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AGENCY FOR INTERNATIONAL DEVELOPMENT  
FOR  
211(b) INSTITUTIONAL SUPPORT GRANT  
  
DEPARTMENT OF INTERNATIONAL HEALTH  
JOHNS HOPKINS SCHOOL OF HYGIENE AND PUBLIC HEALTH  
BALTIMORE, MARYLAND

NOVEMBER, 1972

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STATISTICAL SUMMARY

Director:	Dr. Carl E. Taylor
Period of Grant:	July 1, 1968 to June 30, 1973
Amount of Grant:	\$1,800,000
Expenditures for Report Year:	\$315,254
Accumulated Expenditures:	\$1,246,114
Anticipated for next year:	\$367,600

NARRATIVE SUMMARY

The fourth year of the five year 211-d grant to Johns Hopkins has been particularly productive because most activities have been stabilized but there has continued to be an important sequence of new developments. We are increasingly conscious of the perhaps self-evident fact that developing institutional competence is not like putting up a building which will stay there with only moderate maintenance. Instead, competence is an active, living reality which requires constant change and adjustment to stress in order to maintain dynamic viability.

The most important development of the year has been the firm establishment of the Population Center as an active coordinating mechanism between departments. The major theme for this year's report is, therefore, interdepartmental collaboration. This is indicated particularly by the fact that in the main body of this report we record activities of both the Departments of International Health and Population Dynamics, rather than concentrating primarily on the Department of International Health which received most of the funding under the original terms of the grant. As in previous years, interdepartmental relationships and reports from other departments of the University which receive support from 211-d funds have been included in Section IV B. As pointed out in the body of the report, we have delayed until this time firming up the Population Center because of concern that it might reduce the independent involvement of various departments which already had strong population activities. It has become evident to all departments that it is now time to have an effective mechanism for communication, coordination of certain programs, and channeling of funds. Because of the careful movement to this organizational structure over the past several years we feel that we have stronger programs and better cooperation than if we had moved directly to developing a monolithic structure.

The most traumatic experience of the year for research activities in the Department of International Health has been negotiations with the Indian Government about the future of the Narangwal Rural Health Research Center. These have focussed particularly on what will happen to the Population Project, which has two more years of active field work funded and necessary before definitive findings emerge from the experimental design. Our project has been caught in the general cutback of AID sponsored activities in India. The visa of our Chief of Party, Dr. Colin McCord, was not renewed in June. We have for several months now been going through tortuous negotiations in trying to shift to WHO sponsorship. The most encouraging aspect of these negotiations has been that GOI officials have consistently maintained that they want Narangwal to continue "as it is."

They have put up one third of the local financing from the ICMR's own budget and the ICMR has officially "taken over" the Center. There is much talk about using Narangwal as the a base for developing demonstration projects in other states of India. Perhaps most gratifying through all of these difficult months has been the way in which the Indian project staff have maintained the field work in-spite of all of the uncertainties.

For several years a major theoretical interest of several members of the Department of International Health has been in studies of the inter-relationships between population, health and economic development. The Department of International Health has been working this year on a feasibility study for TA/Health on the relationship between health and economic development. Five research areas have been defined. A major search of the literature has been completed. Teams have visited a number of countries to explore the possibilities of in-depth field studies. A final report is being completed.

In parallel, we have been asked by WHO to undertake preparation of a similar background study on the interactions of health and population growth as they relate to economic development. This document is to be one of the background papers for the 1974 World Population Conference organized by the U.N. For this study also the major obligation is a literature search.

In other departments of the University there has been considerable turnover of faculty. Dr. Henry Mosley is well established as Chairman of the Department of Population Dynamics and Dr. Larry Ewing has become head of the Reproductive Physiology Unit in that Department. In the Department of Gynecology and Obstetrics in the Medical School, Dr. Ted King has become Chairman. He and other members of his Department have become deeply involved in AID supported research to develop new contraceptive, abortion and sterilization technology and to teach these methods to professionals from developing countries.

The teaching program in all departments continues to be strengthened as we build up research and conduct field service consultations. Students majoring in the Departments of International Health and Population Dynamics this past year numbered 89 . Important changes were made in the introductory course in these two departments. Two new courses have been developed by members of these two departments: one in economics and the other a general school course on contemporary health issues.

Next year is the final year of the (present) 211-d grant. In-spite of consistent efforts, we have not been able to generate other funding to take over this core support. The competence that has been developed cannot be maintained unless continuing funding is provided.

DETAILED REPORT

I. SUMMARY

This penultimate report on work done under the 211-d grant can start with a general evaluation of the main purpose of this type of funding in preparation for the final report next year. When AID set up the 211-d pattern of funding, it was considered an innovation in the previously troublesome pattern of relationships between U.S. technical assistance agencies and universities. There is no question that this has been one of the most productive and useful things that AID has done. Both the planning and implementation of this program has been eminently successful from the University's point of view and we would like to voice strong commendation of the AID officials who have participated in making this collaborative effort such a mutually beneficial enterprise.

We understand that part of the motivation for the 211-d mechanism from AID's point of view was dissatisfaction with the arrangements for ad hoc or intermittent involvement of U.S. academic institutions in foreign aid programs. It was found that just trying to "buy services off the shelf" did not work because of the special problems of developing and maintaining competence for international activities. The concept of institution building was rightly put into a long time frame. Several types of benefits have resulted.

A. A core faculty group was developed to respond to both continuing and intermittent needs.

1. Teaching: Overseas assistance programs can be only as good as the flow of professionals involved. To become a professional in international work requires both special training and field experience. Staff for AID and other agencies need to have technical competence and theoretical understanding to provide a base for the development of expertise from field experience. Judging from our applications there have never been more applicants for international service who are both highly motivated and already possessing excellent technical qualifications. In order to fulfill their potential they need training specifically directed toward those skills and areas of understanding needed for overseas work. Although the job market may seem precarious at this time there are new possibilities in population work for AID and for agencies such as UNFPA.

The core faculty group should themselves have had in depth overseas working experience as well as the formal academic background to set up an educational program which is both academically challenging and practically field oriented.

Related to the development of faculty competence is the synergistic factor of the improving quality of students. Informal communication networks among possible candidates operate effectively to provide self selection of the people with the greatest potential for effective careers. We have been particularly gratified by the high caliber of applicants attracted to our teaching program.

2. Research: The value of core support in backstopping research applies to all three time phases in project development.

a. For research to be funded from other sources, it is tremendously important to have a source of funding during the process of developing the project. It has proved impossible mechanically to build the costs for such preliminary work in as part of a project budget even if this were to be permitted by U.S. Government regulations. Core support is needed not only for the planning stages but also for the delicate and time consuming process of negotiations required before international projects can be started.

b. Backstopping of field work on a research project, once it actually starts, often requires more than can be provided in project funding. A few people may be actually responsible for the work but they draw on the knowledge and experience of all members of the department. Much of this support is informal but there is also much time devoted to formal discussions in staff meetings and seminars where crucial contributions are made and institutional strength demonstrated. These are the communication linkages which make team activities effective.

c. Core support also is essential during the final stages of a project. This applies not only to analysis and write-up which can often be funded from the project budget, but even more to the crucial stages of trying to get implementation of findings. This process of taking research to practical application often does not get accomplished because of the lack of this sort of core funding.

3. Service: The university is increasingly being called on directly to serve AID in field programs. Such activities include consultations in Washington but even more direct consultations in the field. Many of these are informal in the course of other visits. In addition, faculty members have served for periods of up to two months on direct assignment for AID missions.

In addition to the obvious contribution that is being made directly to AID in service programs, we would particularly like to stress the importance of the service contributions being made to multilateral agencies such as the U.N. and W.H.O. These agencies do not have funding that can be applied to general support of faculty. They are increasingly, however, making use of our faculty expertise. The rules of U.N. agencies prohibit

their making grants directly to American universities. They can pay only direct expenses such as travel and per diem. Under Section III-C we have provided a detailed listing of the number of such consultations made by the faculty during this past year. If we did not have core support for these faculty members it would not be possible for the multilateral agencies to get this help. We have calculated that our faculty during the past year contributed 5 man-months in such consultation to multilateral agencies, 16 manmonths to AID and 18 manmonths to other agencies.

B. Continuity of Faculty as it Contributes to the Qualitative Aspects of Competence

In earlier reports we have stressed the fact that the prime determinant of faculty competence is quality rather than quantity of work. Better quality also usually increases quantitative output, so that what is produced is not only better work but more work.

In the development of competence, continuity is important. There is a progressive learning together in a faculty team. Each project overseas adds to understanding and hopefully to wisdom. The cumulative exposure to stimulating students increases faculty depth. Obviously, just doing the same task or teaching over and over does not increase expertise. Instead, the process of doing varied tasks within a careful analytic framework can lead to the progressive resolution of the difficult and complex problems that underlie the population and health needs of less developed countries.

C. Development of the Population Center

Each of this series of annual reports under the 211-d grant has had a major theme. This year our theme is Interdepartmental Collaboration as represented by the considerable progress in developing the Hopkins Population Center.

The movement toward the Population Center has been progressive and should be viewed in an historical perspective. Much of the credit for this development can be traced directly to the flexible support and annual reviews that have been such a dominant feature of the 211-d pattern of funding.

During the past decade, when population concerns have moved rapidly to the forefront of high priority teaching and research, Johns Hopkins University has been in a somewhat different situation from other institutions. At the time when funding agencies were originally pressing for Hopkins to develop a monolithic population center, we resisted. It seemed to us that a population center which brought all activities together would perhaps be appropriate in an institution that was just starting to develop a new emphasis on population work. At Hopkins there was already so much going on in so many departments that there was resistance to being absorbed by a single structure. This

was not just because of vested interest, but rather was because certain individuals had continuing commitments for field work or teaching. There was concern that administrative reorganization would lead to a reduction of overall involvement.

Instead, over the past several years a number of departments have continued their independent development of programs. Because of the obvious need for communication to prevent duplication and overlapping, we have had both school and university joint committees and abundant informal contact. Even then it has occasionally been embarrassing to find out what a Hopkins colleague has been doing in the population field only while attending a conference somewhere else.

Now, a strong feeling has evolved among the various groups at Hopkins working on population activities that the time has come for a more formal structure to bring together the various interests. The Population Center is now a point of cohesion that is wanted by all of the participating departments rather than a formal framework being imposed on them. It is now viewed as an effective way of strengthening the programs in individual departments. Obviously it can help to channel funds to different parts of the University. It should provide for better communication between units. There should also be more chance for better interdepartmental collaboration in teaching and especially in the handling of doctoral students and residents. The Population Center mechanism can also help collaboration in research of an interdisciplinary nature. Finally, we should be better able to respond to service requests.

The 211-d funding has contributed to the development of the Population Center through its provision for channeling one third of the population funds to various departments other than International Health. Particularly important has been the flexible core funding which has made it possible to support the faculty strength that normally is taken for granted when funding is provided for particular projects. The primary emphasis on building institutional competence within this five year time span has provided stable funding over a sufficiently long period of time to permit natural working relationships to develop. In a previous report we stressed the concept that a major requirement for developing quality work as an interdisciplinary team is the need for working together long enough to learn how to collaborate effectively. Even more than in research and service, the importance of a quality emphasis in teaching is becoming increasingly apparent. The best students are attracted to a place where they sense the ferment of quality work. Further, they respect teachers who know by personal experience both the practical and theoretical implications of a complex issue and can project this knowledge in seminars. From a sound theoretical base the teacher must be able to draw on pragmatic perspectives from his own in-depth field experience.

## II. 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. ACCOMPLISHMENTS

#### A. Teaching

##### 1. General Statement

In keeping with the general theme of increased collaboration between departments, this presentation on development of teaching competence this year includes not only the teaching activities of the Department of International Health but also some of the work of the Department of Population Dynamics. In addition, under Section IV-B dealing with university activities, there are separate descriptions of work done under the 211-d grant in the Departments of Biostatistics, Behavioral Sciences and Gynecology and Obstetrics.

No major change in the teaching program has occurred during this year but there continues to be active involvement of all faculty members in improving what we are doing. Previous annual reports have described the general educational philosophy and specific course structure. The very heavy teaching schedule in both the Departments of International Health and Population Dynamics, as well as other departments of the University, require considerable effort to maintain.

A great deal of time and effort has gone into updating the reading material for the introductory course in International Health. Each year we have accumulated additional reading material for the students. It has become necessary, therefore, to have a thorough pruning with substitution of new material and rewriting of many of the basic documents. In general, we have required our faculty to put the material that they would normally give in a lecture into a mimeographed handout. The class then meets in four discussion groups with faculty seminar leaders. By concentrating the discussions on the material from the handouts prepared by the faculty, supplemented by additional reading from the literature, these seminars can start at the point where most teaching by formal lecture leaves off. What has evolved from this progressive updating of mimeographed material is a loose-leaf collection about two inches thick, which is in essence a text-book of International Health under progressive revision.

In the course on the Teaching of Community Medicine a pattern has now developed in which groups of students undertake the teaching of the basic course content to the rest of the class. Groups work up exercises on various topics included in the content of

community medicine for developing countries or in the application of educational science. Innovative teaching methods are learned through practical experience in these exercises. Among the subjects considered is the introduction of family planning into community medicine teaching. The course on International Health 2 continues to lead to practical project development. The topics are listed in Section III. Many of these projects are now being actively implemented.

Again, the greatest concentration of teaching in International Health is in connection with the Planners Course. One of the important developments has been that over a series of years we have now had 10 or more planners come from a number of countries, e.g., Brazil, Thailand, Iran, Indonesia, etc. Once this many planners have gone through a systematic course, a critical mass of expertise develops so that in most of these countries trained planners are staffing the planning unit. They are in educational institutions such as the Teheran School of Pub.Hea. and also some regional health officials. The main innovation that is being introduced into the Planners Course is to work toward having a separate and parallel group in population planning.

In the Department of Population Dynamics some shifts in the teaching program have begun. The new leadership includes not only Dr. Henry Moeley as Chairman of the Department, but also Dr. Larry Ewing as head of the Reproductive Physiology Unit. During the past year there have been five new appointments. A major revision of the introductory course in Population Dynamics is being started. Similarly, the course in Reproductive Physiology will be changed. A group of young epidemiologists are being attracted into the field.

