

1. LeBow, Robert, MD.
2. Newkirk, Darrel, MD.
3. Rutherford, R.C., MD.
4. Solter, Steve, MD.

APPENDIX A - 3

Doctoral Candidates

1. Andrews, Sunny, M.P.H.
JHU, Doctoral Program
2. Bucher, Bruce, M.D.
Baltimore City Hospital
Baltimore, Maryland
3. Desta, Asfaw, Dr.P.H.
Ministry of Public Health
Addis Abeba, Ethiopia
4. DeSweemer, Cecile, M.D.
JHU, Doctoral Program
5. Golda, Edward, M.D.
JHU, Doctoral Program
6. Gorosh, Martin
JHU, Doctoral Program
In Field - Kenya
7. Joseph, Stephen C., M.D.
Senior Consultant Medical Care
CAP Health Services
OEO, Washington, D.C.
8. Kawata, Kazuyoski, Dr.P.H.
Associate Professor
Dept. Environmental Health
JHU, School of Hygiene
9. Kielmann, Anfried, M.D.
JHU, Doctoral Program
In Field - India
10. Mehra, A. Torab, Dr.P.H.
% Semiramis Hotel
Ave. Rossevelt
Teheran, Iran
11. Sebai, Zohair, Dr.P.H.
Dar-Kuraish
Jarwal
Mecca, Saudi Arabia

APPENDIX A - 4

Health Planners

1969

1. Amos Arnan, M.D.,
Deputy Director of Public
Health Services, Ministry
of Health, Israel
2. Kamaludin Azami, M.D.
Planning Dept.
Ministry of Health
Iran
3. Jacobus M. Klopper
Director Medical Services
Ministry of Health
Swaziland
4. Adolf Leligdowicz, M.D.
Senior Advisor, International
Relations Office
Ministry of Health, Poland
5. Eilif Liisberg, M.D.
Director, Norwegian Save
the Children Project
Algeria
6. James M. Lynch, M.D.
Regional Chief Health Officer
USAID, Vietnam
7. Dang Quock Phu, M.D.
Chief, Preventive Medicine
Services, Ministry of Health
Vietnam
8. Dradjat D. Prawiranegara, M.D.
Chief, Directorate of Nutrition
Department of Health
Djakarta, Indonesia
9. Abbas Mukhtar Ali Saleem
Asst. Under Secretary
Ministry of Health
Khartoum, Sudan

10. Mohamed Osman Sifaf
Director, Statistics Div..
Ministry of Health, Ethiopia
11. R. Soebekti, M.D.
Bureau of Planning
Department of Health
Djakarta, Indonesia
12. Nguyen Van Thieu, M.D.
Assistant Minister of Health for
Foreign Aid, Vietnam

Health Planners

1970

1. Michael A. Baddoo, MD
Regional Medical Officer of Health
Ministry of Health
Volta Region, Ghana
2. Aldo Bujevic, M.D.
WHO Medical Officer
c/o N.I.H.A.E.
New Delhi, India
3. C. Hilmon Castle, M.D.
Coordinator, Intermountain RMP
Associate Dean, College of Medicine
University of Utah
4. Chaivan K. Sanyakorn, M.D.
Head, Department of Biostatistics
The Faculty of Public Health
Mahidol University, Thailand
5. Duong Minh Chau, M.D.
Director, Joint Military Civilian Health Prog.
Ministry of Health
Chief, Plans and Operations OTSG
Ministry of Defense
Vietnam

Health Planners 1970 (continued)

- | | |
|--|---|
| <p>6. J.H. Hellberg, M.D.
Associate Director
Christian Medical Commission
World Council of Churches
Geneva, Switzerland</p> <p>7. S.M. Hilmy, M.D.
Dean
High Technical Health Institute
Cairo, Egypt</p> <p>8. Nimer Iskandarani, M.D.
Director of Damascus Hospital
Damascus, Syria</p> <p>9. Fernando Leitao, M.D.
Administrador Das Areas de Treinamento
Escola de Saude Publica
Rio, Brazil</p> <p>10. A. Mossadegh, M.D.
Chief, Epidemiology Section
Malaria Eradication Organization
Old Shemiran Road
Teheran, Iran</p> <p>11. Kamal M. Nazif, M.D.
Lecturer
High Institute of Public Health
Alexandria, U.A.R.</p> <p>12. Nguyen Kien Ngoc, M.D.
Chief of Plans and Foreign Aid Service
Ministry of Health
Vietnam</p> <p>13. Ian S. Robb, M.D.
Professor of Anesthesiology
Yonsei University Medical Center
Seoul, Korea</p> <p>14. Generoso B. Roman
Associate Professor of Epidemiology
University of the Philippines</p> <p>15. Dr. Sarnanto
Director, National Institute
of Public Health
Ministry of Health, Indonesia</p> | <p>16. G. Saroukhanian, M.D.
Professor, Public Health Practice
Director, Graduate Studies
School of Public Health
Teheran, Iran</p> <p>17. Sirivat Viseshsiri
Secretary to the Minister of Public Health
Thailand</p> <p>18. P.R. Tassin, M.D.
Medical Officer, P.H.A. Unit
World Health Organization
Geneva, Switzerland</p> <p>19. Danilo Velasquez, M.D.
Director, Maternal and Child Health Prog.
Honduras, C.A.</p> <p>20. L.C. Vogel, M.D.
Honorary Teacher, Public Health
Administration
Department of Community Health
Faculty of Medicine
Nairobi, Kenya</p> |
|--|---|
-
- | | |
|---|--|
| <u>Health Planners</u> | |
| <u>1971</u> | |
| <p>1. Bahrawi Wongsokusumo, M.D.
Deputy Director of Health Services
Department of Health
East Java, Indonesia</p> <p>2. Ana Maria Barat, M.D.
Public Health Worker
Ministry of Health
Rio de Janeiro, Brazil</p> <p>3. Fred S. Boi-Doku, M.D.
Deputy Director of Medical Services
Ministry of Health
Accra, Ghana</p> <p>4. Michel Ary Bordes, M.D.
Director, Centre Materno-Infantile
Member of Planning Unit of the
Health Department
Port-au-Prince, Haiti</p> | |

APPENDIX A - 6

Health Planners 1971 (continued)

5. Paulo Jose Brindeiro, M.D.
Professional Planning Staff Member
Planning, Evaluation, Research
and Special Programs Unit
Ministry of Health
Rio de Janeiro, Brazil
6. Domingos Barbosa Carvalhedeo, M.D.
Director, Planning Health Division
Superintendency of Special
Public Health Service
Ministry of Health
Rio de Janeiro, Brazil
7. Paulo DeOliveira Chaves, M.D.
Health Planner, State Health Dept.
Professor of Social Dentistry
School of Dentistry
Rio de Janeiro, Brazil
8. Cherdsak Ratanajarn, MD.
Medical Officer, Rural Health Division
Department of Health
Ministry of Public Health
Bangkok, Thailand
9. R. Hapsara, M.D.
Staff, Health Planning Bureau
Ministry of Health
Indonesia
10. Edward Miller, M.D.
Systems Analyst and Chief
Section of Evaluation
Memphis Regional Medical Program
Memphis Tennessee
11. William F. Monroe
Assistant Coordinator
Regional Medical Programs
Loma Linda University
Loma Linda, California
12. Paul M. Morrison
Executive Director
Central Virginia Health Services
Development Council, Inc.
Lynchburg, Va.
13. Tran Van Nhieu
Director of Cabinet
Ministry of Health
Saigon, Vietnam
14. H.P. Patel, M.D.
Principal Medical Officer
Ministry of Health and Social Welfare
Kano State, Kano, Nigeria
15. Ghulam Rauf Roashan, M.D.
Director General of Planning
Ministry of Public Health
Kabul, Afghanistan
16. Parviz Sadjedi, M.D.
In Charge of Programming and Medical Care
General Dept. of Planning
Ministry of Health
Tehran, Iran
17. Mario Antonio Sayeg, M.D.
Chief, Dept. of Human Resources Studies
Institute Oswaldo Cruz Foundation
Ministry of Health
Rio de Janeiro, Brazil
18. Maria Stella Winge, M.D.
Public Health Planner
Ministry of Health
Rio de Janeiro, Brazil
19. Col. Charles Wolf
Executive Officer
Office of the Surgeon
Headquarters 1st U.S. Army
Fort George G. Meade, Maryland

APPENDIX B - 1

DEPARTMENT OF INTERNATIONAL HEALTH

1. STAFF

Promotions

R. D. Singh, Ph.D., Senior Associate International
Dolores Laliberte, B.Sc., M. Nursing, Research Associate

New Appointments

Jeanne S. Newman, Ph.D., Research Associate
Colin W. McCord, M.D., Research Associate

Joint Appointments

John W. Williamson, M.D., Professor
Vicente Navarro, M.D., D.M.S., Dr.P.H., Associate Professor

Resignations

Thomas L. Hall, M.D., Dr.P.H., Associate Professor
Richard B. Scott, M.A., Assistant
Herbert K. Abrams, M.D., M.P.H., Lecturer
Kurt W. Deuschle, M.D., Lecturer

Professors

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

Associate Professors

*C. Alex Alexander, M.D., B.S., Dr. P.H.
*Robert I. Anderson, Ph.D.
Thomas E.C. Barns, B.M., B.Ch., D.M., F.R.C.O.G.
*Paul E. White, Ph.D.