A new course was offered this year entitled Elements of Economics. This course, taught by Dr. Alan Sorkin of the Department of International Health and Dr. Ismail Sirageldin of the Department of Population Dynamics is intended to provide a firm foundation in basic economics. This is especially important for those students who plan to take the courses "Health Economics" and "Economics of Population" in the third and fourth quarters.

2. Basic Courses  
(faculty receiving partial support from 211-d underlined)

International Health 1. Introduction to International Health

4 units - 1st Quarter - 78 students

Dr. T. Baker, Dr. C. Taylor, Dr. D. Carlson, Dr. N. Cunningham,  
Dr. G. Graham, Dr. A. Horwitz, Dr. L. Howard, Dr. R. Ravenholt,  
Dr. A. Sorkin, Dr. E. Stebbins, Dr. R. Wright, Dr. G. Saroukhanian,  
Dr. I. Maddocks, Dr. T. Fulop, Dr. A. Waterston

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

4 units - 3rd Quarter - 11 students

Dr. C. Taylor, Dr. T. Baker, Dr. W. Reinke, Dr. J. Newman

International Health 3. Quantitative Decision Procedures

(jointly with Dept. of Biostatistics)

4 units - 3rd Quarter - 41 students

Dr. W. Reinke

International Health 4. Planned Change

(jointly with Dept. of Behavioral Science)

3 units - 4th Quarter - 59 students

Dr. P. White, Dr. S. Levine, Dr. C. Flagle, Dr. W. Mandell

International Health 5. Comprehensive Health Planning

(jointly with Dept. of Public Hea. Administration)

6 units - 4th Quarter - 37 students

Dr. E. Stebbins, Dr. C. Flagle, Dr. W. Reinke, Dr. V. Navarro  
Dr. J. Bryant, Dr. C. Taylor, Dr. T. Baker, Dr. J. Newman  
Dr. C. DeSweemer, Dr. R. Wright

International Health 6. Clinical, Experimental, and Epidemiological  
Aspects of Selected Infectious Diseases

(jointly with Dept. of Epidemiology)

4 units - 4th Quarter - 10 students

Dr. R. Anderson, Dr. D. Thomas, Dr. K. Kawata, Dr. R. Ward,  
Dr. W. Bancroft, Dr. J. Ganley, Dr. L. Edwards, Dr. Schad,  
Dr. Kochar, Dr. E. Sadun, Dr. H. Fischman, Dr. H. Mosley,  
Dr. W. Price

International Health 7. Family Planning Administration (jointly with Pop. Dynamics)

4 units - 3rd Quarter - 36 students

Dr. L.P. Chow, Dr. R. Rider, Dr. C. Taylor, Dr. R. Wright

International Health 8. Area and Language Study

(not given this year)

- International Health 9. Teaching of Community Medicine in Medical Schools  
4 units - 3rd Quarter - 30 students  
Dr. R. Wright, Dr. J. Williamson, Dr. C. Taylor, Dr. E. Grzegorzewski,  
Dr. L. Walder, Dr. T. Baker
- International Health 10. Economics of Health  
3 units - 3rd Quarter - 35 students  
Dr. A. Sorkin, Dr. A. Alexander
- International Health 11. Clinical Aspects of Diseases of Global Significance  
(jointly with Dept. of Pathobiology)  
Dr. T. Simpson, Dr. W. Hillis
- International Health 12. Elements of Economics (jointly with Pop. Dynamics)  
3 units - 2nd Quarter - 18 students  
Dr. A. Sorkin, Dr. I. Sirageldin
- International Health 13. Basic Techniques for Health Planning  
4 units - 4th Quarter - 58 students  
Dr. W. Reinke, Dr. M. King, Dr. C. Taylor, Dr. H. Mosley,  
Dr. A. Waterston, Dr. T. Baker, Dr. P. Ruderman, Dr. J. Newman
- International Health 24. Methods in Health Services Planning  
(jointly with Dept. of Medical Care and Hospitals)  
4 units - 4th Quarter -  
Dr. V. Navarro
- Health Planning and Administration - Joint Departmental Seminar series  
(Departments of International Health, Public Health Administration,  
and Medical Care and Hospitals - throughout the year. List  
of seminars - Section III-A-3.)
- Population Dynamics 1. Introduction to Population Dynamics  
4 units - 2nd Quarter - 64 students  
Dr. H. Mosley, Dr. L. Chow, Dr. P. Harper, Dr. I. Sirageldin, Dr. R. Rider
- Population Dynamics 2. Introduction to Physiology and Methods of Fertility  
and Regulation  
3 units - 2nd Quarter - 22 students  
Dr. Dr. J. Biggers, Dr. A. Schuetz, Dr. G. Marcus
- Population Dynamics 3. Population Growth: Interrelations, Problems and  
Policies  
3 units - 4th Quarter - 16 students  
Dr. J. Kantner
- Population Dynamics 4. Public Health Statistics  
6 units - 3rd Quarter - 69 students  
Dr. M. Tayback and Dr. R. Rider

- Population Dynamics 6. Introduction to Demographic Methods  
4 units - 3rd Quarter - 22 students  
Dr. M. Zelnik
- Population Dynamics 7. Family Planning Administration  
(jointly with International Health)
- Population Dynamics 8. Elements of Economics  
(jointly with International Health)
- Population Dynamics 10. Population Studies  
  
4 units - 1st and 2nd Quarters - 17 students  
Dr. J. Kantner
- Population Dynamics 11. Techniques of Estimation  
4 units - 4th Quarter - 19 students  
Dr. M. Zelnik
- Population Dynamics 12. Stochastic Models for Birth, Death and Illness  
Processes  
3 units - 4th Quarter - 6 students  
Dr. H. Abbey (jointly with Dept. of Biostatistics)
- Population Dynamics 13. The Economics of Population and Its Planning  
3 units - 3rd and 4th Quarters - 10 students  
Dr. I. Sirageldin
- Population Dynamics 14. Population Mathematics  
3 units - 3rd and 4th Quarters - 1 student  
Dr. Z. Sykes
- Population Dynamics 15. Research Seminar in Population Dynamics  
2 units - 2nd, 3rd and 4th Quarters - 26 students  
Dr. H. Mosley, Dr. I. Sirageldin, Dr. J. Kantner, Dr. M. Zelnik
- Population Dynamics 20. Special Studies and Research  
37 students

3. Seminars

Health Planning and Administration-Joint Departmental Seminar Series  
(International Health, Public Hea. Admin., Medical Care and Hospitals)

- September 16, 1971 Mr. William Hiscock, Assistant Director, Maryland Regional Planning Council, "Background of Comprehensive Health Planning."
- September 23, 1971 \*Mr. David Danielson, Project Director, Maryland Health Maintenance Committee, "Building the Health Maintenance Organization in an Urban Setting."
- September 30, 1971 Dr. Edward Davens, Regional Medical Program for Maryland, "Interrelationship Between Planning Agencies at the State Level."
- October 7, 1971 Dr. Frederick Nevins, Associate Director, Maryland Comprehensive Health Planning Agency, "Maryland's Health Facilities Certification of Need Program."
- October 14, 1971 \*Dr. Joshua Cohen, Chief of Medical Care Services (Community Health) WHO, Geneva, "Medical Care and Administration Planning - An International Perspective."
- October 21, 1971 \*Dr. Robert Logan, Professor of Medical Care, London School of Hygiene and Tropical Medicine, "Teaching of Health Services Administration."
- October 28, 1971 \*Dr. Ian Maddocks, Dean, Papua Medical College, "Medical College Awareness of Local Health Needs."
- November 4, 1971 \*Dr. Odin Anderson, Associate Director, Health Research Center, University of Chicago, "Health Planning in the United Kingdom and Sweden."
- November 11, 1971 \*Dr. George Silver, Professor of Community Health, Yale University Medical School, "Community Participation in Health Planning."
- November 18, 1971 \*Dr. James L. Craig, Director, Medical Services, Tennessee Valley Authority, "Development of Regionalized Health Services for a Dispersed Population."
- December 2, 1971 \*Mr. Clarence Burns, President, East Baltimore Community Corporation & City Councilman Elect, "The Development of a Medical Care Program for the East Baltimore Community."
- December 9, 1971 \*Dr. Russell Nelson, President, Johns Hopkins Hospital, "The Hospital In Comprehensive Health Planning."
- December 16, 1971 \*Dr. Edwin Crosby, Executive Director, The American Hospital Association, "The American Hospital Association Planning for Comprehensive Health Services."

\*Visiting Lecturer

Health Planning and Administration Seminars (continued)

- January 6, 1972 \*Mr. Carl Speckman, Executive Director, Planned Parenthood of Maryland, "Planning and Administration in a Voluntary Health Agency."
- January 13, 1972 \*Senator J. Glenn Beall, U.S. Senate, "Federal Planning for Comprehensive Health Services."
- January 20, 1972 \*Dr. Harry J. Becker, Professor, Department of Community Health, Albert Einstein College of Medicine of Yeshiva University, "An Appraisal of the National Insurance Scene in the U.S."
- January 27, 1972 \*Dr. Z. Erik Farag, Director, Comprehensive Health Planning Regional Office, No. 3, "New Developments in Comprehensive Health Planning."
- February 3, 1972 \*Dr. Frederick H. Glade, Jr., Director of Division of Business, Evening College, Johns Hopkins University, "Graduate Education in Administrative Science."
- February 10, 1972 \*Mr. Gerald Riso, Deputy Administrator for Development Health Services and Mental Health Administration, "Role of HSMHA in Health Systems Development and Planning."
- February 17, 1972 Dr. Eugene Guthrie, Executive Director, Maryland Comprehensive Health Planning Agency, "The Meaning and Importance of the American Association on Comprehensive Health Planning."
- March 2, 1972 \*Mr. Allen S. Ginsburg, New York City Rand Institute, "Systems Analysis of Health Problems in New York."
- March 9, 1972 \*Mr. Albert Waterston, Economist to the International Development Bank, "New Perspectives in Development Planning."
- March 16, 1972 \*Dr. Arthur Levine, 12 East 72nd Street, New York, New York, "Federal Planning in the Health Sector."
- March 23, 1972 \*Mr. G. Rick O'Shea, Sr. Vice-President, Monumental Life Insurance Company & Chairman of the Health Care Committee for Maryland of the Health Insurance Industry, "Proposals for National Health Care of the Life Insurance Association of America."

\*Visiting Lecturer

Health Planning and Administration Seminars (continued)

- March 30, 1972 \*Dr. Andre Delbecq, Professor of Management in the School of Business, University of Wisconsin, "Program Planning."
- April 6, 1972 \*Dr. Abel Wolman, Professor Emeritus, Sanitary Engineering Consultant, World Health Organization, "Political Implications in Health Planning."
- April 13, 1972 \*Dr. Alexander Cacklin, Assistant Director General, WHO, European Region, "Health Planning Around the World."
- April 20, 1972 \*Dr. Hollis Ingraham, Commissioner of Health for New York State, "Comprehensive Health Planning in New York State."
- April 27, 1972 \*Dr. Peter Ruderman, Professor of Health Economics, University of Toronto, School of Hygiene and Public Health, "Economics and Health Planning."
- May 4, 1972 \*Dr. John Frye, General Practitioner in England, "Planning for Primary Health Care in Several Countries."
- May 11, 1972 \*Dr. Paul Densen, Director of the Center for Community Health Studies, Harvard University, "No University Should Make with Action."
- May 18, 1972 \*Dr. Maurice King, Professor, Community Medicine, University of Zambia, "Politics in International Health."

International Health Seminars

- Oct. 6, 1971 \*Dr. Mrs. Rajalakshmi, "Formulation and Evaluation of Low Cost Meals From Locally Available Resources for Preschool Children."
- Dec. 3, 1971 "Paramedical Health Workers in Africa"
- Dec. 10, 1971 "The Narangwal Project in India"
- Dec. 17, 1971 "Job Opportunities in International Health", Dr. V. Chaney
- Jan. 7, 1972 Dr. David Paige, Dr. Angel Cordano, "Malnutrition in Latin America."
- Jan. 14, 1972 Miss Chan, "Medical Education in China"

Population Dynamics Seminars

- |                |  |   |
|----------------|--|---|
| Nov. 17, 1971  | Is There a Simple Least Common Denominator for Family Planning Program Evaluation? | Dr. Henry Gelfand, Chief Evaluation Branch, Office of Population, A.I.D., Washington, D. C.         |
| Dec. 8, 1971   | The Commission on Population Growth and the American Future                        | Dr. Margaret Bright, Prof Department of Behavioral Science, JHU                                     |
| Jan. 5, 1972   | Family Size and Measures of Income and Welfare                                     | Dr. Ismail Sirageldin, Department of Population Dynamics, JHU                                       |
| Jan. 19, 1972  | The Politics of Population Policy  | Mr. Tom Lyons, Deputy Chi Analysis and Evaluation D Office of Population, A.I.D., Washington, D. C. |
| Feb. 2, 1972   | The Role of the UNFPA  | Dr. John Keppel, Chief Operations Staff, United Nations, New York                                   |
| Feb. 16, 1972  | Five Year Plan on Family Planning Services and Population Research Programs        | Dr. Frank Beckles, Direct National Center for Famil Planning Services, Dept. H.E.W., Rockville, Md. |
| March 15, 1972 | An Assessment of Family Planning Programs  | Mr. W. Parker Mauldin, Vice President, Population Council, New Y                                    |
| March 22, 1972 | International IUD Testing and Clinic Fertility Measurement                         | Dr. R. P. Bernard, Direct of Field Epidemiology, Un ersity of North Carolina Chapel Hill, N.C.      |
| April 12, 1972 | Programs Toward a Federal Population Policy  | Dr. Louis Hellman, Depart of H.E.W., Office of Popu tion Affairs, Washington,                       |

Visiting Lecturers- Population Dynamics

1. Dr. Claude Desjardins, Associate Professor, Department of Physiology, Oklahoma State University, Stillwater, Oklahoma.
2. Dr. Larry Ewing, Professor, Department of Physiology, Oklahoma State University, Stillwater, Oklahoma.
3. Dr. Jack Gorski, Professor of Physiology, University of Illinois.
4. Dr. Gertrude Hinsch, Institute of Molecular Evolution, University of Miami, Coral Gables, Florida.
5. Dr. Alan Keller, Population Consultant, Fundacion Para Estudios de la Poblacion, Mexico.
6. Mr. Roy Lucas, Lawyer, Population Law Institute, New York.
7. Dr. Edris Rice-Wray, Director, Family Planning, Mexico City, Mexico.

4. Doctoral Candidates - Department of International Health 1971-72

Andrews, Sunny, M.P.H.  
DeSweemer, Cecile  
Gorosh, M.  
Kielmann, A.

Residents

LeBow, R.  
Newkirk, D.  
Rutherford, R.  
Solter, S.  
Hart, R.

Master of Public Health

Baertl, J.  
Chaney, V.  
Coleman  
Cordano, A.  
Dixon, K.  
DuPuis  
Elio-Calvo  
Fountain, D.  
Jutras, M.  
Morrisey, A.  
Sich, D.  
Srouji, E.  
Takulia, H.  
Takulia, S.  
Yapchiongco  
Yoder, P.  
Ziegler, H.

Senior Health Planners - Certificate

Boonthai, C.  
Canton, J.  
Desawadi, P.  
Howell, J.  
Khosrowshahi, S.  
Kingsolver, L.  
Merriam, W.  
Meyer-Lie, A.  
Pezeshkian, G.  
Plianbangchang, S.  
Pongpipat, S.  
Pugh, C.  
Sebina, D.  
Vassilopoulos, V.  
Visalvethaya, P.  
Watson, R.

Special Student Studies - International Health 2

Dixon, K., "Health Surveillance in a Frontier Area in Brazil."

Fountain, D., "Training Primary Health Professionals in Africa in Effective Patient Management."

Golda, E.A., "The Functional Evaluation of a Family Planning Data System." (for an under-developed country)

Hart, R., "Physicians' Attitudes Toward Rural Health Practice in Tanzania."

Jutras, M., "A Field Practice Area for Public Health Activities in An Giang Province Viet Nam."

Rovin, L., "Health Services of the Territory of Papua and New Guinea."

Schaefer, R., "An Applied Health Services Program, with Emphasis on Target Population of Women and Children 0-36 Months of Age, in Rural Villages of the Republic of Korea."

Sich, D., "Introducing Family Health Workers into Rural Korea."

Srouji, E., "Early Oral Non-instrumental Hydration in Diarrhea; Its Effect Measured by Change in Utilization of Hydration Units in a Teaching Rural Community Health Center, Lebanon - A Research Project."

Takulia, H., "Structure and Process of Health Planning in Punjab: A Case Study."

Yoder, P., "A Regional Health Program for Awash Valley Ethiopia: A Case Study."

Other Studies

Andrews, S., "Indigenous Medical Practitioners for Promoting Family Planning in South India"

Cunningham, N., "Auxiliary Based Child Health Studies In Rural Nigeria."

DeSweemer, C., "Nutritional Factors in Child Growth - Punjab."

Gorosh, M., "Systems Model for Manpower and Organizational Dimensions of Family Planning/Population Control Programs."

Kielmann, A., "Interactions of Nutrition and Infection."

Elliston (Orrell), E., "Development of Specific Antigens of M. Leprae for Use in Epidemiological Studies."

Departmental Degree Candidates - Department of Population Dynamics

1. Master of Public Health

Apibunyopas, K.  
Berkowitz, R.  
Gomez, A.  
Jarrett, D.  
Jefferson, L.  
Laoda, P.  
Melton, R.  
Naghibi, P.  
Rayyis, A.  
Shams, M.  
Shelton, J.

5. Doctor of Philosophy

Norris, D.  
Rukanuddin, A.

6. Post-Doctoral Research Fellow

Bellve, A.  
Cho, W.  
Olds, P.  
Ozias, B.  
Snyder, B.

2. Doctor of Public Health

Bracewell, M.  
DeVries, J.  
Fischman, S.  
Khan, A.  
Kim, M.  
Zafir, S.

3. Master of Science

Chaudhury, R.  
Chen, K.  
Cross, M.  
Destler, H.  
Einhorn, R.  
Strobino, D.  
Sweitzer, J.  
Wolf, W.  
Ziegler, P.

4. Doctor of Science

Agyei, W.  
Alam, I.  
Alam, Z.  
Fisher, A.  
Hopkins, S.  
Liu, P.  
Moen, E.  
Nair, K.  
Ogum, G.  
Shah, M.  
Shah, N.  
Su, I.  
Westfall, J.  
Zablan, Z.

## 5. Preparation for International Health I

Following a critical review of International Health I and suggestions from last year's students, a number of changes have been made. The course was presented in five parts, with most sessions using group discussion by students of selected readings and prior field experience:

- a. Different approaches to health delivery
- b. Comparative studies of the structure of the health team
- c. Agents of change
- d. International health agencies
- e. Factors affecting health

All readings were reviewed and updated and several were rewritten. The traditional initial orientation test was organized under the four major objectives of the course:

- a. Comparison of the major features of different approaches to health delivery systems and their advantages and disadvantages within a given social system.
- b. Comparison of the approximate magnitude of the health problems and resources in countries at different levels of technological development.
- c. Identification of the functions and contributions of international agencies of health.
- d. Critical analysis of the major elements of the following issues in international health: regionalization, auxiliary personnel, health and development, family planning and health services, and the process of planned change.

To obtain insight into the incongruities of present health center organization and the implications of how paramedicals and auxiliaries are used in rural health services in developing countries a "game" simulating such services in South East Asia was introduced into the course. This game was developed by Dr. John Bryant and we are fortunate in having one of the few sets of materials that are available to use for our classes.

## 6. Health Planners Program

The teaching of health planning has been an important function of the Department of International Health for the past nine years. During that period the program has gained an international reputation with the result that the capstone courses offered in the fourth quarter (April-May 1972) attracted approximately 75 students, including 16 senior administrators who came to the School from 7 countries solely for this two-month period of training.

The increasing attention which the subject of planning has received in recent years has caused us to broaden and expand our program substantially. In 1969 it came officially under the sponsorship of the Departments of International Health, Public Health Administration, and Medical Care, with close informal ties with Population Dynamics, Behavioral Sciences, and other groups. Although the program had been multi-disciplinary from the outset, this action formally cemented the inter-departmental relationships that had grown up.

At about the same time a new segment was introduced in the program to permit interested administrators to come for four months instead of two. The first half of the expanded program is devoted to topics in management science and operations research, thereby providing the participants with a firm grasp of the methods of quantitative analysis that contribute to more rational planning.

The interrelationship between health and population planning has always been an important concern in the program, but it has now become apparent to us that the subject of population planning deserves attention in its own right. For this reason faculty in the Departments of International Health and Population Dynamics are now working together to modify the curriculum further so as to provide students with particular interests in family planning with: (1) an integrated body of management methods specifically oriented to their needs and (2) to engage in a workshop experience aimed at the planning of family planning programs.

As a result of the teaching and field experience of the faculty of this program we published in March 1972 a book entitled, "Health Planning: Qualitative Aspects and Quantitative Techniques," which is already being used widely by universities and planning agencies throughout the world. The book is edited by Dr. Reinke and a major chapter on Population Programs has been written by Dr. Taylor.

#### 7. Data Bank

During the course of this year, considerable progress has been registered toward the incorporation of all Departmental data holdings, irrespective of storage mode, into an ongoing information system, designed to facilitate both the research efforts of faculty and students, and the teaching program in comprehensive health planning.

A relatively simple cataloging scheme has been devised, oriented primarily toward data needs for health planning; this has been applied to the existing 2500 library and vertical file holdings of the Department. Separate files have been organized for many of those countries in which the Department has had major research interests: India, Nigeria, Taiwan, Peru, Chile, Puerto Rico -- plus a general file for other selected areas

and one for the United States. All holdings have been evaluated and in so far as possible obsolete data have been replaced and items of doubtful validity culled. Procedures for keeping these files current have been instituted, and both operators' and users' manuals prepared.

The new system received a severe test during the senior health planners course (March-June, 1972), when it was used intensively by upwards of seventy senior planners. Their evaluation was gratifying; few reported any difficulty in using the system to locate the data they sought. Some criticism was directed toward the adequacy of the data themselves; steps intended to improve both the timeliness and comprehensiveness of information are incorporated in the updating procedures, and a special effort will be made during the coming year to cover significant omissions. For the immediate future much of the data will continue to be stored in the form in which it is published; for some research applications it will be advisable to transfer selected items to machine readable form, and procedures for this transfer will be under consideration during the coming year.

Although several computerized data sets are now being utilized in research by members of the Department, as yet only the 1970 Census data for Maryland has been fully incorporated into the general information system. Work continues toward making others of these data sets, and especially those from India, more readily accessible. As these data become available for wider use, entries for them too will be added to the general catalogue, with appropriate indication of storage mode.

Ultimately it is intended that the Departmental data bank, both printed materials and computerized data sets, will become an integral part of the Information Unit of the Hopkins Population Center. A grant proposal has been submitted to NIH. When operational, this unit will consist of both a library resource for printed materials, and a data archives for computerized data sets. Holdings in both storage modes will be integrated into a common indexing system permitting rapid searching and efficient retrieval of bibliographic listings and citations to relevant data sets.

Trained staff in both the library and data archives will assist users in the location of information; programming assistance in accessing computerized data will be provided by the Population Center's Data Processing Unit. Although not indicated for the immediate future, full implementation of the information system will eventually call for ready access to a fairly sophisticated terminal capability, one with both a tape drive and a high speed printer as well as keyboard, from which the user can command the entire University computing system which now consists of three widely dispersed facilities.

Meanwhile, a wide variety of retrieval and analytical routines are available at one or more of the three Computing facilities, and the

Department's competent programming and systems staff make every effort to facilitate their use. Limited use may be made of commercial facilities by means of a keyboard terminal rented by the Department. Preparation of a Departmental computer user's manual is being considered for early in 1973 in conjunction with a seminar in research methods, to help to free each student and faculty researcher from close dependence upon the programming staff, except for specialized, non-routine operations.

#### 8. Contemporary Health Issues

A two-credit seminar course in Contemporary Health Issues was developed by a student-faculty committee and presented in the 4th quarter to an enrolled group of 22 students and as many or more student and faculty auditors at each session. It was primarily an intramural effort but did include several outside discussants. Plans are being formulated to repeat the course in 1973. The issues chosen by a faculty-student committee for discussion were:

- a. Where and how do we strike the balance between man and his ecology? Report on the President's Commission on Population and the American Future.
- b. Which will produce the greatest health benefits: Efforts to change human behavior or efforts to increase and improve our protective and restorative technologies?
- c. The politics of health care.
- d. What are the health implications of the counter-cultural revolution?
- e. Behavioral and technical problems in injury control - how safe do we want to be?
- f. Philosophical conundrums of community medicine:
  - The right to life control
  - The right to access to care
  - The right to death with dignity
- g. Issues in health care delivery:
  - Pros and cons of integrating preventive and curative programs
  - Quality control and professional freedom
  - The division of labor and decision making among health care professionals
  - Pros and cons of indentured labor for health professionals

#### 9. Health Auxiliaries

The Department has continued its interest in health and family planning manpower. The greatest shortages and unresolved problems are issues related to auxiliary personnel and their preparation. We are attempting to develop a new academic emphasis analyzing their use and training and to conduct field trials of innovative programs. With auxiliary training, even more than professional education, the primary concern must be to evolve programs adapted to local conditions. 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 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.

After three years of experience in training and employing the auxiliary nurse midwives we have now undertaken to publish training manuals. These manuals are based on the Rural Health Research Center experiment but include some adaptations for broader application. We hope to bring out in 1972 an experimental edition of two child care manuals. The material selected is directly based on our experience defining the responsibilities auxiliaries can carry in the primary care of children. One child care manual covers preventive and curative aspects, the other covers growth and nutrition care. Both are specifically directed to rural services. The Indian Government and W.H.O. are putting in a great effort to expand auxiliary nurse midwife training. We hope the Rural Health Research Center manuals will contribute to this timely program.

The Family Health Nurse Training Project in Nigeria has continued in the pilot stage partly because of their civil war and its aftermath and partly because of the desire of the Ministry of Health for as much emphasis on young child saving as on child spacing. This problem apparently has been resolved to the satisfaction of the Government of Nigeria and AID/Nigeria but proper clearances have yet to be signed by the Government, by AID/Nigeria and by AID/Washington. In its present form the project proposes at the onset to train senior nurses from the several states who will return to their states to develop training courses for large numbers of primary care agents. Johns Hopkins has been requested to act as technical consultant to the project.

#### 10. New Horizons in Nurse-Midwifery

A major undertaking of nurse faculty in the Department of International Health has been planning for the 16th Triennial Congress of the International Confederation of Midwives (ICM) to be held in Washington, D.C., October 29 - November 3, 1972.

In keeping with the Congress' educational purposes and theme, "New Horizons for Midwifery," its program focusses on broadening the perspectives and functions of midwives and nurse-midwives. A majority of papers to be presented at the Congress' general sessions will be concerned with family planning and child care. The varied points of view expressed will represent midwifery practice and education from every continent, other health

disciplines, and several international agencies. To encourage informal exchange amongst participants as well as productive discussion of topics presented in general session, several "small" discussion groups are scheduled with leadership from American nurse-midwives who are experienced group leaders.

In order to encourage participation of midwives in key positions for development in countries of Asia, Latin America, and Africa which are not members of the ICM, support has been obtained from the UN, PAHO, AID, and IPPF. These groups have capitalized on the Congress by arranging special workshops and seminars to be held in the various parts of the U.S.A. before and after the Congress. Generous support has also been provided by DHEW through the National Center for Family Planning and the Division of Maternal and Child Health because of their interest in promoting nurse-midwifery in the development of MCH and family planning services in the U.S.A.

About 3,000 midwives, nurse-midwives and other health professionals are expected to attend from over 50 countries. They are being hosted by the American College of Nurse-Midwives (ACNM) which is taking primary responsibility for preparations. This has involved not only planning with the international groups involved but also getting our own house in order. It has amounted to a kind of "great leap forward" for the relatively small ACNM. Recognizing that the Congress provides an unusual occasion for publicity, to bring public as well as professional recognition and support for one of the "new careers" in nursing, ACNM members have worked hard to establish nurse-midwifery practice in the U.S.A. There is now 1) a sound National Certification Examination which provides for recognition of foreign trained nurse-midwives as well as American trained, 2) a well-developed procedure for approval of nurse-midwifery educational programs, 3) a publication providing guidelines for the establishment of nurse-midwifery services, 4) a Foundation for supporting special projects and studies relating to the development of nurse-midwifery with special reference to improving services to mothers and babies.