*Joint Appointment

STAFF (continued)

Assistant Professors

Angel Cordano, M.D.

*Hugh J. Davis, M.D.

Donald C. Ferguson, Ph.D., M.P.H.

Alice M. Forman, R.N., M.A., M.P.H.

M. Françoise Hall, M.D., M.P.H.

Alan L. Sorkin, Ph.D.

Research Associate

Juan N. Baertle, M.D.

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.

S. Prakash Sangal, M.Sc.

Assistant

Elizabeth P. Elliston, B.A.

Frederic A. Nass, A.B.

Senior Associate (International)

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

K.P. Chen, M.D., M.P.H.

S.C. Hsu, M.D., M.P.H.

A. Torab Mehra, M.D., M.P.H.

R.S. Sarma, Ph.D.

Associate (International)

James W. Alley, M.D., M.P.H.

Elsie Ferguson, Ph.D.

David McK. Lawrence, M.D.

Harbans S. Takulia, M.A.

Ernest Y.T. Yen, Dr.P.H., B.M.

Lecturer

Nicholas Cunningham, M.D., D.T.P.H.

Abraham Horwitz-Barak, M.D., M.P.H.

George E. Immerwahr, M.S.

A. Peter Ruderman, Ph.D.

Ruth White, R.N., M.S., M.P.H.

2. Departmental Students (1970-71)

Residents:

Lavoie, G.
Mumm, A.
VanArsdell, W. (also doctoral)
Wellman, J. (also doctoral)
Taylor, B.B.
Lawrence, D.

Doctoral Candidates:

DeSweemer, C.
Gorosh, M.
Grover, P.
Kielmann, A.
Golda, T.
Andrews, S.
Sangal, P.
Desta, A.
White, R.

Masters students with major interest in International Health

Bistrain
Eye
Ferrand
Gammon
Gopalan
Dungy
Brown
Hostetter
Huriburt
Kakar
Kleinback
Nayar
Newell
Oyemade
Oldham
Perry
Ronaghy
Wallace
Thompson
Ringelberg

Senior Health Planners - Certificate

Bahrawi, Wongsokusumo
Barat, Ana Marie
Boi-Doku, Fred
Bordes, Michel
Brindeiro, Paulo
Carvalho, Domingos
Chaves, Paulo
Cherdsak, Ratanajarn
Hapsara, R.
Miller, Edward
Monroe, William
Morrison, Paul
Van Nhieu, T.
Patel, H.
Roashan, Ghulam
Sadjedi, Parvis
Sayeg, Mario
Winge, Marie
Wolf, Charles

Students Overseas

Grover, P.
Kielmann, A.
Chatterjee, B.
Lawrence, D.
Taylor, B.

Students Advised

Nayar, N.
VanArsdell, W.
Kielmann, A.
Elliston, E.
Andrews, S,
Lavoie, G.
Mumm, A.
DeSweemer, C.

Special Student Studies

1. Mr. Sunny Andrews
Indigenous Medical Practitioners for Promoting
Family Planning in South India
2. Dr. Nicholas Cunningham
Auxiliary Based Child Health Studies in Rural Nigeria

APPENDIX B - 6

Visiting Lecturers (continued)

4. Dr. Paul Densen, Director
Center for Community Health and Med Care
Harvard Univerity Sept. 17, 1970
5. Dr. Robert Young, Director
Baltimore Regional Planning Council
Baltimore, Md. Sept. 24, 1970
6. Dr. Edward Davens, Coordinator
Maryland Regional Medical Program
Baltimore, Md. Oct. 1, 1970
7. Dr. Arthur Engel
National Board of Health and Welfare
Stockholm Sweden Oct. 8, 1970
8. Dr. Herbert Klarman
New York University
Graduate School of Public Adm. Oct. 15, 1970
9. Dr. Hollis Ingraham
Commissioner of Health
New York State Oct. 22, 1970
10. Mr. Eugene Feinblatt, Co-Director
Center for Urban Affairs, JHU Oct. 29, 1970
11. Dr. Albert Waterston
International Bank for Reconstruction
and Development Nov. 5, 1970
12. Mr. William Hiscock
Regional Planning Council
Baltimore, Md. Nov. 12, 1970
13. Dr. Karl D. Yordy
Health Services and Mental Health Adm. Nov. 19, 1970
14. Mr. Gilbert Barnhart
National Center for Health Services R&D Dec. 10, 1970
15. Dr. Brian Abel-Smith
Professor of Social Administration
University of London Dec. 17, 1970
16. Dr. Leroy Burney, Executive Director
Milbank Memorial Fund Jan. 7, 1971

APPENDIX B - 7

Visiting Lecturers (continued)

- | | | |
|-----|--|---------------|
| 17. | The Honorable Paul Sarbanes
House of Representatives
Washington, D.C. | Jan. 14, 1971 |
| 18. | Dr. John H. Bryant, Director
School of Public Health
Columbia University | Jan. 28, 1971 |
| 19. | Mr. Theodore Marmor
Associate Director
University of Minnesota | Feb. 4, 1971 |
| 20. | Dean Margaret G. Arnstein
School of Nursing
Yale University | Feb. 11, 1971 |
| 21. | Dr. Henry Van Zile Hyde, Director
Division of Internat'l Med. Educ.
American Medical Colleges Assoc. | Feb. 18, 1971 |
| 22. | Mr. Paul Gross, Assoc. Prof., Dir.
Computer Center
University of Kaskatchewan | Feb. 25, 1971 |
| 23. | Dr. James R. Kimmey, Exec. Dir.
American Public Health Assoc. | Mar. 11, 1971 |
| 24. | Dr. Emory Johnson, Director
Indian Health Service USPHS | Mar. 18, 1971 |
| 25. | Dr. Jesse L. Steinfeld, Surgeon Genl.
Public Health Service Dept HEW | Mar. 25, 1971 |
| 26. | Mr. Charles Lamb, Architect,
Partner R.T.K.L. Baltimore | Apr. 1, 1971 |
| 27. | Mr. Richard H. Schlesinger
Executive Vice-President
Community Health Inf. & Plng. Serv. | Apr. 8, 1971 |
| 28. | Dr. E.S. Rabeau
Indian Health Service, Tuscon, Ariz. | Apr. 15, 1971 |
| 29. | Mr. Chester A. Sadlow, Director
Health Systems Dept.
Westinghouse Electric Corp. | Apr. 22, 1971 |

APPENDIX B - 8

Visiting Lecturers (continued)

- 30. Dr. Roger M. Battistella
Graduate School of Business
Cornell University Apr. 29, 1971
- 31. Mr. Rafael Salas
Director of United Nations Fund for
Population Activities, New York May 6, 1971
- 32. Mr. Clarence Burns, Chairman
East Baltimore Community Corp. May 12, 1971
- 33. Dr. Arne Barkhuus, Professor
Public Health Administration
Columbia University May 13, 1971
- 34. Dr. Robert J. Muscat, Chief
Planning Division
NESA Div., AID May 20, 1971

4. Departmental Seminar Program

1. International Health Seminars

- Nov. 17 Introduction Dr. Wellman
- Nov. 24 Indigenous Med. Pract. Mr. S. Andrews
- Dec. 1 Problems in Organization and
Administration of Field Research Drs. Parker & Alexandria
- Dec. 8 Training and Utilization of
Auxiliaries Dr. DeSweemer
- Dec. 15 Problems in Comprehensive
Child Care: The Gbaja
Family Nurse Clinic, Nigeria Dr. Wellman
- Dec. 22 Problems in Studying a
Community: an anthropological
study of a Turkish village Mr. Scott
- Jan. 5 The Ameircan Indian Today Dr. Sorkin
- Jan. 12 Movement of People:migration Dr. Newman
- Jan. 19 The past, the present and the
future of health care in Vietnam Drs. Oldham and Golda
- Jan. 26 Political considerations in
Internat'l Health Work Dr. Hall