As Chairman of the Program Committee for the ICM Congress, Alice Forman, Assistant Professor, has had an important role in planning. In her position as Chairman of the ACNM's Legislation Committee, she has contributed to development of ACNM's programs in carrying out a survey of legislation pertaining to nurse-midwifery in the U.S.A.

Dolores Laliberte, Research Associate, will be participating in the program of the Congress. With her bilingual skills (French and English) and her two years of field work as Chief Public Health Nurse-Midwife in the Department's Rural Health Research Center at Narangwal, Punjab, India, she will provide important "bridges" between the cultures represented at the Congress.

One of the unique aspects of this ICM Congress is the project which it is launching. This year is the beginning of an ICM/USAID project designed to promote training in family planning in the midwifery curricula around the world. ICM has been granted \$1.3 million by AID for this project including its launching at the Congress.

### III. ACCOMPLISHMENTS - cont'd

#### B. General Research

Two general patterns of research are developing. In a few subject areas, a broad based approach to a particular problem is being studied on a comparative basis in several countries. Secondly, there are an increasing number of focussed projects in particular countries. Most of the latter group of projects are described in detail under section V, where in accordance with the guidelines we have attempted to describe particular contributions being made in less developed countries as a result of 211-d support. In this section an effort is made to present the material that has broader implications internationally.

An example of the University's progressive movement toward developing competence here which provides new procedures and methods for overseas application are the intensive efforts in the Department of Gynecology and Obstetrics in the Medical School to develop methods of sterilization and abortion. This involves several different groups within the department and is receiving separate funding from AID.

In Section V there is a lengthy discussion of developments in the Narangwal Project during this past year. This continues to be the largest research effort of the Department of International Health. Political complications have jeopardized the whole activity but due to the faithfulness of the field staff, there has been minimal noticeable deterioration of work. This represents the major activity over the last several years in attempting to develop ways of integrating family planning and health services at the village level. For internal political reasons more and more countries are making the policy decision to integrate services and they are eager for help in working out field methods. We have in our report attempted to clear up some of the misunderstandings that have arisen about the rationale for the Narangwal project. We can make an increasingly convincing case that family planning is important because in itself it represents a major means of improving maternal and child health. At Narangwal we found that there is a hard core of malnutrition and child infection which becomes progressively more difficult to reduce since it seems apparent that we are more concerned about the health of these children than the parents are. They find themselves so burdened by large families that they cannot provide the attention needed. Our statistics and field findings show this problem to be particularly severe for girl babies in large families.

The whole effort to develop new approaches to providing family planning with health services is being forced by political realities in countries where family planning provided alone has created resentment or concern among minorities. A basic principle that underlies our work is that we must define the minimum package of health services that is necessary to make family planning acceptable. This leads to a lean configuration of activities that can be provided by village level auxiliaries and the

development of a whole framework of standing orders and manuals for these auxiliaries. We have learned a great deal about this complex problem out of our experience at Narangwal and are now ready to apply what we have learned in other situations.

As countries develop increasing competence and sophistication among their own research personnel, we find that our projects are becoming increasingly collaborative. This makes it possible to move into relationships of the first kind mentioned at the beginning of this section where we coordinate international comparative studies with much of the work being done by local scientists. A primary feature of this type of collaborative research is that in addition to the benefits coming from the direct data gathering, we try to build up local competence and momentum for continuing applied research. In all of our research we are particularly concerned about practical prospects for implementing our findings and have come to feel that a research project is not really over for several years after field work stops while maximum efforts are being made to incorporate methods, understanding and practical procedures directly into government services.

In accordance with our previous instructions for these 211-d reports, in all descriptions of specific projects which follow we have listed the names of faculty members who are most involved. We have also separately identified those who are supported by 211-d money by underlining their names.

1. Functional Analysis of Local Health Needs and Services

W. Reinke, C. Taylor, R. Parker, C.A. Alexander, M. King,  
F. Nass

Previous reports have described the research efforts of the Department of International Health directed to the functional analysis of health needs and services. The product of this research has been a streamlined methodology for appraising health care services by means of a coordinated analysis of health center activities on the one hand and the investigation of community needs, attitudes and utilization patterns on the other. The methods that have been developed are now being employed in the appraisal of inputs, manpower and financial, into the service components being established and tested as part of the Population and Nutrition projects based in Narangwal.

As our research activities produce evidence of the effectiveness of the services being provided, attention increasingly shifts to the feasibility of introducing the services more widely and to the training implications of such innovations. The functional analysis approach is ideally suited to provide the necessary answers systematically and quantitatively.

## 2. Health and Economic Development

T. Baker, C. Taylor, W. Reinke, J. Newman, A. Sorkin,  
K. Williams, N. Kelly

In June of 1971, a contract was signed between the Agency for International Development and the Department of International Health for a feasibility study of research focussing on the interface between health and development.

Without 211-d support, it would have been impossible for the Department to prepare the original plan and proposal for this project. Because of the core funding we were able to have economists, demographers, systems analysts and epidemiologists available to work on the complex issues involved in the interactions between health and development. Furthermore, library and reference sources were available for the execution of this project. The final report on feasibility of research and health and economic development has been delivered to the Agency for International Development. The Introduction of this report follows:

### HEALTH AND ECONOMIC DEVELOPMENT

#### Introduction and Summary

The Department of International Health of the Johns Hopkins University School of Hygiene and Public Health has had a long-standing interest in the impact of improved health status on local, regional, or national development. This interest has taken several forms, including emphasis on improved health planning techniques in the context of generalized development planning in less developed countries and examination of the potential effect of improved health and well-being on attitudes toward family planning.

The work done under this contract was undertaken to assess types of research on the impact of health on economic development to determine which would prove most practical, applicable to less developed countries, and feasible within the next three to five years. At least six areas have been identified which appear to fit those criteria. They are described in Parts Two and Three.

This contract was begun in July, 1971, and terminates September, 1972. The study was carried out by a nucleus staff of members of the Department of International Health: Dr. Timothy Baker, Project Director; Dr. Alan Sorkin, Project Co-Director; and Drs. Carl Taylor, Jeanne Newman and William Reinke, and Mrs. Kathleen Williams as principal collaborators. Drs. Mark Perlman and Hector Correa from the University of Pittsburgh were primary consultants, and each prepared

a major section of this report. In addition, Dr. Abraham Horwitz of the Pan American Health Organization and Mr. Albert Waterston of the World Bank served as advisors in early stages of the project.

#### CONTENTS OF THE REPORT

This report identifies six important areas in evaluating the relationship between health and development. These subject areas are:

- I. Human Capital/Cost - Benefit analyses which will improve resource allocation to and within the health sector.
- II. Productivity and Development - A project to determine the impact of health status on output per worker.
- III. Case Studies: Health and Regional Development - A study of the impact of disease eradication programs on migration and regional economic activity.
- IV. Macro-Economic Approach to the Interrelationships between Population, Health, Nutrition and Development - One purpose of this project would be to study the contribution of these variables to development under conditions of underemployment. Recently developed economic models that analyze economic change under conditions of structural disequilibrium will be utilized.
- V. Non-economic Components of Interactions between Health and Development - This proposal is designed to concentrate on methodological problems. Particular attention will be paid to the possibility that improved health changes the attitudes and behavior crucial to general development.
- VI. Health Expenditure as a consumption and/or productivity item - This project focuses on the important area of consumption and its interrelations with productivity and health levels.

The main body of the report (Part Three) is made up of six "background papers" on these topics. Each paper presents a detailed analysis of the rationale for each project and a review of the relevant literature.

Although cooperation and collaboration were close among all the principal members of the study group, each paper is primarily the work of one person. To assist AID personnel in contacting the principal investigator to obtain further information, should it be desired, primary authors are listed for each section. In addition, although each section can stand alone, there is in fact considerable cross-over among the various sections. For example, data from virtually every project could be utilized in the macro-economic approach.

In Part Two of this report, a brief summary is given of each project area, so that AID or other officials may make a quick survey of the proposed research. Each summary is accompanied

by an appropriate cost projection in most cases for a three year time span. The summary presents only an outline of each project, together with the proposed site(s). Officials interested in further explanation of each project and its relationship with the health and development theme are referred to the background papers in Part Three.

One major part of this contract called for a literature search covering the relationships between health and development. Early in the project, it became clear that the primary focus should be on the impact of health on development, and the literature search was arbitrarily limited to this point. As a result of this search and review, an extensive bibliography was compiled. Pertinent items were identified, read, and summarized, and the final compilation (as of June, 1972), entitled Health and Development: An Annotated, Indexed Bibliography is included as Part Five.

#### PROJECT DEVELOPMENT

Progress on the work done under this contract throughout the year was reported in two papers already submitted to the Agency, namely, the Interim Administrative Report of March, 1972, and the Summary Document (Preliminary) of May, 1972. Material of a tentative nature from those documents has not been repeated in this Final Report. Officials interested in preliminary project outlines and the general development of the final proposed concepts are referred to the earlier reports.

Particular help and guidance was given by Dr. Joseph Davis, Dr. Norman Holly, Mr. Al Davidson, Dr. Lee Howard, and Mr. James Brown of AID/Washington, in a series of formal and informal meetings.

#### COUNTRIES VISITED

A major facet of this feasibility contract was the identification of possible sites for any research finally proposed. To fulfill this obligation, visits were made by several members of the study group to the following countries:

Dr. Timothy Baker: Korea, Japan, Taiwan, Thailand, Indonesia, Ceylon, and Brazil (1971)  
Dr. Alan Sorokin: Ceylon, Nepal, Kenya, Ghana, and Ethiopia  
Dr. Carl Taylor: Nepal, India  
Dr. Jeanne Newman: Colombia, Guyana, Guatemala, Nicaragua, Panama, and Puerto Rico  
Dr. William Reinke: Colombia, and Papua New Guinea  
Dr. Mark Perlman: Taiwan

In each of these countries, key personnel in the areas of economics and finance, health planning, and public health were consulted. Well over 100 experts were consulted in the process of project development.

C. Department of Population Dynamics - Basic Research

A major activity was the redevelopment of the reproductive physiology program in anticipation of the departure of Drs. Biggers, Marcus, and Stern. We were successful in recruiting Dr. Larry Ewing who will be joining the department on August 1/35<sup>2</sup> as Head of the Division of Reproductive Physiology. His area of research in testicular physiology will add a new dimension to the reproductive physiology program in the department. Dr. William Brunton whose special area of interest is the role of the oviductal secretions in the reproduction process has also joined the department. The redevelopment of the research program in reproductive physiology was greatly strengthened by a generous gift from the International Foundation for new equipment. Close ties are being developed with the reproductive physiology programs in the Departments of Gynecology, Obstetrics, and in Urology, so that a broader and more coordinated training and research program may be developed.

1. **FACTORS INFLUENCING MAMMALIAN OVIDUCTAL SECRETIONS (W. J. Brunton)**  
Investigation aimed at understanding the nature of the secretory process and what factors influence the formation of oviductal fluid. Using isolated rabbit oviducts, it has been found that active chloride transport is the principal chloride and the rate of oviductal secretion are increased by beta-adrenergic agents and prostaglandins. The effects of these agents appear to be mediated by increased cyclic AMP production since it has been found that either compound stimulates adenyl cyclase activity in oviduct epithelial cells. These results indicate that oviductal secretion is affected by a variety of agents and that cyclic AMP has an important role. Future plans include continued investigation of transport processes of oviducts of rabbits, monkey and humans.
2. **OVARIAN FOLLICLE DIFFERENTIATION IN THE PIG (A. W. Schuetz)** Methods were developed for the analysis of the ionic and protein components within the follicular fluid during the growth of the follicle. Understanding these processes of growth will eventually allow us to investigate the role of the follicular environment on the oocyte and the secretory processes within the follicle.
3. **HORMONAL REGULATION OF MEMBRANE PERMEABILITY IN THE FROG OOCYTE (A. W. Schuetz)** Considerable evidence indicates that steroids act directly on the oocyte membranes to initiate meiosis and prepare the egg for embryonic development. Experiments were conducted to analyze the ionic composition of small samples of oocytes during the course of hormone treatment. The effects of inhibitors of hormone-induced maturation on these ionic changes were also assessed. It was demonstrated that calcium deficiency has a marked inhibitory but reversible effect on hormone-induced maturation, membrane permeability and water accumulation. These studies are basic to elucidating how hormones interact with specific membrane structures and processes within the oocyte.
4. **HORMONE RECEPTORS IN THE FROG OOCYTE (A. W. Schuetz and B. Ozias)** <sup>14</sup>  
Studies were carried out using radioactive tracers (Progesterone C<sup>14</sup>) to determine whether there are specific cytoplasmic or nuclear receptors which are involved in the maturational process. Initial results indicate that hormone binding to protein is occurring and future studies will be carried out to characterize these proteins and assess their biological activity.