Departmental Seminar Programs

Comprehensive Health Seminars

-
- | | |
|----------|---|
| Sept. 17 | Dr. Paul Densen (See list of Visiting Lecturers)
"Public Health Policy and the Health of the Public" |
| Sept. 24 | Dr. Robert Young
"Planning for the Baltimore Metropolitan Area" |
| Oct. 1 | Dr. Edward Davens
"Thoughts on Future Directions for the Regional
Medical Program" |
| Oct. 8 | Dr. ARthur Engel
"Regionalization of Health Services in Sweden" |
| Oct. 15 | Dr. Herbert Klarman
"What the Schools Can Teach about Health Services Planning" |
| Oct. 22 | Dr. Hollis Ingraham
"Expanding Responsibilities of State Health Departments" |
| Oct. 29 | Mr. Eugene Feinblatt
"Some Aspects of the Housing Crisis" |
| Nov. 5 | Dr. Albert Waterston
"Planning for Development" |
| Nov. 12 | Mr. William Hiscock
"Areawide Health Planning" |
| Nov. 19 | Dr. Karl D. Yordy
"The Health Planning Process--The View from Health Services
and Mental Health Administration" |
| Dec. 3 | Dr. William A. Reinke
"Health Services Down Under - A Report from Australia and
New Guinea" |
| Dec. 10 | Mr. Gilbert Barnhart
"Some European Experiences in Medical Services" |
| Dec. 17 | Dr. Brian Abel-Smith
"Health Planning in Great Britain" |

APPENDIX B - 10

Comprehensive Health Seminars (continued)

- Jan. 7 Dr. Leroy Burney
"Planning for a Health Science and Medical Center"
- Jan. 14 The Honorable Paul Sarbanes
"A New Congressman Looks at Problems of Health Services
for the Nation"
- Jan. 21 Dr. ARthur Bushel
"Panel Discussion on Public Health Service Hospitals"
- Jan. 28 Dr. John H. Bryant
"Educating Physicians and Nurses for an Uncertain Future--
An Experiment in Thailand"
- Feb. 4 Mr. Theodore Marmor
"The Politics of Paying Physicians: The Determinants
of Government Payment Methods in England, Sweden and the U.S."
- Feb. 11 Dean Margaret G. Arnstein
"The Role of Auxiliary Personnel in Nursing"
- Feb. 18 Dr. Henry Van Zile Hyde
"International Interchange in Medical Education"
- Feb.25 Mr. Paul Gross
"Evaluation of the Regional Medical Program and Comprehensive
Health Planning"
- Mar. 11 Dr. James R. Kimmey
"Objectives and Program of the American Public Health Assoc."
- Mar. 18 Dr. Emory Johnson
"Planning for Indian Health: Special Case of Prototype"
- Mar. 25 Dr. Jesse L. Steinfeld
"The Evolving Federal Role in Health Care"
- Apr 1. Mr. Charles Lamb
"The Special Aspects of Health Services Planning"
- Apr. 8 Mr. R ichard Schlesinger
"Priority Issues in Areawide Health Planning"
- Apr.15 Dr. E. S. Rabeau
"Indian Health Information System and Planning"

APPENDIX B - 11

Comprehensive Health Seminars

- Apr. 22 Mr. Chester A. Sadlow
"The Systems Analysis Study Towards a 'New Generation'
of Military Hospitals"
- Apr. 29 Dr. Roger Battistella
"Managerial Economic Issues in Health, and Implications
for the Future Control of Health Delivery Systems"
- May 6 Mr. Rafael Salas
"The Role of the United Nations in Population Planning"
- May 12 Mr. Clarence Burns
"Community Involvement in Health Planning"
- May 13 Dr. Arne Barkhuus
"The Soviet Model of Health Planning"
- May 20 Dr. Robert J. Muscat
"National and International Policy Planning for Nutrition"

APPENDIX C - 1

Annual Report, July 1970-June 1971

Department of Population Dynamics
School of Hygiene and Public Health
Johns Hopkins University

The year has been one of reasonable progress in teaching and research and of major problems in staffing and funding. Students and faculty continue to be grouped in three broad categories: Administration, Demography, and Reproductive Biology, as shown on page 3.

A total of 60 students were majors in the Department during the year (Appendix 1); the comparable number in 1969-1970 was 44. Thirty-one of the 60 received a degree or were post-doctoral or special students who completed their training.

Twenty-four research projects were active during the year and are briefly described in Appendix 2. In general, the progress of these projects varied from satisfactory to excellent. However, little progress was made in the six projects located in Pakistan where the general administrative and related difficulties were aggravated in March by the war in East Pakistan. The Department proposes to continue its work there with frequent and careful appraisal of progress.

Dr. W. Henry Mosley has accepted appointment as Professor and Chairman and will assume his new responsibilities as of August 1, 1971.

Drs. Biggers, Marcus, and Stern have accepted positions at the Harvard Medical School Center for Reproductive Physiology, but will continue at Hopkins for most of the next academic year. Dr. Allen Schuetz has elected to remain at Hopkins, and an active search is under way for replacement of the others.

The National Institute of Child Health and Human Development has renewed our training grant for five years effective July 1, 1971. In addition, about \$150,000 of quasi endowment has been received during the year. This, plus similar funds received last year, will provide half of the monies needed to match the last three years of the Ford Foundation grant. Financial support for the next five years is in large part assured, but strenuous efforts must be made to raise endowment and other sources of long-term support.

Dr. Kantner and faculty from this and other departments have taken the lead to establish a Johns Hopkins University Population Center which has focused on the following:

- a. University Overseas Fellowship Program - funded
- b. Application to NIH for core research support
- c. Application to AID for University Services Agreement

APPENDIX C

-2-

Courses Offered and Number Enrolled

PD 1	Introduction to Population Dynamics	61
PD 2	Physiology and Fertility Regulation	29
PD 9	Biology of Reproduction	11
PD 7a	Family Planning Administration (2 quarters)	37
PD 4	Public Health Statistics	51
PD 3	Population Growth, Interrelations, Policies	18
PD 6	Demographic Methods	30
PD 10	Population Studies (Homewood Campus)	15
PD 11	Techniques of Estimation	13
PD 12	Stochastic Models for Birth, Death, and Illness Processes (joint-Biostatistics)	8
PD 13	Economics of Population (new course)	12
PD 15	Research Seminar	12
PD 20	Special Studies and Research (total in 4 quarters)	41

Departmental Degree Candidates

	<u>1969-1970</u>	<u>1970-1971</u>
Master of Public Health - major in population	13	15
Doctor of Public Health	4	7
Master of Science	5	4
Doctor of Science	7	9
Doctor of Philosophy	1	2
Post-Doctoral Fellows	5	10
Special Students	<u>9</u>	<u>13</u>
Total	44	60

The Departmental students in 1970-1971 came from fifteen countries as follows: Canada, Ecuador, India, Iran, Korea, Lebanon, New Zealand, Nigeria, Pakistan, Philippines, Sierra Leone, Taiwan, Togo, United Arab Republic, and the United States.

APPENDIX C

-3-

Seven-Year Summary of Developments in Population Dynamics
at Johns Hopkins University, 1964-1970

	<u>1964-1965</u>	<u>1970-1971</u>
Faculty - full-time	4	12
Family Planning Administration		3
Reproductive Biology		4
Demography - Economics		5
Number of Courses Offered	3	15
Library - Departmental		
Number Relevant Books and Periodicals	N.A.	2,000
Floor Space - including laboratory in Reproductive Biology (in square feet)	500	9,400
Students Majoring in Population Dynamics		
Family Planning Administration		
Master of Public Health	10	15
Doctor of Public Health and Post-Doctoral	1	9
Special Students - usually 4-6 months	0	11
Demography	0	18
Reproductive Biology	0	<u>7</u>
		60

A total of 180 have graduated since 1962. At the time of the last survey, 1968-1969, 90% of these were in positions directly relevant to population and family planning.