5. PROGRAM PROJECT IN REPRODUCTION: OOGENESIS TO IMPLANTATION (J. Kennedy, A. Rayyis, S. Stern) Accomplished studies of protein synthesis in maturing mouse oocytes and effect of macro molecules in maturing mouse oocytes. Work to be extended to the human.  
Recovery of human oocytes at laparoscopy of patients stimulated with gonadotrophins. Culture, fertilization and change. Work continuing.
6. EXPERIMENTAL PROGRAM IN FAMILY PLANNING PERTAINING TO HUMAN OVA (J. Kennedy) Preliminary results of studies of lymphocyte aggregations technique as applied to preimplantation embryos. Accomplished steroidgenesis studies in in vitro perfusion of human ovaries. Plans: continued study of cytogenesis of human oocytes and function of perfused human ovaries.
7. THE ECONOMICS OF HOUSEHOLD STRUCTURE, FORMATION AND PRODUCTIVE ACTIVITIES (I. Sirageldin) A research design is being developed for a long range study of the family, its structure, formation, growth, activities, and network of private and public transfers to the family and policies affecting family welfare in the Baltimore Metropolitan area. The focus is both on the systematic collection of new and continuous field data and on methodological development. The objective is to conduct in the Baltimore Metropolitan area a continuing study of various kinds of behavior and attitudes, including fertility behavior, mobility, labor force activity, participation in collective activities, use of programs and facilities, and inter- and intra-family transfers of money, goods, and services. It is anticipated that in so doing the impact of public policies that influence individual action and choice may be isolated. The study will undertake also to develop a measure of family welfare which goes beyond a detailed accounting of income and the use of time by assessing some of the involuntary constraints on people's choices and to observe the impact on this measure of public programs and policies as well as private transfers. Essentially, the study will attempt to examine how much changes in family structure and in its productive and reproductive activities are purposeful responses intended to solve problems and accordingly are subject to influence by public policy.
8. POPULATION MATHEMATICS (Z. M. Sykes) The investigations of stochastic representations of population projection matrices leads to a product decomposition of age-specific birth-rates into factors representing mortality, intrinsic increase, and the distribution of reproductive value by age. A product decomposition of the age distribution over time also follows. These results have been applied to the analysis of period data for several human populations; a more extensive analysis of both period and cohort data is now in progress. The stochastic representation also suggests an attack on the problem of localizing the eigenvalues of population projection matrices, and research into this problem is now in progress. Work has also been done, with Dr. Norris, on the "two-sex" problem, but no striking results have yet been obtained.

9. **PRE-ADULT FERTILITY AND FAMILY FORMATION (M. Zelnik and J. F. Kantner)**  
Analysis of social factors affecting sexuality, fertility and family formation in a sample of U.S. teenagers; including pregnancy history, contraceptive practice, attitudes toward abortion, family size desires, etc. Information on these topics was obtained in a field survey carried out during the Spring and early Summer of 1971. The interviews were completed with females selected in such a way as to represent a national probability sample of the female population age 15-19 living in households and in university dormitories. The two samples provided a total of 4,611 interviews, of which 1,479 were with black females and 3,132 were with whites and other races. The large proportion of black interviews was the result of the sampling scheme stratified by race. A preliminary report titled, "Sexuality, Contraception and Pregnancy Among Young Unwed Females in the United States", was presented to the Commission on Population Growth and the American Future. This report presented data on a number of topics including knowledge of contraception, knowledge about risk of pregnancy, prevalence of intercourse, use of contraception, and the prevalence of pregnancy among this group of young women.
10. **CANADIAN FAMILY GROWTH STUDY (Dr. J. F. Kantner and T. R. Balakrishnan)**  
Analysis of social factors affecting fertility in a sample of Toronto housewives, including pregnancy history, contraceptive practice, attitudes toward abortion, family size desires.
11. **CANADIAN HEALTH PROBLEMS STUDY (R. W. Osborn)** A sample of 1,000 households in Ontario, Canada were interviewed as to types of health problems encountered, sources of help for these problems and types of help given to other people. The widely held thesis that the modern urban family structure is incompatible with providing long-term health help to family members is examined. It is expected that the use of health professionals in areas outside their competence will be found and that no adequate structure exists today to fill the health care functions once undertaken by family members. These data were collected in December, 1970 and are being analyzed.
12. With reference to international activities, the long-standing ties of the department with Pakistan have remained in limbo over the past year following the civil war. Continued contact with regard to the Pakistan situation is being kept with Ford Foundation and the UN Fund for Population Activities in anticipation of some program activity in the future if the situation resolves. With funding of the University Services Agreement by USAID, Dr. Chow went to Ethiopia and Dr. Mosley to Mexico and Lebanon to look into overseas project development. Funding for project proposals have not yet been approved, but it is anticipated that the University Services Agreement grant may provide a major source of funding for international population research activities by this department in the future.

D. Consultation and Service Activities

1. International Health

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

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. Andrews  
B. Chatterjee  
P. Grover  
A. Kielmann  
E. Orrell (Elliston)  
D. Sich  
S. Takulia  
H. Ziegler

Committees:

Advisory Board  
Clinical Scholars Advisory Council  
CMRT Coordinating Committee  
University Population Committee

Extra--University Activities

American Public Health Association  
Governing Council  
Program Development Board  
Iran Foundation  
Medical Advisory Board  
Board of Directors  
Leonard Wood Memorial Advisory Medical Board  
MEDICO Advisory Board  
National Council for International Health (Chairman)  
Pathfinder Fund Executive Board  
World Council of Churches, Christian Medical Commission  
World Health Organization  
Advisory Committee on Population and  
Human Reproduction  
Expert Panel on Professional Education

Meetings and Conferences

- Christian Medical Commission Meeting, Rome,  
June, 1971
- World Health Organization, Scientific Group on Nutrition  
and Infection, Geneva, July, 1971
- Wenner-Gren Conference, Study of Asian Medical Systems  
Austria, July 1971
- International Institute of Rural Reconstruction, meeting  
Philippines, September, 1971
- National Conference on International Health, Chicago,  
September, 1971
- American Leprosy Mission Board Meeting, New York,  
September, 1971
- Research Triangle Institute Review, Washington, D.C.,  
October, 1971
- Testimony for Subcommittee on International Organizations  
and Movements, House of Representatives, Washington,  
October, 1971
- American Public Health Association, Annual Mtg.,  
Minneapolis, October, 1971
- International Conference on Nutrition, National Development  
and Planning, Mass. Inst. of Technology, Cambridge,  
October, 1971
- National Council for International Health Meeting  
October, 1971
- MEDICO Board Meeting, Washington, November, 1971
- AID 211-d Review, Washington, December, 1971
- AID, Health and Educational Development Review,  
Washington, December, 1971
- Two Lectures on Narangwal Project, North Carolina  
Population Center, Chapel Hill, January, 1972
- National Council for International Health Meeting,  
Washington, February, 1972
- Indian Assoc. Advancement of Medical Education, Keynote  
speech, Poona, India, February, 1972
- International Association of Medical Students Conference,  
"Population Overgrowth -A Challenge," Delhi, India  
February, 1972
- World Health Organization, Expert Committee on "Epidemiology  
of Family Planning," Geneva, March, 1972
- MAP Meeting, Wheaton, Illinois, March, 1972
- National Council for International Health, Washington,  
April, 1972
- Kennedy Panel, "Bangladesh, Biafra and Beyond," American  
Society of International Law, Washington, April, 1972
- Testimony, Senator Hughes' Committee, U.S. Senate, May, 1972
- AID Contract Meeting, Washington, May, 1972
- Testimony, Senator Hughes' Committee, U.S. Senate, June, 1972
- Christian Medical Commission Meeting, Berlin, June, 1972
- World Health Organization, Meeting on preparing background  
papers for 1974 World Population Conference, Geneva,  
July, 1972
- Consultation Tribhuvan University, Kathmandu, Nepal, for  
International Development Research Center, August, 1972
- International Congress of Nutrition Conference, Mexico City,  
September, 1972

b. Timothy D. Baker, M.D., Professor

University Activities

Teaching: International Health 1  
International Health 2  
International Health 5  
International Health 8  
International Health 13  
International Health 20  
Public Health Admin. 1

Students Advised:

Kenneth Dixon  
Daniel Fountain  
Michael Jutras  
Robert Lebow  
James Lynch  
Alan Morrissey  
Darrell Newkirk  
Dorothea Sich  
Steven Solter  
Martin Gorosh

Committees:

MPH Policy Committee  
Doctor of Science Committee  
Curriculum Committee  
Residency Program Committee  
Welch Library Committee  
Hopkins Centennial Committee  
Government Committee, School of Public Health

Extra-University Activities

APHA Committee on International Health, Co-chairman  
Medical Affairs Committee, City Medical Society, Chairman  
Maryland State Medical Society, House of Delegates, Member  
Maryland Public Health Association, Policy Committee, Chairman  
American College of Preventive Medicine, Examiner

Consultation

AID, Health Planning, Brazil, Summer, 1971

Meetings and Conferences

Mr. Ratanoff, Inter-American Bank, re: Sector Loan, Northeast  
Brazil, September 16, 1972.  
American Public Health Association Meeting, October 9-13, 1971

continued...

211-d Joint Review, Washington, D.C. Dec. 15, 1971  
Government Affairs Institute, Health & Population Seminar,  
May 23, 1972  
Presentation, Teaching of Tropical Medicine in United States,  
Tropical Medical, New York City, May 13, 1972  
APHA International Health Committee, June 9, 1972  
Numerous meetings and conference in Baltimore, Pittsburgh,  
Washington on Health and Economic Development, 1971-72

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

University Activities

Teaching: Biostatistics 3  
International Health 13  
Public Health Administration 5

Students Advised:  
Mack McCoy  
Anthony Golda

Committees:  
Admissions and Credentials Committee, Chairman  
MPH Academic Program Committee  
Committee on the Environment  
Interdepartmental Library Committee  
Data Processing Committee

Extra-University Activities

Presentation at Meetings of International Epidemiological  
Association, Primosten, Yugoslavia, August, 1971  
Presentation at Meetings of Operations Research Society of  
America, New Orleans, April, 1972

Consultations:  
WHO to Indonesia, June 1972  
Consult-Coordinator, WHO Course on Health and Manpower  
Planning, Teheran, Iran, November-December 1971.

d. Robert D. Wright, M.D., Professor

University Activities

Teaching: International Health 1  
International Health 7  
International Health 9  
International Health 5  
International Health 20  
Contemporary Issues 10

continued...

Students Advised:

H. Armenian  
R. Schaefer  
D. Newkirk

New Course development - Contemporary Health Issues

Extra-University Activities

Consultation:

Visit to Pahlavi University, Shiraz, Iran to develop curriculum on family planning and young child care.  
Consultant to meeting of Midwestern University Consortium on International Activities at Chicago, 1972  
Several meetings at Washington and Chapel Hill, N.C. to develop consortium approach to assist tropical African health care training institutions in training family planning and young child health.

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

University Activities

School of Medicine:

Teaching: Nutrition in Pediatrics  
Medicine and Public Health

School of Hygiene and Public Health

Seminar in Nutrition: Ecology, Prevention, Treatment of Malnutrition, its consequences and cost.

Student Advisees:

John Ey  
Robert Suskind  
David Paige  
Larry Casazza  
Juan Baertl

Extra-University Activities

AID, Nutrition Programs  
NIH, Nutrition Programs  
UNICEF, Nutrition Programs  
Industry - Development of Low Cost Protein Foods.  
USDA, Nutrition Service

Committees:

NIH, Nutrition Study Section  
Editorial Board, Journal of Nutrition  
Editorial Board, American Journal Clinical Nutrition  
Aquatic Food Resources, FNB, NRC-NAS

f. Maurice H. King, M.D., Visiting Professor

University Activities

Teaching: International Health 9  
International Health 2  
International Health 5

Students Advised:

Daniel Fountain  
Darrell Newkirk  
Richard Hart  
Roy Shaeffer  
Dorothea Sich  
Paul Yoder  
Elias Srouji

Extra-University Activities

Consultations:

WHO Expert Committee on the Classification of Auxiliary  
Personnel  
USAID on Aid to Hospital Services

Meetings and Conferences:

Harvard School of Public Health April, 1972  
Western Reserve University, February, 1972  
Meharry University, Nashville, May, 1972  
Vanderbilt University, Nashville, May, 1972  
Congress on Missionary Medicare, Wheaton, March, 1972  
AID, Washington, June, 1972

g. Jeanne S. Newman, Ph.D., Assistant Professor

University Activities

Teaching: International Health 13  
Public Health Administration 5  
Seminars on Quantitative Methods in Health Planning..

Student Advised:

Paul Yoder

CENDAS, Census Data Access Service Program  
Data Archives for Health Planning

Extra-University Activities

Officer of the Society of Hygiene  
Center for Urban Affairs, Representative  
Baltimore City Department of Planning  
Chesapeake Bay Consortium

continued...

Meetings and Workshops Attended:

Maryland Comprehensive Health Planning Agency, Annual Meeting of Advisory Board, Ocean City, Md. Sept. 1971  
American Public Health Association, Minneapolis, Oct. 1971  
American Statistical Association Fall Meeting, Md. Section  
Regional Science Association Annual Meeting, Ann Arbor, Nov. 1971  
Population Association of America, Toronto, Canada, April 1972  
Clearinghouse and Laboratory for Census Data, Wash. April 1972  
Assoc. Population Libraries and Information Centers, Annual Meeting, Chapel Hill, N.C. May, 1972

h. Alan Sorokin, Ph.D., Associate Professor

University Activities

Teaching: International Health 1  
International Health 12  
International Health 10  
International Health 5  
Home wood, Economic of Education

Students Advised:

Sunny Andrews  
Elias Srouji

Study in field on Economic Aspects of Education in Chile, 1972

Extra-University Activities:

Meetings and Conferences:

Speech on "The American Indian Today" Govans Presbyterian Church, September 1971  
2 Lectures, Walter Reed Hospital, Washington, July and February 1972 on "Economic Factors in Medicine"

i. Cecile De Swemer, M.D., Research Associate

University Activities:

Teaching: International Health 2  
International Health 5  
International Health 20

Extra-University Activities

Conference and Meetings:

AID, Technical Assistance Bureau, HEW, Columbia, Md. May 1972  
MIT, Nutrition and National Development, Mass. Oct. 1971  
9th Congress of Nutrition, Mexico, September 1972

Consultations:

Cornell University, Punjab Nutritional Field Study, Levinson Thesis, 1972  
Batlimore Family Planning Training Institute, 1972

j. Alice M. Forman, S.C.M., M.P.H. - Assistant Professor

University Activities

Teaching: International Health 2  
International Health 5  
Nursing Seminars  
International Health Seminars

Students Advised:

Salvacion Bailon  
A. Therese Dupuis  
Elizabeth Mitchell  
Aurora Yapchiongco

Committees:

Nurse Faculty Council  
NFC Committee on Goals and Objectives  
for Nursing Programs at School of Hygiene  
NFC Nursing Seminar Committee

Extra-University Activities

Committees:

Executive Board of the American College of  
Nurse-Midwives (ACNM) - Member-at-Large  
Legislation Committee of the ACNM - Chairman  
ICM Congress Program Committee - Chairman  
Board of Directors, Admiral Bristol Hospital,  
School of Nursing, Istanbul

Meetings and Conferences

ACNM Workshop for Preparation of Guidelines for  
Establishing Nurse-Midwifery Services, University  
of North Carolina, School of Nursing, Chapel Hill, N.C.  
(Sponsored by ACNM Foundation) - Dec. 2-4, 1971  
ACNM Annual Convention, Washington, D.C., April 19-22, 1972  
ACNM Board Meetings in New York and Washington  
ACNM Legislation Committee Meetings in New York and Baltimore  
US/ICM Planning Committee Meetings in Baltimore,  
Washington, and New York

k. Juan M. Baertl, M.D., M.P.H., Research Associate

Extra-University Activities

Conference and Meetings:

International Conference on Fish Protein Concentrate (FPC),  
M.I.T., Cambridge, Mass., June, 1972.  
Conference of Faculties of graduate programs in Public Health  
Nutrition, Phila., Pa., Oct. 1971.  
45th Annual meeting of the American Schools of Public  
Health Assoc., Chicago, Oct. 1972.  
American Public Health Association meeting, Minn., Oct. 1972

l. Elizabeth P. Elliston, B.A., Assistant

Extra-University Activities

Seminar on Congraception, Baltimore City Street Club, Oct. 1971.  
Seminar on Abortion - Balto. Free University, Oct. 1971.  
National Free Clinic Convention, Washington, D.C. Jan. 1972.  
Maryland League for Nursing Panel on Pregnancy, Abortion  
and Sex Education, March 1972.  
Public Health Association, Free Clinic, Alternative to  
Private Care, May, 1972.  
Women's Conference on Health, Pottstown, Pa., June, 1972  
Panel on Abortion Pro and Con- Point-Blank, Md. Pub.  
Broadcasting network, July, 1972.  
Seminar on Abortion Counselling, Planned Parenthood, Columbia,  
Maryland, July, 1972.