Number of Research Projects Currently Active - By Category

Demography and Social Science	6
Program Planning and Evaluation	12
Physiology of Reproduction	6

Publications and Reports by Staff and Students,
1965 to Spring 1971

Publications	116
Theses	9
Other, including Government reports	2

APPENDIX C - 4

Sixty Trainees in Population Dynamics
1970 - 1971

<u>Specialization and Name</u>	<u>Months in Residence as of June 30</u>	<u>Expected Degree and Year</u>	<u>Most Recent or Expected Position</u>
<u>Doctoral, Post-Doctoral, and Master of Science Candidates</u>			
<u>Demography</u>			
Agyei, W.	9	Sc.D. 1973	No commitment
Alam, I.	21	Sc.D. 1972	Staff Demographer, Pakistan Institute of Development Economics, Karachi, Pakistan
Alam, Z.	45	Sc.D. 1971	Training, Research, and Evaluation Center, Lahore, West Pakistan
Chaudhury, R.	33	Sc.M. 1971	Sociology Department, University of the Panjab, Lahore, West Pakistan
Cross, M.	33	Sc.M. 1971	No commitment
Destler, H.	29	Sc.M. 1971	No commitment
Hopkins, S.	21	Sc.D. 1972	No commitment
Kim, I.	9	Sc.M. 1972	Deputy Section Chief, Population Division, Korean Bureau of Statistics, Seoul, Korea
Liu, P.*	9	Sc.D. 1971	No commitment
Nair, K.	9	Sc.D. 1973	Lecturer in Demography, Department of Statistics, University of Kerala, Trivandrum, South India
Norris, D.*	21	Ph.D. 1972	No commitment
Osteria, T.	26	Sc.D. 1971	University of the Philippines, Population Institute, Manila, Philippines
Piotrow, P.**	21	Ph.D. 1971	Secretary, Population Crisis Committee, Washington, D. C.
Shah, M.	22	Sc.D. 1972	Staff, Training, Research, and Evaluation Center, Lahore, West Pakistan

*Joint with Department of Biostatistics

**Joint with Department of Political Science

APPENDIX C - 5

<u>Specialization and Name</u>	<u>Months in Residence as of June 30</u>	<u>Expected Degree and Year</u>	<u>Most Recent or Expected Position</u>
Shah, N.	9	Sc.D. 1973	Research Assistant, Training, Research, and Evaluation Center, Lahore, West Pakistan
Zafir, S.	33	Dr.P.H. 1971	Medical Officer, World Health Organization, Alexandria, Egypt
<u>Physiology of Reproduction</u>			
Bellvé, A.	9	Post-Doctoral Research Fellow	School of Agriculture and Life Sciences, North Carolina State University, Raleigh, North Carolina
Kramen, M.	21	Post-Doctoral Research Fellow	No commitment
Olds, P.	9	Post-Doctoral Research Fellow	Department of Biology, Washington University, St. Louis, Missouri
Ozias, B.	9	Post-Doctoral Research Fellow	Department of Anatomy, Kansas University Medical Center, Kansas City, Kansas
Pedersen, R.	20	Post-Doctoral Research Fellow	Assistant Professor, Department of Radiology, San Francisco Medical Center, San Francisco, California
Rayyis, A.	9	Post-Doctoral Research Fellow	Department of Obstetrics-Gynecology, The American University of Beirut, Lebanon
Snyder, B.	9	Post-Doctoral Research Fellow	Department of Zoology, University of Michigan, Ann Arbor, Michigan
<u>Family Planning Administration</u>			
Alam, S.	26	Dr.P.H. 1970	West Pakistan Family Planning Board, Lahore, West Pakistan
Bracewell, M.	9	Dr.P.H. 1973	Nursing Instructor, Los Angeles County Medical Center, School of Nursing, Los Angeles, California
Cranch, G.*	36	Dr.P.H. 1971	Assistant Professor, Department of Maternal and Child Health, School of Hygiene and Public Health, Johns Hopkins University

*Major in Department of Maternal and Child Health

APPENDIX C - 6

<u>Specialization and Name</u>	<u>Months in Residence as of June 30</u>	<u>Expected Degree and Year</u>	<u>Most Recent or Expected Position</u>
Khan, A.	9	Dr.P.H. 1973	Deputy Director (Training and Research), East Pakistan Family Planning Board, Dacca, East Pakistan
Kim, M.	5	Dr.P.H. 1973	Assistant Professor, Department of Public Health, Yonsei University Graduate School and College of Nursing; General Secretary, Center for Population Studies, Seoul, Korea
Melton, R.	21	Post-Doctoral Fellow	Epidemic Intelligence Service Officer, Public Health Service, Atlanta, Georgia
Sun, A.*	33	Dr.P.H. 1971	Resident in Preventive Medicine, School of Hygiene and Public Health, Johns Hopkins University, Baltimore, Maryland

Master of Public Health Candidates

Family Planning Administration

Bai, L.	9	MPH 1971	Assistant Professor, Department of Obstetrics-Gynecology, Berhampur Medical College, District Ganjam (Orissa), India
Begum, F.	9	MPH 1971	Deputy Director (Technical), East Pakistan Family Planning Board, Dacca, East Pakistan
Cushner, I.	9	MPH 1971	Associate Professor, Department of Gynecology-Obstetrics, School of Medicine, Johns Hopkins University, Baltimore, Maryland
Derman, R.	9	MPH 1971	Obstetrics-Gynecology Residence, New York Hospital, New York
Hume, S.	9	MPH 1971	No commitment
Khokhar, P.	9	MPH 1971	Incharge, Family Planning Clinic, Multan, Pakistan
Kolawole, A.	11	MPH 1971	Registrar of Pediatrics, Lagos University Teaching Hospital, Lagos, Nigeria

*Major in Department of Maternal and Child Health

APPENDIX C - 7

<u>Specialization and Name</u>	<u>Months in Residence as of June 30</u>	<u>Expected Degree and Year</u>	<u>Most Recent or Expected Position</u>
Lin, L.*	9	MPH 1971	Private Practice, Obstetrics-Gynecology, Kaohsiung, Taiwan, Republic of China
Mumm, A.**	9	MPH 1971	No commitment
Oldham, W.**	9	MPH 1971	Assistant Director of Health, Agency for International Development, Department of State, Washington, D. C.
Pizarro, J.	9	MPH 1971	Rural Health Physician, Department of Health, Luzon, Philippines
RamaRao, A.	9	MPH 1971	Assistant Professor, Department of Social and Preventive Medicine, Lady Hardinge Medical College, New Delhi, India
Ronaghy, H.**	9	MPH 1971	Assistant Professor of Medicine, School of Medicine, Pahlavi University, Shiraz, Iran
Waddell, C.*	9	MPH 1971	Public Health Residency, Virginia State Health Department and Medical College of Virginia, Richmond, Virginia
Wiley, A.	9	MPH 1971	Family Planning Section, Maryland State Health Department, Baltimore, Maryland

Special Students and Short-Term Participants

Demography

Magsi, G.	9	Special Student	Research Officer, Training-cum-Research Institute of Family Planning, Civil Hospital, Hyderabad, Pakistan
Sweitzer, J.	27	Special Student	Statistician, Bureau of Biostatistics, Baltimore City Health Department, Baltimore, Maryland

*Major in Department of Maternal and Child Health

**Major in Department of International Health

APPENDIX C - 8

<u>Specialization and Name</u>	<u>Months in Residence as of June 30</u>	<u>Expected Degree and Year</u>	<u>Most Recent or Expected Position</u>
<u>Family Planning Administration</u>			
Ahmed, S.	5	Special Student	Doctor Incharge of Urban Family Planning Clinic, Lahore, West Pakistan
Akhtar, H.	3	Post-Doctoral Fellow	Medical Superintendent, Central Government Hospital, Rawalpindi, Pakistan
Akhtar, L.	5	Special Student	Medical Officer, Urban Clinic, Family Planning, Sylhet, Pakistan
Camacho, L.	5	Post-Doctoral Fellow	Chief, Department of Preventive Medicine, Instituto Ecuatoriano de Seguridad Social, Quito, Ecuador
Fine, E.	9	Special Student	Chief Resident, Pediatrics, University of Maryland Medical School, Baltimore, Maryland
Halida, H.	5	Special Student	Medical Officer, Family Planning Urban Clinic No. IV, East Pakistan Family Planning Board, Dacca, East Pakistan
Iqbal, B.	5	Special Student	Medical Officer Incharge, Urban Family Planning Clinic, West Pakistan Family Planning Board, Lahore, West Pakistan
Jan, H.	5	Special Student	Medical Superintendent, Lady Dufferin Hospital, Quetta, Pakistan
Jarrett, D.	5	Special Student	Obstetrics-Gynecology, Kenema Government Hospital, Kenema, Sierra Leone, West Africa
Mumtaz, S.	5	Special Student	Lady Doctor Incharge Clinic Section, Training-cum-Research Institute, Lahore, West Pakistan
Nesha, F.	5	Special Student	Medical Officer, Model Clinics, Family Planning Training-cum-Research Institute, East Pakistan Family Planning Board, Dacca, East Pakistan

APPENDIX C - 9

<u>Specialization and Name</u>	<u>Months in Residence as of June 30</u>	<u>Expected Degree and Year</u>	<u>Most Recent or Expected Position</u>
Rashid, B.	5	Special Student	Incharge, Training and Research Section, West Pakistan Family Planning Board, Lahore, West Pakistan
Wazir, M.	5	Special Student	District Technical Officer, District Family Planning Board, Peshawar, Pakistan

APPENDIX C - 10

Research Currently in Progress
May 1971

Administration and Evaluation

ANALYSIS OF MEDICAL CORRELATES OF IUD EFFECTIVENESS (L. P. Chow) The socio-economic and demographic correlates of IUD effectiveness have been rather extensively studied, but medical correlates of IUD effectiveness and retention are yet to be explored. This study will analyze the medical variables related to IUD programs, utilizing the data collected from Taiwan of the Republic of China, and in collaboration with the Center for Population Planning and Population Studies Center of the University of Michigan.

PREGNANCY LOSSES STUDY (R. Osborn) A study of all women who are admitted to Lahore hospitals because of pregnancy losses is in the planning phase and is expected to go to the field in the Summer of 1971. The plan is to interview all such women and investigate reasons for their pregnancy losses, their medical care experience, and sources and types of advice they get before being admitted to the hospital and their socio-economic characteristics.

RATES OF BIRTHS, DEATHS, AND MIGRATION IN THE RURAL PUNJAB OF WEST PAKISTAN (R. Osborn and R. V. Rider) Since 1962 data on births, deaths, and migration have been collected for the population of the town of Lulliani, about 25 miles south of Lahore. During the period of study the population has averaged about 12,500. Data have been collected by both registration and survey methods. A comparison and matching of the data collected by these two methods have been done and reported on in a paper presented to the IUSSP annual meeting in August 1969. A paper analyzing the migration data was presented at a Pakistan Family Planning Research Seminar in April 1969.

PREGNANCY WASTAGE AND INDUCED ABORTION (R. V. Rider and L. P. Chow) The study seeks to estimate the frequency of induced abortion and its contribution to pregnancy wastage in several different cultures. The study is being done in Taiwan in a limited geographical area. Two thousand women are being followed up every six weeks for one year to obtain information on their pregnancies, if any, and the outcome of the pregnancies. One-half of these 2,000 also have their status checked by pregnancy tests every six weeks. Supplemental information will be obtained from clinics and other places or persons who perform induced abortions. In addition, a study of the "providers" of induced abortions is also being carried out. Finally, another sample of 2,000 women will be interviewed to obtain retrospective data on their use of induced abortion.

COOPERATIVE STUDY OF ORAL CONTRACEPTIVE ACCEPTANCE IN URBAN WEST PAKISTAN (A cooperative study by four family planning agencies) Twelve urban clinics in three cities of West Pakistan are being used to study acceptance and continuity of use of oral contraceptives when offered as an alternative for IUD rejects and as a second priority contraceptive, the IUD being given first priority. The first acceptors were enrolled in the Fall of 1967. During the first year, ovulen was the test drug; subsequently, ovulen and chlormadinone acetate were given alternately.

APPENDIX C - 11

No attempts are made to influence women to stay on the pill. For example, no follow-up visits are made to counsel acceptors or retrieve drop-outs, and all acceptors must themselves return to the clinic for new pill packages.

The continuation rates given in the mid-study report are 50 and 10 at one month and five months, respectively, per 100 acceptors. Data collection was completed in the Fall of 1969. The study was done in two phases. A preliminary report for the first year of experience has been written. A second and final report is being prepared.

EXPERIMENTAL URBAN CLINIC STUDY (A cooperative study by four family planning agencies in West Pakistan) This is a study of how the demand for family planning services at full-time urban family planning clinics in Pakistan may be improved. At the moment these clinics operate far below their capacity and, therefore, at a relatively high cost per client. A sample survey of a 20,000 population in the area of one Lahore clinic was done in Summer 1969. Also at this time the study personnel began modification of the operation of this Lahore clinic. The principal innovation in the clinic operation will be the provision of preventive MCH services along with family planning services. Also, family planning services have been introduced to another urban clinic in Lahore that was providing MCH services alone. Data on client acceptance, follow-up care, and other operational aspects of the two clinics are being collected.

SEVERAL RESEARCHES IN ADOLESCENT PREGNANCY (J. Dempsey, Department of Maternal and Child Health) Several small researches are in various stages of completion. First, a two-year follow-up has been completed on Baltimore City's School No. 1 (for pregnant girls). Rates of recidivism and withdrawal from school have been developed and data analysis is nearly complete.

Secondly, three researches are mid-way in the Cuyahoga County (Cleveland) Welfare Department's program for pregnant adolescents: (a) An effort is being made to assess the recruitment success of an alleged father sub-program; (b) Data collection has been completed to determine the degree to which attendance records are predictive of withdrawal from school after return following delivery; and (c) A data collection system on services rendered is in final stages of pre-testing.

EVALUATION OF MARYLAND STATE HEALTH DEPARTMENT FAMILY PLANNING PROGRAM (R. J. Melton) An automated data system was developed for evaluation of family planning efforts of the statewide family planning program in Maryland. The system has been in continuous operation since July 1968 and has recently been expanded to include the family planning program of the Baltimore City Health Department. The system monitors patient activity by keeping track of all patient visits and appointments. Patients attending the clinics have been characterized as young (median age 23 years) of relatively low parity (median 2.93 pregnancies), and most often married (63%). About half of the patients are white, and half are non-white. Some variation in activity has been correlated with these characteristics. At present about 12,000 patients are considered active by the system; the target population for the City and State is 76,000 patients. Data from the system is used to produce monthly and quarterly reports for use of the county programs and to assist administrators at the State level in improving the program.

APPENDIX C - 12

THERAPEUTIC ABORTION REPORTING IN MARYLAND 1968-1970 (R. J. Melton) This paper summarizes the first two and one-half years of experience with abortion in Maryland after liberalization of the State's abortion law. A total of 2,134 hospital abortions were performed in the first year, 5,530 were performed in the second year, and 3,210 were performed in the first half of the third year. Women receiving abortions in fiscal year 1971 were found to be young (median age 23 years) of low parity (50% had no previous pregnancy), and predominantly unmarried (32% currently married). Almost all (97%) were reported to be Maryland residents. Abortion to live birth ratios for Baltimore patients were higher than for county patients. Non-whites had higher abortion to live birth ratios than did whites (132 per 1000 live births vs. 76 per 1000 live births). Hospital abortions were performed primarily for indications of mental health (96%). At present 57% of the procedures are done by D & C, 33% by intra-amnionic saline injection, and 10% by hysterectomy and hysterotomy. The procedures done late in gestation have been found to have much higher complication rates, and three deaths have been associated with the procedures done after 16 weeks gestation. For these reasons the importance of patient education towards early detection of pregnancy is stressed.

COMPARISON OF CONTINUATION RATES FOR ORAL CONTRACEPTIVES AND THE DALKON SHIELD IUD IN MARYLAND FAMILY PLANNING CLINICS, 1970 (R. J. Melton and J. D. Shelton) In order to determine continuation rates and reasons for termination of patients using the pill and the Dalkon-Shield a follow-up study was undertaken in three Maryland counties in the Summer of 1970. A matched sample of 181 pill patients and 181 Shield patients was studied, and a life table analysis of their experience constructed. Shield patients were found to have higher continuation rates at all times after the first two months. At the end of twelve months the continuation rate for Shield patients was 70% while the rate for pill patients was 55%. Fourteen accidental pregnancies occurred among pill patients and four among Shield users. Pill patients had very large numbers of terminations for personal reasons and many were released from follow-up. Only 10% of pill and Shield patients were considered lost to follow-up. These results are comparable to other studies undertaken in field conditions, but the continuation rates are lower than those reported from hospitals and private clinics.

THE ANTECEDENTS AND SEQUELAE TO INDUCED ABORTION (W. C. Oppel, Department of Maternal and Child Health) The Center for Social Studies in Human Reproduction of the Department of Gynecology and Obstetrics of the Johns Hopkins Hospital is engaged in a pilot study of the antecedents and sequelae to induced abortion. The study group which consists of an obstetrician and gynecologist, an anthropologist, a social worker, a psychologist, and an interviewer is directed by Dr. Irvin Cushner. Selected women are interviewed to obtain social-psychological data which are in the process of being analyzed and correlated with other data surrounding induced abortions.

STUDY OF SEX EDUCATION AND CONTRACEPTIVE SERVICES FOR TEENAGE GIRLS (T. Sasaki) Aims to determine (1) the acceptance of a community-based program of sex education and birth control services directed towards teenage girls, and (2) the effect of the program on the number of first births to unmarried girls, age of marriage, length of schooling, and other measurable variables. The measured variables will be correlated with family background characteristics and with various techniques of reaching and dealing with the girls and their families. The study will be concluded October 1971.

APPENDIX C - 13

Demography

STATISTICAL STUDIES ON THE DEMOGRAPHIC IMPACT OF IUD PROGRAM (L. P. Chow, H. Abbey, and P. T. Liu) A series of studies attempt to develop mathematical models to estimate the impact of IUD program on fertility, including stochastic models to estimate the prevalence of IUD "currently in situ," curve-fitting of IUD retention, and births averted by a segment of IUD as well as by an IUD program each year after implementation of the program. Methods to get at maximum births averted by a fixed amount of input, or a fixed number of births averted by a minimum input will also be explored to guide program planning.