Memberships:

APHA

Community Family Life Action Center, Johns Hopkins Hospital  
People's Free Medical Clinic, Waverly, Balto, Md. (Vice President)

m. M. Francoise Hall, M.D., M.P.H., Assistant Professor

University Activities

Lectures and Seminars

Extra-University Activities

Chairman, ad hoc session on Latin American Demography,  
Population Association of America, Toronto, Ontario  
Canada, April, 1972.

2. Population Dynamics

a. Dr. John D. Biggers

University Activities - Committees

1. Laboratory Animals Facilities Committee, Chairman
2. University Laboratory Animals Facilities Committee
3. University Population Committee

b. Dr. W. J. Brunton

University Activities

1. Participated in teaching of the Pharmacology Course to sophomore students of the School of Medicine.

Extra University Activities

Lectures, Speeches, Presentations:

1. Paper presented at the annual meeting of Federation of American Societies of Experimental Biology, Atlantic City, N.J., "Copper Stimulation of Na Transport Across the Isolated Rabbit Oviduct." April, 1972.
2. Paper presented at the annual meeting of the Society for the Study of Reproduction in East Lansing, Michigan, "Adenyl Cyclase Activity in Rabbit Oviduct: Stimulation by Isoproterenol and Prostaglandins." June, 1972.

Professional Societies:

1. Society for the Study of Reproduction
2. Society for the Study of Fertility
3. Phi Zeta - Honorary Veterinary Society

c. Dr. L. P. Chow

Extra University Activities

Lectures, Speeches, Presentations:

1. Participated in a few seminars at the Government Affairs Institute for the training of various types and levels of family planning workers from various countries sponsored by AID. Major subjects of discussion were administrative problems and management issues experienced by the Taiwan family planning program.
2. Expert Working Group Meeting on the Demographic Impact of Family Planning - organized by the Organization of Economic Cooperation and Development (OECD), held at the Population Council, New York, July 6 - 9, 1971. The objective was to discuss methods of evaluating family planning impact on fertility decline and presentation made of experience in using a matching technique to estimate the impact of the IUD program in Taiwan.

3. International Symposium on Statistical Problems in Population Research, sponsored jointly by the International Association for Statistics in the Physical Sciences and the East-West Population Institute of the East-West Center, Hawaii, August 2 - 6, 1971. Presented paper entitled, "Mechanism and Evaluation of Clinical Effectiveness of Fertility Control Methods."
4. 13th International Congress of Pediatrics - Colloquim on Population Explosion and Family Planning, Vienna, Austria, August 29-Sept. 5. Presented article on "Population Problem and Its Control."
5. Consultation on Education and Training of Health Statisticians with regard to Family Planning, organized by World Health Organization in Geneva from November 23-29, 1971. Presented background paper on "Education and Training of Health Statisticians in Family Planning."
6. Scientific Group Meeting on Application of Epidemiological Methodology to the Health Aspects of Family Planning, organized by World Health Organization, Geneva, March 7-13, 1972. Presented paper entitled, "Application of Epidemiological Methodology for Study of Family Planning Services: Some Research Subjects of High Priority."
7. Population Seminar, South East Asia Development Advisory Group, Asian Society, Vermont, Elkridge, Maryland. Presented paper on "Health and Family Planning" and discussed the issues on the health benefit of family planning program.

Consultant Activities:

1. Consultant to Executive Director, United Nations Fund for Population Activities on a part time basis to draft a plan for the future development of UNFPA population program activities and to recommend methods for evaluating the program activities of UNFPA and the UN agencies supported by UNFPA; October 1971 - January 1972.
2. Short term consultant to Pan American Health Organization (PAHO) to help it organize and conduct a training workshop for health statisticians in the health ministries of various Latin American countries; participation by 20 health statisticians from about 13 countries in the region; April 15-21.
3. Evaluation Mission for PAHO Population Program - On request of Agency for International Development (AID), PAHO invited a group of four family planning administrators to form a mission to evaluate its overall population program and to make recommendations. Invited to participate in the mission and spent a week (May 22-26) at PAHO headquarters to review related reports and documents. Then made trip to Colombia (May 28-31) and Costa Rica (May 31-June 1) to inspect related program activities on site.

Meetings:

1. Management of Family Planning Program - a one day advisory meeting on the management of the family planning program, organized by Management for Health, Inc., in Boston, mainly to discuss the feasibility of the use of computer models to help the planning, management and evaluation of family planning programs.

d. Dr. Paul A. Harper

Extra University Activities

Committees:

1. PAHO Advisory Committee, member

Consultant Activities:

1. WHO, Egypt and Pakistan, September 22-October 21, 1971

Professional Societies:

1. American Pediatric Society
2. American Public Health Association
3. Other local, state, and national medical associations

Meetings:

1. Medical meeting, Mexico City, Mexico, July 29-31, 1971.

e. Dr. John F. Kantner

University Activities

Committees:

1. Committee on Governance
2. Doctoral and M.Sc. Program Committee
3. Curriculum Committee

Extra University Activities

Committees:

1. Population Research and Training Committee, NICHD

Consultant Activities:

1. Population Council
2. NICHD
3. NCHS
4. National Analysts
5. IBRD

Meetings and Conferences:

1. Population Association of America, Annual Meeting - Session Chairman
2. Southeast Asia Development Advisory Group (SEADAG) Seminars on Population - Chairman of first seminar, member of planning group
3. Planning meetings of U.S. National Family Growth Study

Professional Societies:

1. American Sociological Association
2. Population Association of America
3. American Association for Advancement of Science
4. American Statistical Association
5. International Union for the Scientific Study of Population
6. Canadian Anthropology and Sociology Association

f. Dr. W. Henry Mosley

University Activities - Committees

1. Member, Committee on Residency Training
2. Member, Centennial Committee
3. Member, Search Committee, Chairman Dept. of Biochemistry

Extra University Activities

Lectures, Speeches, Presentations:

1. Lecture, Towson State College
2. Lecture, Summer Institute in Science for Secondary School Teachers, Morgan State College
3. Seminar, Government Affairs Institute, Washington, D. C.
4. Lecture, Maryland State Conference on Environmental Education, Thurmont, Md.
5. Paper, American Association of Planned Parenthood Physicians, Detroit, Michigan.
6. Paper, U.S.-Japan Cooperative Medical Science Program, Woods Hole, Mass.
7. Paper, International Epidemiological Association, Primosten, Yugoslavia
8. Paper, American Public Health Association, Minneapolis
9. Paper, Sinai Hospital, New York
10. Paper, American Epidemiology Society Meetings, Rochester, Minn.
11. Paper, Epidemic Intelligence Service Conference, CDC, Atlanta, Ga.

Committees:

1. Member, Medical Advisory Committee, Planned Parenthood Assoc. of Md.
2. Chairman, APHA Council on Population
3. Member, National Medical Committee, Planned Parenthood-World Population

Professional societies:

1. American Epidemiological Society
2. American Public Health Association
3. Society for Epidemiological Research
4. International Epidemiological Association

Consultant Activities:

1. NIH Site Visit, University of North Carolina
2. USAID Project Development, Mexico City, Mexico
3. USAID Evaluation, Seylan Province, Turkey
4. USAID Project Development, Beirut, Lebanon

Meetings and conferences attended:

1. Population Club, New Orleans; Hawaii; Baltimore; Washington, D.C.
2. APHA, Family Planning Services Task Force Meeting, Washington, D. C.
3. APHA, Program Development Board Meeting, Washington, D. C.
4. APHA, Council on Population, Washington, D. C. (2)

Dr. Richard W. Osborn

University Activities

1. While in Pakistan a course of lectures were given to TREC staff during May to July, 1971, on problems in research design. These lectures focused on non-survey approaches to data collection and used analysis of variance as the statistical model. In October and November, 1971, an additional course of lectures were given to the TREC staff covering selected topics in general sociology. The sociological concepts developed were later applied to problems in family planning studies.

Extra University Activities

Professional Societies:

1. American Association for the Advancement of Science
2. Population Association of America
3. American Sociological Association

Consultant Activities:

1. Briefed and advised United Nations Fund for Population Activities on developments in the family planning program in Pakistan

Meetings and Conferences:

1. Population Association of America annual meeting, Toronto, Canada, April 1972.

g. Dr. Rowland V. Rider

University Activities

Committees:

1. Chairman, Ad Hoc Committee on Data Processing and Computers
2. Member, Committee on Admissions and Credentials
3. Member, Clinic Committee

Extra University Activities

Professional Societies:

1. AAAS
2. Sigma Xi
3. Biometric Society
4. American Public Health Association
5. American Statistical Association
6. Population Association of America
7. International Union for the Scientific Study of Population

Consultant Activities:

1. World Health Organization Workshop on Statistical Methods in National Family Planning Programs, Taiwan, October 19-Nov. 1, 1971.

Meetings and Conferences:

1. Population Association of America, Annual Meeting, Toronto, Canada, April 13-15, 1972.

h. Dr. Allen Schuetz

University Activities

Committees:

1. Member, Animal Facilities Committee
2. Chairman, Committee to formulate plans for Population Center's grant in area of Reproductive Biology
3. Member, Joint Library Committee

Extra University Activities

Lectures, Presentations:

1. Presented paper at meeting of General Physiologists, Woods Hole, Mass., August, 1971.

Meetings:

1. Fourth International Congress of Endocrinology
2. Cell Biology Meetings
3. General Physiology Meetings
4. Fourth tutorial on Human Chromosomes and Chromatin, University of Chicago, January 1972.

i. Dr. Ismail A. Sirageldin

University Activities:

Committees:

1. Ad Hoc Committee (promotion of Alan Sorkin)
2. Wednesday Seminar - MCH-PD - Family Size - Measures of Income and Welfare.

Extra University Activities

Lectures, Presentations:

1. Catholic Center, Johns Hopkins Medical Institutions, "The Population Problem in the USA - an Economist's Evaluation," October, 1971.
2. Southeast Asia Development Advisory Group of the Asia Society Seminar, "Population Growth and Development," Elkridge, Maryland, Apr. 6-8, 1972.
3. Presented paper at Meeting of World Association for Public Opinion Research, Atlantic City, May 18-21, 1972.

Professional Societies:

1. American Economics Association
2. Royal Economics Society
3. International Association for Research on Income and Wealth
4. Econometric Society
5. American Statistical Association
6. Population Association of America
7. International Union for the Scientific Study of Population
8. Academy of Political Science

Consultant Activities:

1. Consultant, World Bank Population Mission to India, July-August 1971
2. Consultant, Ford Foundation, Population Incentive, Egypt, October 1971
3. Consultant, World Bank Population Project Review Mission, Government of Jamaica, June 1972.

Meetings and Conferences:

1. Population Council Conference on Population Planning and Economic Planning, New York, Nov. 1-2, 1971.
2. Agricultural Development Council Conference on Teaching the Economics of Population, New York, December 2-3, 1971.
3. Population Council Conference on Population Planning and Economic Planning, 1972.
4. Population Association of America Annual Meeting, Toronto, Canada, April 13-15, 1972.

j. Dr. Zenas Sykes

University Activities

Committees:

1. Member, Dissertation Committee

Extra University Activities

Professional Societies:

1. American Association for the Advancement of Science
2. American Statistical Association
3. Association for Asian Studies
4. Biometric Society (ENAR)
5. Population Association of America
6. Institute of Mathematical Statistics

Consultant Activities:

1. Referee for NICHD (1 application)
2. Referee for two journals (4 papers)

Meetings:

1. Population Association of America, Canada, April 1972.

k. Dr. Melvin Zelnik

Extra University Activities

Professional Societies:

1. Population Association of America
2. International Union for the Scientific Study of Population
3. American Sociological Association
4. American Association for the Advancement of Science
5. American Statistical Association

IV. IMPACT OF GRANT SUPPORTED ACTIVITIES IN  
DEVELOPING INSTITUTIONAL CAPABILITIES

A. Interpretation of Section III

Among the specific objectives of the 211-d grant mechanism the main consideration has always been the development of institutional competence. In our annual reports we have reiterated descriptively the ways in which core funding strengthens all three major types of academic work, teaching, research and service. We have, however, been unable to provide a precise budgetary quantification of the relative amounts of money going into supporting these three types of activities. The reason is that most of our teaching, research and service activities are inextricably interlinked. In our teaching we constantly bring in the results of our own research projects and use case studies from consultations. A large proportion of our students are graduate students involved in residency or doctoral programs. They are working on departmental research in a way that makes it impossible to distinguish between these three emphases.