THE RELATIONSHIP BETWEEN FAMILY SIZE AND VARIOUS MEASURES OF WELFARE (I. Sirageldin) Using data from a national sample collected in 1965 by the Institute for Social Research, University of Michigan, for 2,214 families, the relationship between family size and various measures of individual family incomes is being examined. Income measure varies from money income, income including unpaid work (non-market income), to a measure of income that standardizes for consumption requirements (i.e., equivalent consumer units) and allows for the use of leisure. A first draft of the study will be presented at the National Bureau of Economics Research Seminar in Population Economics about May 1971 in New York.

"IMPACT" SURVEY OF LULLIANI (I. Sirageldin) The same survey schedule (except for minor modifications) used for the national IMPACT survey described below has been used to survey 800 of the total of about 2,400 households in the town of Lulliani. This town is the center of the study area in which the Training, Research, and Evaluation Center has been working since 1962. The interviewing was completed in June 1969. Analysis is in progress.

THE LIFE CYCLE UNDER SUBSISTENCE CONDITIONS (I. Sirageldin) Using data on income, saving, labor force participation, family size and wives' work in Pakistan and other developing countries, the working behavior and economic condition of heads of households will be examined in light of the life cycle pattern. The main objective is to examine some of the underlying assumptions in the economic development literature concerning the saving pattern of the working population. The findings will be printed as a chapter in a forthcoming book, "Human Behavior in Economic Affairs," to be published by North Holland Company in late 1971 in honor of George Katona's 70th birthday.

"IMPACT" SURVEY OF PAKISTAN (I. Sirageldin, R. Osborn, other TREC staff, NRIFP, Sweden Pakistan Family Welfare Project, Central Evaluation Units in Lahore and Dacca, EPREC, and Pakistan Family Planning Council) This survey uses a multi-stage probability sample of the Pakistan population stratified by province and whether residence is rural or urban. The questionnaire seeks information on fertility history of female respondents and, for all respondents, information on knowledge of, attitude towards, and practice of family planning, plus some other data relating to socio-economic status, employment, mobility, education, consumption, and attitudes and values. The interviewing in West and East Pakistan

APPENDIX C - 14

was completed in October 1969. A total of about 6,600 currently married women and about one-half as many men were interviewed. The analysis which required approximately one year has been completed. A preliminary report was written in July 1969, and a draft of the final report has been prepared. Further analysis on the technical Appendix is being done.

THE DETERMINANTS OF NEGRO FERTILITY (M. Zelnik and J. Kantner) In recent years considerable effort has gone into attempts to determine the factors affecting the fertility behavior of white females in the United States. At the same time, only limited attention has been paid to studying the fertility behavior of Negro females, even though the fertility patterns of the two groups differ in a number of significant ways. Two recent studies (GAF II and GAF III) have included Negro females in the sampled population. However, these studies have been more descriptive than analytic, and furthermore they cover only married women, thereby omitting the mothers of a significant portion of annual Negro births. A study of factors affecting the fertility of Negro females, especially the unmarried, should receive high priority. Such a study should utilize a longitudinal design that would allow for testing of hypotheses oriented to the prediction of fertility. Preliminary studies, funded by the Social and Rehabilitation Service of HEW, are under way to investigate the feasibility of such an undertaking. These studies include attempts to trace appropriately selected cases, new efforts to increase completion rates, and group discussion with Negro women for the purpose of developing a survey instrument and hypotheses for investigation of an appropriately defined sample.

Reproductive Biology

STUDIES ON THE DEVELOPMENT OF THE EARLY MAMMALIAN EMBRYO (J. D. Biggers) Studies are being made on the role of the fallopian tube and the physiology of early development of the mouse, using nutritional tissue culture type experiments and organ culture.

Studies are also being made on the energy metabolism of early embryos using ultra-microchemical techniques.

STUDY OF THE PHYSIOLOGY OF EARLY PREGNANCY (J. D. Biggers) The importance of the ionic environment on the development of the pre-implanted mouse embryo is being studied using nutritional, tissue culture type experiments and chemical studies using radioactive isotopes.

MEIOTIC MATURATION OF MAMMALIAN OOCYTES (J. F. Kennedy) The factors affecting non-hormonal stimulation of meiotic maturation of the mammalian oocyte, including that of the human, are under investigation. Fertilization, in vitro, of these oocytes will be used as a parameter of normalcy of development.

CELLULAR DETERMINANTS OF UTERINE SENSITIVITY FOR IMPLANTATION AND DECIDUALIZATION (G. Marcus) (a) The role of stromal mitosis in providing uterine potential for decidualization is under study in relation to hormone action and contraception, including the actions of contraceptive drugs and intrauterine devices as well as the failure of implantation in reproductive aging. Comparative studies in the guinea pig and in the human are in progress in addition to the basic studies on the rat (in collaboration with J. F. Kennedy).

(b) The effects of uterine secretions on blastocyst behavior (i.e., activation and post-implantation development) is to be studied and a possible relation to the presence of "competent" stromal cells will be considered. The control of blastocyst development is also under study with consideration of possible direct actions of estrogen in vitro.

(c) The role of RNA synthesis in zygote (1 cell egg) metabolism and development is under investigation (in collaboration with S. Stern).

HORMONAL REGULATION OF OOGENESIS (A. W. Schuetz) Studies are being conducted on the factors regulating the processes of oocyte maturation and ovulation in starfish, amphibians, and mammals. The metabolism and biological functions of gonadotrophic hormones and steroid hormones in the different cellular components of the ovarian follicle are being studied.

SYNTHESIS OF PROTEINS BY THE MATURING MOUSE OOCYTE (S. Stern) It has been established that valine is utilized by the maturing mouse oocyte in vitro for the synthesis of proteins. This protein synthesis can be inhibited by puromycin which also inhibits in vitro maturation. We are presently attempting to correlate these results with the patterns of nucleic acid synthesis during oocyte maturation.

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RELEVANCE

today and tomorrow



in Medical Education

A FORUM WITH A PURPOSE

CARL E. TAYLOR, M.D.

Baltimore

*Professor and Chairman,
Department of International Health,
Johns Hopkins University School of
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IN PRAGMATIC TERMS, a relevant medical education is one that is useful. In this era of an increasingly compact world neighborhood, population pressure seems to force increased neighborliness as a price for survival. The medical profession, in particular, faces increasing international challenges. An unprecedented interest in international service among medical students indicates that here too the student generation is ahead of us in their understanding of what is relevant for the world of tomorrow.

The greater availability of elective time in medical schools permits interesting overseas assignments. Such activities went through some initial erratic phases. Most programs have now stabilized so that students can choose fairly structured situations where they will have both psychologic and professional support. An important development has been that as a result of stimulation from the Association of American Medical Colleges each medical faculty has appointed a liaison officer for international activities. During the past year the Division of International Medical Education of the AAMC did a survey of medical school involvement in international work which included site visits to 51 campuses. Thirty-eight of these 51 medical schools give elective credit for international experience and have diverse arrangements and affiliations with foreign institutions both in teaching and research. In some schools they have international clubs to study work overseas, with the group at Buffalo having been particularly active for a number of years. The SAMA has recently been participating with increas-

ing enthusiasm in the work of the International Federation of Medical Students and through this mechanism developing its own student exchange program. These and many other student activities show clearly that sizable numbers of medical students consider international experience to be a relevant component of medical education.

The most obvious usefulness of international experience to the medical student is stimulation and preparation for those who are considering either long or short term careers overseas. The growing concern of this idealistic student generation in the welfare of the needy people of the world is clearly going to stimulate more doctors into looking for foreign service opportunities. There will probably be an expansion of work under international agencies such as WHO. And in spite of the present attitudes in Congress it is inconceivable that the U.S. will not continue some sort of technical assistance in developing countries. The U.S. has now fallen behind several European countries in our rate of giving. At present, the major thrust of assistance is in family planning and nutrition. It is increasingly evident, however, that to get acceptance of family planning in developing countries, it is almost essential to integrate these services with maternal and child health programs.

Many individuals who have been exposed to international work as part of their medical education will work in the United States. The most relevant effect of this experience is the tremendous change in values and attitudes that occurs in doctors who have experienced the problems in developing countries. Almost uniformly they come back from overseas work changed men and women, seeing all sorts of situations and relationships which were totally outside of their perception before. The stark reality of massive human need increases awareness of social factors. Looking at health problems in a different culture provides an objectivity which could never be achieved in the home environment. In the doctor's own environment, social conditions are accepted just because that is the way they have always been and it is hard to see the possibilities of change. In a dramatically different cultural situation, interactions and incongruities between ecological conditions are more evident. Having seen these realities in an international setting, the young doctor is better prepared to observe with greater objectivity in his own culture.

Another major contribution is being made to our own health services from international contacts. Although we have long prided ourselves on the research contributions that America's massive development of science has given the world, it is now becoming evident that in some important research areas other countries are way ahead of us. This applies particularly to health services research, population studies, comprehensive health planning and experimental approaches to the development of manpower. These have now been designated the highest priority research subjects by our own granting agencies in Washington and private foundations. Much of what we know now has been learned overseas. Many of the American leaders in these critically important areas received their basic experience in international programs. In order to become relevant to modern social needs American medical education has to catch up with many of the developments that have occurred in medical schools overseas.

The Biblical principle of "bread cast upon waters" is now proving true for us in that many of these innovations in foreign countries were directly stimulated by Americans working for foundations, missions or official agencies. To offset the shame that we feel, or should feel, from the growing "brain drain" of doctors from countries where they are needed far more than here we need to participate more actively than ever in international work. Last year half of all doctors entering medical service in the U.S. were graduates of foreign medical schools.

The basic truth underlying all of our previous experience is that the greatest good will come from a synergistic development of medical education at home and abroad.

APPENDIX E-1

One went to Ethiopia, where he taught public health at the Haile Selassie I University. One went to Chile, where he studied the use of medical manpower and facilities. One was a field director of a public health research project in India. One traveled up the Amazon River to instruct midwives in Brazil. One practiced pediatrics in Nigeria. One served in a bush clinic in Nepal.

Now these six young American physicians, who were sent abroad for residencies by the Department of International Health at the Johns Hopkins School of Hygiene and Public Health, are home again, working in community health programs in East Harlem, in Appalachia, in the inner core of cities like Baltimore and Washington. What did they learn overseas that is useful to them here? What similarities do they find in foreign health problems there and those at home? Below they tell their own stories.



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Whether or not any of us truly understands the complexity of today's urban ecosystem, I believe overseas medical service triggers questions that might not ordinarily occur to us. Consider three key questions that particularly concerned me while working as a pediatrician in West Africa where the most important question is: who cares, or is going to care, for the pediatric patients?

In 1966, Ilesha, a town of 100,000 in west Nigeria, was served by a mission hospital and four doctors. We also tried

to care for another 100,000 people in the surrounding farm villages. In one such village called Imesi, which lacked electricity, piped water, or latrines, one public health nurse and five state-certified Nigerian midwives provided supervised services for 5,000 people. To my amazement I found that infant mortality was only 48 per thousand live births and 18 per thousand in the one to five age groups.

To appreciate this achievement, consider Imesi's gross national product per capita (\$60), ratio of doctors to patients (1:50,000), and adult literacy rate (8 per cent). How do these poor villagers achieve so much medically? The answer resides in the activities of the highly motivated, respected midwives, who provide what the mothers want and what the children need, keep the medical costs down, and reach 95 per cent of *all* the preschool children on a regular basis.

A second important question: Where should medical care be delivered? In Togo, where I worked for two years as a Peace Corps Volunteer, as in much of West Africa, poor transportation and overwhelming shortages of hospitals and medical centers have led to the develop-



ment of a regionalized medical system. Mothers are delivered at home or in nearby maternities; minor illnesses are treated in dispensaries; fractures, more severe cases, and most lab work are handled at health centers. Thus, 90 per cent of the medical care is delivered outside the hospitals and medical centers, which are reserved for life-threatening illness or important people. Major preventable diseases like yaws and sleeping sickness have been all but eliminated by mobile endemic disease units.

A third question: How can child health and disease be measured and recorded for both the patient's and the public's benefit? In most tropical child dispensaries, the diagnosis and treatment of each illness is re-

corded on a card that is filed chronologically. Finding the cards is a slow job for which many mothers learn not to wait. To avoid it, they reregister and a plethora of cards results.

In a nurse-based child health demonstration project with which I worked in Lagos, Nigeria, we used a card to record birth date, family demographic data, weight changes, immunization status, and any chronic diseases. The mothers pay 10 cents for the cards and take them wherever the child seeks medical attention. The card provides reliable and essential medical information, eliminates duplication of history taking, and serves as a method of maternal education.

Since returning from Nigeria I have joined the Departments

APPENDIX E-2



of Community Medicine and Pediatrics at Mount Sinai School of Medicine in New York City. My mission is to help make available to every child in East Harlem the best medical care possible. And I ask myself, among other things: Who is available to provide good pediatric care in the difficult environment? Where should the job be done? And how can we record health and disease in this area so that for each child we may have a comprehensive medical history beginning, if possible, before birth?

Perhaps the major lesson one learns overseas is that medical care must be designed to fit both local needs and available resources. This means not asking, "How can I act, using what I know?" but rather, "What do I need to know in order to act?"



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I had served with the Department of International Health of the Johns Hopkins School of Hygiene and Public Health, was the fact that for one year I had been involved in the problems and accomplishments of a health system that concerns itself with the entire population, employs approximately 90 per cent of the physicians, runs nearly every hospital, and, despite serious budgetary hardships and manpower shortages, is getting the job done.

I was attached to an office in the Ministry of Health that was developing a health manpower study; my main assignment, in and out of Santiago, was to develop methods to study the utilization of services and physicians in a variety of hospitals and peripheral outpatient clinics.

We examined the inpatient services in two hospitals, one a university-affiliated institution in Santiago and the other in a province. A methodology was developed to relate the causes of protracted hospitalizations, including late radiologic or laboratory reports, prolonged periods of convalescence, unavailable operating room time, and social problems characteristic of a particular region.

I find my Chilean experience of great value in developing a comprehensive care system in West Baltimore, where a geographically well-defined population of 5,000 persons will be served by the Bon Secours Community Health Center under a program following the same basic patterns that Chile has been using for 15 years. In

support of this program, the center will mobilize manpower and technical resources not only from the hospital, but also from various health agencies concerned with such community problems as mental health, tuberculosis control, family planning, alcoholism, and drug abuse.

The role of the physician's assistant in clinical pediatrics is widely accepted in Chile, due to the shortage of pediatricians. We face the same problem in Baltimore, which we hope to solve by the specialized training of registered nurses. I have seen the Chileans do a good job with such personnel in the well-baby clinics where they conduct most of the preventive care with a pediatrician always available for consultation.

Another valuable physician's assistant in Chile is the midwife, who is responsible for the vast majority of normal deliveries at lying-in hospitals. I believe that with proper training and supervision, midwives could play an important role here, especially in normal prenatal care.

There is a profound social commitment to medical care of the poor in Chile which does not interfere with the private practice of medicine. In the United States, this commitment is seriously deficient. Funds are badly needed, and opposition from conservative medical and sociopolitical groups has retarded the development of a nationwide health care program. In essence, this program is socialized medicine, and the sooner we recognize this reality the more effective our efforts will become.

Uppermost in my thoughts as I flew back from Chile, where

APPENDIX-E-3



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I went to Ethiopia in August, 1967, on a Johns Hopkins University Fellowship in International Health, to teach in Gondar at the Public Health College, a branch of Haile Selassie I University, which trains health officers, sanitarians, and community nurses for rural health center teams.

I was pleasantly amazed at the clinical competence of these health officers. Oriented to handle disease processes common in Ethiopia, they could care for the majority of patients extremely well. Problems beyond their expertise could be referred to provincial hospitals.

Only a few figures point up Ethiopia's staggering health problems: a population of 22,000,000 (90 per cent rural); less than 70 rural health centers; and fewer than 50 Ethiopian doctors. Such facts, however, do not completely reveal the depth of the difficulties. For example,

the village of Dabat (population about 4,000), where I taught, is one of Ethiopia's more fortunate villages, having had a teaching health center for 10 years. Its springs and wells have been largely protected, and many households have latrines. Free maternal and child health services are emphasized at the clinic and through home visits by nurses. Nevertheless, at least 75 per cent of Dabat's inhabitants still carry intestinal worms. From 1967 to 1969, epidemics of typhus, typhoid, and relapsing fever occurred; cases of tetanus were common; and an epidemic of whooping cough, with a fatality rate of 6 per cent, struck the village. The poor health budget does not permit more than sporadic vaccination against diphtheria, pertussis, and tetanus; infant malnutrition is the rule and is still a cause of death, despite free UNICEF milk and a household nutrition program taught by nurses; and childbirth is more often attended by local "grannies" than by trained midwives.

My experience in Ethiopia was invaluable in two chief ways. First, I discovered that providing people with good health facilities and personnel is not enough. Even more important is the matter of teaching them to value and use such services. It is painfully clear to me now that such education takes a long time — not one or two years, but one or two generations. Second, the experience convinced me, paradoxically enough, of a basic weakness in our approach to medical care in the United States for which Ethiopia suggests a possible solution:

A good health care system must put high priority on dealing with common health problems on a community-wide basis, while at the same time providing good backup or specialty services. Our medical education, unfortunately, has produced a generation of specialists instead of generalists, and our current crises in community care are at least partly due to this factor.