As in the past reports, however, we have felt that for our 211-d grant it is more important to separate the categorization of work related to 1) health, 2) family planning and 3) the integration of health and family planning. This is necessary because of the unique pattern of our funding and the fact that it comes from different sources, which require separate identification. In the financial statement estimates have again been made to provide our best judgement on this categorization and to show that we continue to fulfill the conditions of the grant.

B. General University Activities (Other Departments)

1. Department of Gynecology and Obstetrics

Dr. H. Davis, Dr. T. King, Dr. C. Wheelless

During the 1971-72 academic year a significant expansion of educational, investigative and service activities in the field of fertility control has taken place within the Department of Gynecology and Obstetrics, strengthening the opportunities for collaboration with the Department of International Health, and contributing to the strength of the University's Population Center. 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 Services at the Johns Hopkins Hospital. The resources of the Department of Gynecology and Obstetrics have proven particularly useful in providing clinical training, especially because of their ready accessibility to the School of Hygiene and the leadership of this Department in developing improved contraceptive technology.

The Department of Gynecology and Obstetrics conducts basic research in reproductive biology and clinical research in all aspects of fertility control, including the various methods of contraception, pregnancy termination and female sterilization. A substantial volume of clinical material is available for teaching and research purposes via the organized program within the hospital and in a newly opened satellite clinic three blocks from the School of Hygiene. These facilities are currently performing 1800 pregnancy terminations, 1400 female sterilizations, and recruiting 1300 new contraceptors per annum, providing broad opportunities for collaboration with students and faculty in International Health.

## 2. Department of Behavioral Sciences

Dr. S. Levine, Dr. P. White, Dr. N. Scotch

The Department of Behavioral Sciences has a program of teaching and research that directly relates to the problems of population control on all the levels with which behavioral sciences is concerned, e.g., attitudes, beliefs, responses to programs, behavior in organizations, organizational behavior.

Dr. Paul E. White, who was in Lahore, Pakistan for three and a half years as research director of the WEPREC Project of the Department of Population Dynamics, relies heavily upon this experience for teaching material. His interest in population control is reflected also in his research on the organization of planned change endeavors. Two other members of the Department, Dr. Sol Levine and Dr. Norman A. Scotch have had extensive experience in international health programs, including family planning. In addition to teaching International Health students in the regular Behavioral Sciences courses, all three participate in seminars and courses of the Department of International Health. One course, "Planned Change," is offered jointly by the departments of Behavioral Sciences and International Health. During the past year the faculty of the department have also served as research advisors and consultants to students in the Departments of International Health and Population Dynamics.

A number of courses of the Department of Behavioral Sciences directly contribute to the population control program of the School. Specifically, these courses are:

### a) Social Behavior and Public Health

An introduction to the behavioral sciences, acquainting students whose primary background is in fields other than the behavioral sciences with the study of the major aspects of man's social and cultural environment; introducing basic social science concepts relevant to the public health disciplines; pointing up the social and cultural factors underlying health problems and the implementation of health programs; (including population programs) and specifying important social and cultural factors which may serve as variables in public health research. Topics include: man and culture; attitudes and opinions; social stratification; the community; the family; groups and organizations; social deviance; and social change.

b) Health Professions and Health Organizations: Studies of the social and cultural determinants of organizational and professional behavior are reviewed; problems of health organizations and the community, of interorganizational relationships, and of professionals in organizations. One part of the course is devoted to cross-national programs using population control as the major case.

c) Planned Change: Attention is given to problems of introducing structural and behavioral change in organizations and in communities, and to the social and cultural factors which influence the success of public health programs within and outside the United States. The assumptions and strategies of various types of change agents are examined.

d) Health Attitudes and Beliefs: Review and critical evaluation of theoretical, conceptual, and experimental approaches in the behavioral sciences contributing to an understanding of health attitudes and beliefs, and the influence of communication and persuasion on these attitudes and beliefs, and subsequent health behaviors, including population control. Topics include extent and kinds of beliefs possessed by various segments of the population; cultural and psychosocial determinants of attitudes; communication and influence processes; models of attitude change; audience characteristics; selective exposure and information seeking; attempts to modify attitudes and behaviors; and attitudes of professionals.

In addition the department provides courses in research methodology which are relevant to individuals evaluating population control programs. Relations with the developing Population Center are also quite close. One member of the department anticipates conducting research on factors that contribute to organizational effectiveness and efficiency particularly in terms of constraints on organizational decision-makers in family planning programs. It is expected also that the department will respond to the specific teaching and research needs of the Center as these arise.

### 3. Department of Biostatistics

Dr. H. Abbey, A. Gittelsohn, A. Kimball, A. Ross

Eight of the nine full-time resident faculty of the Department of Biostatistics had significant involvement with population studies through their consulting and teaching in 1971-72. The courses Biostatistics 1 (Dr. Abbey) and Biostatistics 2 (Dr. Kimball) dealt in part with demographic parameters directly, and much of the balance in both courses consisted of statistical methods employed by population program administrators, demographers, and biologists. Biostatistics 5, a course in sample survey methods (Dr. Ross), deals exclusively with sampling human populations. Most of the examples cited there were drawn from census/demographic surveys and from KAP studies. A year-long course in general statistical methods (Biostatistics 11-12, Drs. Gittelsohn and Ross) gave attention to life table functions as well as the usual topics in probability and statistics.

Two other courses offered in 1971-72 attracted students from the Department of Population Dynamics, although the content of those courses did not deal specifically with population studies. They were: Biostatistics 7, Problems in Data Analysis (Dr. Tonascia), and Biostatistics 10, Mathematical Methods for Biomedical Scientists (Dr. Kimball). The former contained material on programming, coding, editing, file design, linkage and retrieval, cross tabulation, screening, and sorting algorithms. The mathematics course reviewed topics in algebra and calculus, including systems of equations, series, derivatives, integration, and matrix manipulation.

New curriculum plans for doctoral and masters students in the Department of Population Dynamics will require Biostatistics 2 plus a choice of Biostatistics 5 or 6. (Biostatistics 6 is an introduction to design and analysis of experiments).

The summary of regular teaching activities sketches out some of the Biostatistics faculty engagement with population topics and with students whose primary interest is in population studies. In addition to these departmental teaching activities, Dr. Abbey gave the course Population Dynamics 12, Stochastic Models for Birth, Death, and Illness Processes, and Dr. Tonascia conducted a semester of tutorial work for two students in Population Dynamics (Mssrs. Alam and Nair).

Consultation normally consumes about twenty-five percent of the total effort of the Biostatistics faculty. In 1971-72 Dr. Horn worked with Dr. Schuetz (Reproductive Biology) on logit models for cell maturation. Drs. Ross and Royall designed a national sample for Afghanistan under a USAID subcontract with the State University of New York. The purpose of that survey is to estimate fundamental population parameters and to prepare for family planning inquiries. Dr. Abbey consulted with the Department of Geography and Environmental Engineering (Homewood campus) on problems of population and urban housing. Dr. Ross was the statistical consultant for the U.S. Pre-Adult Fertility study of Drs. Zelnik and Kantner (Population Dynamics).

Members of the Department of Biostatistics continued to provide advice and consultation on concepts and techniques for students doing demographic and other population projects. Nearly all of those contacts were collaborative enterprises with students from Epidemiology, Population Dynamics, Pathobiology, and Behavioral Science.

#### 4. International Journal of Health Services

##### Dr. V. Navarro

The "International Journal of Health Services: Planning, administration and Evaluation" was started in January, 1971. This Journal is multidisciplinary in focus 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 objective of the Journal is to offer an international forum for new thinking on the concepts, problems and techniques in the planning, administration and evaluation of health services, and in related areas such as population, thus providing 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 editorials, book reviews, notices, six or seven articles with abstracts, as well as a "viewpoints" section containing discussions on a topic of current interest by authors with different points of view. A balance between policy and research papers is sought in each issue, as also between contributors representing diverse viewpoints and nationalities.

The Editorial Board, with 28 members from 17 different countries, both developed and developing, represents different disciplines, interests, and endeavors. It is headed by V. Navarro, Associate Professor of International Health and is solely responsible for the policy of the Journal. Assisting the Editorial Board in matters of policy there are 36 editorial consultants from 19 countries.

The policy of the Journal is to dedicate as many issues as possible to specific topics of interest and relevance to less developed countries, as well as developed countries. Specific topics covered in past issues are: Health and Socio-Economic Development (specially edited by Dr. V. Navarro and Prof. P. Ruderman); Social Insurance as an Influence on Medical Care Patterns (specially edited by Prof. M. Roemer); and The Present and Future of Primary Medical Care (specially edited by Dr. J. Fry).

Issues now in preparation include a special one on Population, to be twice the size of a normal issue, specially edited by Professor Carl E. Taylor and Dr. Francoise Hall. The main interest of this issue will be a review and appraisal of the population issue, covering the subject comprehensively with contributions from various countries, less developed countries and developed countries. Among the contributors, there are members from several departments of the School of Hygiene. This special issue will likely be published at a later date in hard cover, book form.

An issue similar in format is presently being prepared to review and appraise Health Manpower Studies, surveying past and present experience as well as projections and recommendations for the future. This issue will be specially prepared by the Department of International Health in collaboration with other departments of the School. Contributors are likely to represent different disciplines, countries and approaches to the subject.

This quarterly started one year and 1/2 ago and currently has a subscription and distribution list of approximately 1,500, estimated to reach 2,000 by the end of the present volume, and 3,000 at the end of 1973, at a rate of approximately 80 new subscribers per month. The subscription list comes from different parts of the world, including the less developed countries. This latter situation is made possible by the present policy

of the Journal to lower the annual subscription price from \$20 to \$12 for those subscribers from less developed countries.

Initial market research by the Director of Journals of the Publisher indicates that the readership is broadly spread among academic, government and private agencies. Most, however, are academic and at the top levels of government, which would seem to make the Journal more influential than the mere numbers may suggest.

V. UTILIZATION OF INSTITUTIONAL RESOURCES IN  
LESS DEVELOPED COUNTRIES

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The guidelines for this report say that this section should recite the contributions that have been made directly to less developed countries as a result of 211-d support to Johns Hopkins. It is hard to generalize on this subject and much better to give specific information. This can best be done by detailed descriptions of activities in specific countries. This section, therefore, presents a series of reports on work in individual countries. The local costs of these projects were funded separately by grants from AID and other sources. Several are supported by the University Services Agreement. We would not have been able to carry out this range of work without the back-up support provided by 211-d. In accordance with previous 211-d instructions we have listed the faculty members who are directly involved in the project. To show the role of 211-d in backing up this research we have underlined the names of faculty who are partially supported from these funds.

A. Current Status and Future Prospects of Narangwal Population Project

C. E. Taylor, W.A. Reinke, C. McCord, R. D. Singh, R. Parker, H. Sarma, C. DeSweemer, A. Kielmann, H. Takulia, D. Laliberte, F. Nass, K. Rosenthal, W. Blot, J. Newman, N. Kelly.

Rationale for Research Approach

Population policy and programming around the world has moved much faster than anticipated to make the findings and experience of the Narangwal Population Project immediately relevant and urgently needed. When we were planning this research in 1965, we thought it would take a number of years for programming in the developing countries to arrive at the point of being ready to apply these findings. It has been generally agreed that a campaign approach to providing family planning services alone represents a catch-up need because of the many years during which population work was considered improper or unnecessary. A concentrated approach to providing family planning services has therefore been needed in countries such as Taiwan where other health and general development activities had progressed independently to produce a significant family planning gap. Separate family planning services have also proved appropriate to meet existing demand in situations such as Nepal where no health infrastructure exists and yet the population density is high. Just as with malaria eradication programs, however, it has become increasingly evident that there is little point in making a massive advance in a categorical family planning program unless parallel development provides a health infrastructure into which the campaign approach can eventually be integrated.

Even though it may seem premature to some international advisers, many countries are making politically oriented decisions to accelerate the integration of family planning and health services rather than proceeding with a separate family planning program. Although WHO is often given the blame for promoting the integrated approach, the fact is that the decisions are being made by national officials because of political sensitivities. It has been evident from the beginning that in Latin America and Africa only an integrated approach would be acceptable. Now, in Asia also, the large countries with the greatest population problems are turning firmly toward a progressive building up of integrated services.

India provides a good case study for this sequence. Although part of the same ministry, the organization and funding of family planning services has been quite separate from health for the past six years. The campaign approach is succeeding as never before through the mass sterilization programs such as the much publicized efforts in Ernakulum District of Kerala and in Gujarat State. The key ingredients have been good organization, clinical services, follow-up and publicity, along with the abundant use of monetary and other incentives. Birth rates are going down dramatically in a number of the more advanced Indian states, especially those where education and child mortality have improved most. In the Punjab, for example, we estimate that in the last decade the birth rate has dropped from about 40 to about 33. The 1971 census showed a much smaller population than had been projected but most of the reduction in growth rate was due to the fact that the death rate did not fall as rapidly as anticipated in the least advanced states. A serious political consequence of the census, however, has been much publicity among Hindus about the greater fall in their birth rates than those of minority groups. Family planning has become politically volatile and powerful Hindu reactionary parties are strongly criticising the present administration. High Indian officials are now talking much more about the need for improved child nutrition than about family planning. It is particularly pertinent therefore that Narangwal data can demonstrate that it is almost impossible to remove the hard core of malnutrition among children as long as family size remains high among the poor.

In response to the evident shift in political realities in developing countries, a number of international agencies have begun to mount demonstration projects on the integration of health and family planning. In the last year at least four major groups have begun programming for clusters of field projects: WHO; the AID/APHA DEIDS Projects; the Population Council Taylor/Berelson Projects; and the Tulane Family Health Projects. It is a simple statement of fact that these other groups are now at the point where our group was in 1965. They are, however, trying to short circuit our research approach by moving directly into demonstration projects. On the basis of our experience we can state with considerable confidence that other projects will find that much of their detailed planning will be irrelevant when they get into the field. To be effective, a phased approach will be needed to work out detailed field methods. Although basic principles can be generalized, specific operating routines at the village level require considerable field work to get local relevance. A common fallacy is the assumption that it is simple to develop simple routines. We have found that the process of developing standing orders and operating routines for auxiliaries requires a profound readjustment of thinking among health professionals based on clear agreement on priorities.

The Narangwal experience provides a case study in the working out of village routines for family planning and MCH. We are eager to make our experience and ourselves available as other demonstration projects develop. With six years experience at Narangwal we expect to accomplish equivalent progress in making adaptations elsewhere in approximately two years. We

would like to apply what we have learned at Narangwal in demonstration projects in other situations.