I am now engaged in an American program with an emphasis similar to Dabat's. The Frontier Nursing Service, based in Hyden, Ky., is developing a Family Nurse Practitioner course under the leadership of Drs. Gertrude Isaacs and W. B. Rogers Beasley. This is planned as an expansion of the time-proven nurse-midwifery course, and an experimental class, which I help teach, is under way. The Family Nurse Practitioner will be able to carry out nursing, diagnostic, preventive, and treatment functions for the majority of common disorders. She will also be trained to recognize problems beyond her competence and to refer them to appropriate backup services.

Though this pilot program is small, it has much potential significance for the United States and for international health. If this country can begin to solve its serious health care and manpower problems by developing a balanced, quality system of care, perhaps countries like Ethiopia will gain recognition for their pioneering efforts, and be stimulated to further strengthen their own medical systems.



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Following an academic year at Hopkins in which I received the M.P.H. degree, I was sent overseas for two years as the field director of a public health research project in Narangwal, Punjab, India. The purpose of the project was to study primary health center activities and to identify how well these government health services were meeting the needs of surrounding communities. The motivation for this study stemmed from the over-all commitment of India, following independence, to provide broad regionalized health services to its rural masses.

In our extended surveys of selected households, I worked with a dozen Indian professionals in attempting to identify the patterns of illness experienced and the way in which individual health care was sought. This type of research is never easy, particularly when, as in our case, no services were being rendered to the households that we sur-

APPENDIX E -4

veyed, making it difficult to convince villagers of the potential benefits that might arise from our findings. Our staff worked hard to overcome this problem, and several families even offered to develop imaginary complaints if it would help the investigator.

During the one-year study, we were able to show that approximately one-third of the population experienced some illness every two weeks, and that of those who were ill, one-third sought "professional" health care. Only 10 per cent of those seeking health care, however, ended up at government primary health centers, the majority preferring the services of private practitioners. We found that the villagers would not differentiate very much between the modern-trained and the indigenous-medicine practitioners, perhaps because 80 per cent of the drugs dispensed by the latter were advanced medications such as antibiotics.

The other half of our study was concerned with an analysis of health center activities. Here we had to put the health center workers at ease, but it was difficult, for example, to record without verbal comment the consecutive use of the same syringe for 20 patients, many of whom required different medications, given intravenously or intramuscularly, and to see the syringe washed only in plain water between injections. Conversely, we saw quite good techniques for cataract removals, tubal ligations, and vasectomies.

Following my field work in India, I returned to the Department of International Health of Johns Hopkins and am presently helping to complete the

analysis and write-up of the study. The results and the methods developed by this study are to be presented to the Agency for International Development and the Government of India. Most challenging is the fact that here at home we are beginning to realize that our own resources are also limited and that many findings that we identified in India are applicable here.

As for the future, my interests will continue in research and planning of health services focused in an international setting. I anticipate returning to India to attempt to apply some of our techniques to the specific task of assessing the important area of family-planning services.



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After I had completed a general practice residency at the University of Colorado, my wife (a nurse) and I volunteered for the Peace Corps and were sent

to Brazil. There we were assigned to a health department in the Amazon region of Amapá and placed in charge of an isolated rural health post.

Our most difficult adjustments were to the prevailing health and medical practices. For example, every adult resident of Amapá has access to all medications without prescription, so self-treatment and trials with many drugs are common. To compete, local physicians invariably prescribe a variety of new products in the hope of maintaining their aura of special therapeutic capabilities and of insuring the patient's cooperation with further diagnostic efforts or specific therapy. In our short time in Brazil, we were forced to conform to this pattern in order to maintain our own credibility, and in training local people to take our place after we left, we did not discourage drug prescriptions by the nonprofessional health post attendants but tried to train the most capable ones in basic dispensing.

Now we are trying to repeat the same lesson—that of meeting a community's health expectations—in the inner city of Baltimore. In our health center, guidance by an advisory council of consumers has resulted in expanding services to 86 hours per week and in providing for the management of patients without appointments. Thus, while our initial emphasis was to meet health crises in the episodic manner to which the community was accustomed, we now are moving gradually towards health maintenance activities, health care teams, and family health care plans.

Another aspect of our work in Brazil was to train local people in skills most needed by the community. For example, I taught a high school graduate the basic techniques of dental anesthesia and extraction so that he could sometimes relieve me and continue this function after my departure.

Tetanus infection of the newborn was another persistent problem in Amapá. Although a young government-trained midwife was attached to our health post, pregnant women had confidence only in the local midwives. We therefore set up a course for these lay midwives, teaching them the simplest principles of cleanliness. We incorporated them into our health system (or vice versa) by giving them sterile materials and official recognition in exchange for accurate birth recording and their encouraging patients to participate in prenatal care at the health post.

In the inner city of Baltimore, similar manpower shortages and communication gaps exist between professional and patient. Again, the solution has been to bring local people into the health system.

Finally, our Brazilian experience emphasized the gap between the achievements of medical knowledge and their successful application to those in need. Hookworm, malaria, tetanus, smallpox, measles, and many other diseases continued to reappear, cripple, or kill, despite the fact that we know how to eliminate them. This paradox led me to return to school for additional study in medical care organization, the cultural aspects of medicine,

APPENDIX E - 5

and theories of change. And the same challenge continues in seeking solutions for the problems of ill health and poverty in the midst of the richest nation in the world.



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Among my impressions as a Peace Corps physician visiting Nepal, I particularly remember a young mother I saw in an impromptu bush clinic three days' walk from the nearest medical facility. She was suffering from far-advanced pulmonary tuberculosis, and her infant was poorly nourished. Even if she had been willing and able to leave her family and travel to the poorly equipped hospital, how could she have stayed there for initial therapy? Where were the drugs and medical personnel for maintenance care? Given the extremely scarce resources of Nepal, what could have been done to prevent her illness, or to diagnose and treat it at an early stage? What of

the tens of thousands like her, scattered across Nepal?

Recently, working with OEO-funded community health centers here at home, I have been confronted by medical care problems disturbingly similar to those I encountered in underdeveloped Nepal. In the crowded outpatient department of a large hospital, I have seen the effects of lead poisoning in a child of inner-city America who finally received medical treatment only because his condition had become clinically manifest as encephalopathy. After treatment, what would be the outlook for such a child, returning to a poverty neighborhood with inadequate and unsafe housing? And what of the tens of thousands of children living in similar circumstances who are scattered across our underdeveloped country?

"Health care crisis" has become a widespread phrase in recent years, referring to situations seemingly as far apart as those in developing nations, where per capita health expenditures are less than a dollar per year and those in the United States, with a per capita health expenditure in the range of \$250. Although the two arenas may seem poles apart, my work abroad and at home has convinced me that they encompass more similarities than differences. From the perspective of community health services, three major problem areas that are central to the "health care crisis" illustrate this point.

First: Although structure and financing are usually treated as separate issues, I believe that a rational health care system must integrate these components.

Whether one looks at the spiraling inflation associated with a financing reform (Medicaid) that was not linked to appropriate organization and reallocation of provider resources, or whether one examines the empty "modern" medical center standing in the capital of a developing country, without the necessary organization and financing of a primary care network to sustain it, the lesson is the same: The rising demand for complex health services for ever-increasing numbers of people can only be met by a rationally organized medical care program — one that will include a financing system with cost control features, incentives for implementing priorities, and incentives for maintaining and enhancing the quality of care rendered.

Second: Whether one refers to the acute health manpower needs of countries with one physician per 30,000 inhabitants or to the absolute shortages and geographic maldistribution of generalists and specialists in the United States, such quantitative differences should not be permitted to obscure fundamentally similar problems. Incentives to promote the rational distribution of scarce medical manpower and to develop and utilize non-physician health personnel are necessary. On this point in particular, the United States has much to learn from the experience of other countries.

Third: Recent advances in information storage and retrieval systems, communications technology, transportation, medical and laboratory techniques, and instrumentation have immense potential for increasing the efficiency and economic feasibility

of large-scale health services. There is no fundamental difference between a two-way television monitor connecting Boston's Logan Airport and the Massachusetts General Hospital and a similar linkage between a rural health center in Uganda (or Montana) and its back-up facility. In each case, nonphysician personnel could diagnose and treat patients at the primary care level with "instant" consultative support. Similar two-way radio mechanisms have worked for years with the flying doctor services in Australia and East Africa and for the Public Health Service in Alaska. Although current trained manpower and cost constraints hamper widespread application of these concepts, new educational and automated screening techniques, diagnostic tools, and records systems are helping.

All societies have limited resources, but all are growing more aware of the need to set priorities in allocating available resources. In our own country, this growing awareness of the need for consumer participation in the process of designing and implementing the health care system is a healthy sign. If we can make health services more responsive to local needs and extend human dignity in the process, we can offer a contribution to developing countries above and beyond our technologic excellence.