There seems to be a need to clarify some erroneous folk lore about Narangwal that appears to have been circulated by people who have not visited the field activities. Many people who visit Narangwal tell us that only after being there can they really understand what is going on.

#### Historical Background

First, it is important to reiterate the historical perspective. Dr. Taylor started to work on family planning in North Indian villages in 1947. An article in the Atlantic Monthly in 1952 presented the theme that providing family planning should be straightforward and simple because of the apparent existing demand. Early in the Khanna Project, however, we learned that when we actually got out into village homes the problems were much more complex, especially in reaching the demographically important younger women who were still ambivalent about limiting family size. From this intensive field work we developed the hypothesis that child survival is a precondition for general acceptance of family planning. We also developed the concept that the major cause of mortality and morbidity in children is synergism of malnutrition with common infections that would otherwise be mild. In 1965, as we were starting the Narangwal population project there was still hope that a massive IUD program would rapidly meet village needs. From our work in the villages we realized very quickly that the excessive official pressure and lack of follow-up would create serious public reaction.

We set out to find out what would be the minimum health services needed to get acceptance of family planning. From the annual Narangwal Conferences held in connection with our five year study of the Rural Orientation of Physicians it became increasingly evident that a major deficit in developing rural health and family planning services at the village level was lack of clear understanding of the role and responsibilities of members of the health team. We could not train doctors for rural service because, in spite of all the theorizing, no one really knew what doctors could or should do. High government officials from the Minister of Health down urged us to undertake intensive research on the organization of village services. We developed three parallel projects: the Functional Analysis of Rural Health Centers applied systems analysis and operations research methods to government primary health centers; the project on Interactions of Malnutrition and Infection on Weaning Age Children measured the effect of different inputs of infection control and nutrition in improving child development and survival; the third research project was the Narangwal Population Project. An experimental design was developed to test several hypotheses in a practical field situation.

#### Objectives

The primary purpose of the Population Project was to conduct a scientific analysis of the relative impact on family planning utilization

of various packages of health services. A parallel research objective which has become increasingly important is the practical process of developing the service inputs.

The hypothesis testing has been described in detail in previous 211-d reports. For scientific understanding as well as practical programming, it continues to be important to compare the effect of maternal care and of child care in promoting family planning. To provide such measurements, a massive effort was necessary with a team of social scientists doing surveys, public health scientists studying the epidemiology of reproduction and of morbidity, and a major statistical effort to analyze both input and output.

The second research objective was even more practical and involved working out the service packages for experimental input. This proved as complex and difficult as developing the measurement tools for the research. A basic guiding principle was that we would use only field procedures that could eventually be applied on a mass scale in government health services. All activities are carried out by auxiliary nurse midwives. We planned as best we could patterns for simple service in order to provide initial orientation and training. Even with fifteen years of work in Punjab villages, we learned that we really did not know much about what would work. For each cell of the experimental design we picked one or two villages in which to develop an appropriate package of services. We evolved patterns that seemed to work. Most effective was a deliberate effort to nurture a feeling among the auxiliary nurse midwives that they were most important to our research because they could tell us what did not work and also come up with the best ideas of what might be tried. A mutual participation of professionals, auxiliaries and village people in evolving innovative approaches was particularly necessary when we began to crystallize thirty entry points for routinely introducing family planning in maternal and child care. We learned that realistic and feasible routines could be evolved by avoiding prejudgement of approaches but rather encouraging an active exchange of experience in weekly training sessions.

#### Misunderstandings About Narangwal

Certain misunderstandings about Narangwal need to be cleared up.

1. "The money input at Narangwal is beyond the resources of developing countries." This statement is irrelevant because research is always more expensive than a mass program. If someone were developing a new vaccine no one would say that the money and facilities used for the basic research should be limited to what would be available for a mass vaccine program. Basic laboratory research is recognized to require sophistication and precision to short circuit the tedious, empirical trial and error that only rarely leads to scientific progress. Community research is far more complex than basic science and deserves equivalent resources. It seems strange that in practice the fallacy persists that if enough experts talk long enough around conference tables an appropriate program will emerge that can be carried immediately to a field demonstration. Obviously, certain things are known and should be applied immediately. To make progress

in understanding the complex and uncertain range of new approaches needed to reduce birth rates in the villages of the world requires much sophisticated research. But this does not need to hold up active implementation of what is already known.

At Narangwal, our research has admittedly been expensive. However, our service input into the villages has deliberately been kept down to a cost level that is reasonable for the Punjab. We can demonstrate through our functional analysis studies that to introduce the Narangwal pattern into all present health facilities would increase the Punjab health Budget by only 6%, while increasing the potential family planning user level by over 50%. If the Narangwal pattern of coverage were to be extended to all of the villages of the Punjab it would increase the health budget by about 60% but increase family planning users by about 800%.

2. A second fallacy is the statement that the findings at Narangwal will be irrelevant because the Punjab is developing so rapidly that "anything you do in the Punjab will succeed." We know from bitter experience that this is not true because many things we have tried in the Punjab did not succeed. We have been fortunate to be working in villages where a dramatic social revolution based on the "Green Revolution" is occurring. When we started this project, India badly needed a success story in family planning. It seemed reasonable to start where the chances of succeeding and therefore learning something would be best. In addition, in many areas of the world rural communities are rapidly moving into a stage of rapid development and the Narangwal experience is important in helping to understand how to use the development process in promoting family planning.

A second question is whether integrated health and family planning services should be introduced together in stagnant agrarian societies where development has not yet been started. We continue to reiterate to the GOI that we are at the point where we would like to apply what we have learned at Narangwal to less developed areas to see if such services can be an entering wedge in the development process. We think that it can.

3. A third fallacy is that we have had at Narangwal an unusual selection of rural workers who could not be generally reproduced in a national program. Our staff are unusual now in their esprit de corps, hard work and dedication; that they were not unusual by the customary standards when they joined the project is indicated by the fact that in the transition to support by the Indian Council of Medical Research the first review of qualifications led to a cut in salaries by over 50% because they said our people were not qualified for the jobs they were doing. After a site visit committee from the ICMR observed our staff at work in the villages, they revised their judgement and accepted our salary scales. It is most gratifying to see the change after an ANM joins our staff as a shy and frightened girl whose whole previous training had been designed to hammer her down into subservience, then under go a dramatic personality shift within six months on the project. They develop confidence and speak forthrightly to the highest official. They know their village and their work in a way that impresses all our visitors.

It is our conviction that this contagion of spirit is absolutely essential to improve services in developing countries. We visualize the potential of a series of demonstration projects based on Narangwal where village workers can come from other places to work with our girls. Then as they go back to training centers we would expect them to carry some of the same spirit. We have already begun to see this happen with visitors from other projects.

There has been much criticism of the halo effect of demonstration projects. We contend that while there is an admitted fall in performance from a research project to a demonstration project and then even more in the shift to mass implementation. The important change that should be measured is not the amount by which the mass program falls short of the level of performance of the original research effort, but rather how much the work in the mass program has been improved above what it would have been without the research and demonstration input. If a demonstration project concentrates too much on just doing things as they might be done in a mass program, it will end up not doing any better than current government programs. We have developed the dictum "you have to be different to make a difference."

4. It is also not true that the Narangwal input service packages cover more functions than can be accommodated in routine national programs. We have concentrated on developing village level modules of services with the idea that if the pattern of the local module can be worked out then an administrative structure can be developed by putting together multiple modules as desired. A major part of developing a module is to develop an appropriate supervisory and referral pattern. The functional elements that are covered at Narangwal are (1) the continuing use of family planning through a routine system of using 30 entry points in maternal and child care; (2) maternity help; (3) child care concentrating on immunization and early care, i.e., dehydration in children; (4) nutritional supplements building on what the family and community can provide; (5) simple medical care with routine but effective drugs; and (6) systematic supervision and continuing education.

An example of the steps needed to develop a simplified care pattern has been the way we have worked out our relationships with the dais (untrained indigenous midwives). We decided at the beginning that we would not take deliveries away from the dais, but work with them. The ANM's were encouraged on an individual basis to develop friendly relationship so that they would collaborate in antenatal and postnatal care. The dai would then conduct a normal delivery and use the ANM as a channel for referral when complications occur. Through discussions and sharing of experiences in weekly continuing education meetings there was a deliberate and progressive aggregation of experience in the whole group because it became quickly evident that good working relationships were not easy to develop. We have now undertaken a detailed dai study in which we find out what their normal service procedures are, then we change only those activities that are clearly deleterious while permitting them to continue previous practices which are either neutral or

beneficial, such as massaging with oil or doing the delivery in a squatting position. We have found that this approach is much more acceptable than previous educational efforts of dais which antagonized them by trying to get them to approximate the procedures of a hospital delivery.

It has been necessary to present this somewhat prolonged justification of the approach at Narangwal because we have encountered considerable misunderstanding, both in India and the United States, as to what has been going on and the rationale for present patterns of work.

#### Sequence of Negotiations with Indian Government

The past year has been a most difficult year for the Narangwal Project, along with all other American supported projects in India. A brief recital of events will be presented as a case study in the uncertainties of international field work and the dominance of political factors.

Because of our long and close working relationships with the Indian government, our Narangwal project was not interfered with during the time when other foreign projects were being terminated; even after the December war we were treated gently. In January a PL-480 grant from NIH that provided approximately 1/3 of our local expenses was cut off. Two days later, however, the Indian Council of Medical Research picked up the equivalent funding from their own research money. At the same time we were informed that the project was being "taken over" by the ICMR. We were warned that for a long term working relationship we would be better off with WHO sponsorship. In March we were able to finalize two years negotiation and the Director General of WHO designated Narangwal as their first Regional Reference Center in Rural Family Planning. In June a concatenation of four major complications converged at the same time. The Ministry of Foreign Affairs refused to extend the visa of Dr. Colin McCord, our Chief of Party, as part of the general process of cutting down AID staff in India. The Minister of Health decided to turn down the arrangement for Narangwal to be a Regional Reference Center partly because he did not like the WHO routine phrase which assumed that if there was no response in six weeks it would mean automatic concurrence. Third, the ICMR review of salary scales led them to cut Indian staff salaries by approximately 50% by eliminating allowances for rural housing and making drastic reclassifications such as designating our social scientists as "Social Workers." Fortunately, a site visit committee in August reversed this decision and reestablished reasonable salary levels. Finally, for the first time during our work at Narangwal, there was an assault on the personal safety of one of our woman workers. A local drunk scaled a courtyard wall at night and attempted to rape at gunpoint one of our best women doctors. This has led naturally to considerable police activity and serious morale problems.

In spite of all of these problems the work has continued with no significant interruption. Negotiations are progressing for a new relationship through WHO. There seems to be no question but that the Indian government wants to continue the field work and to use Narangwal as a base for developing demonstration projects in other states. A high level scientific review committee is to make recommendations this fall on the detailed continuing arrangements which will provide a new framework for relationships.

### Substantive Accomplishments in Research Programs

The principal development during the year was the full scale establishment of the Family Planning Only Cell of the experimental design. Delays in starting this cell have been explained in previous reports. In summary, the Indian government discouraged our starting because they said the policy decision had already been made to integrate services and they needed help on how to go about the practical task. We were finally able to get agreement to proceed in order to round out the original experimental design. We then had delays in finding staff with sufficiently focussed interest to develop this aspect of the work at a quality level parallel with the rest of our field work.

Dr. Nandini Nayar had just completed her MPH at Hopkins and joined our staff in the summer of 1971; she had all the desired qualifications. On the basis of previous efforts of the research team she was able to complete the preparations for the specific input package of family planning services alone, provide a framework for a focussed educational approach and general community development activities, and complete baseline surveys. To emphasize the educational approach most of the village workers in this cell are graduates of "junior basic teaching" (JBT) programs which provide essentially the same level of education as ANM's but the preparation is specifically for teachers in rural schools. In addition, an AMN, Lady Health Visitor and visiting doctor are available to provide the family planning services on the same basis as in the other villages. With an intensive training program these village workers are now actively involved in a focussed effort concentrating only on family planning.

The service activities in the other cells have continued as previously described. The major innovative effort continues to be in developing the entry points for family planning. The series of entry points associated with maternal care have been generally routinized and effectively implemented. They are readily scheduled in terms of a biological clock which represents the whole reproductive sequence from antenatal through delivery and postnatal care to child care. At various times in this sequence and in accordance with parity and home conditions, a series of appropriate approaches to discussion of family planning have been developed. It has been much more difficult to work out clearcut routines for child care, however, largely because the activities are less readily categorized.

Another major professional effort has been the development of a series of operating and training manuals. This activity has progressed from a simple collection of looseleaf mimeographed sheets which provided standing orders for particular activities to a progressively more systematized system of documentation. A complete operating manual specifically for our own family health workers was finalized during this past year. On the basis of this, we are now developing more comprehensive manuals which can be used in any health service and are less rigidly bound to the specific working routines at Marangwal. These general manuals will be more focussed in subject matter; for instance, the first has been already prepared on child nutrition. A

second on general child care is now well under way. The third on maternal care and family planning is being started. We view these efforts as having particularly high priority because of the need for such simple and focussed educational material for demonstration projects.

The second round of surveys for research purposes has continued during the past year. This will be particularly important in showing the impact of the various activities on intermediate variables in the research design such as those relating to attitudes.

Finally, a major and concentrated effort has been made by the statistical group to catch up on the data backlog. A considerable expansion in the team of coders and statistical assistants under Dr. R.S.S. Sharma has had a most productive year. The target of clearing the data backlog by June of 1972 was met. The punched cards are being transferred to tape. In consultation with Dr. Reinke decisions were made about which analyses would be conducted on computers in Delhi and which would be brought back to Baltimore for processing. Because of all of the uncertainties and laborious negotiations we have not been able to conduct our annual summer conference to review progress and have not, therefore, taken the time to pull together the current information on the status of family planning in the various villages.

B. Narangwal Nutrition and Infection Study

C.E. Taylor, C. DeSweemer, A. Kielmann, W.A. Reinke, C. McCord,  
D. Laliberte, I.S. Uberoi, N. Masih, F. Masih,

This continuing field project of the Narangwal Rural Health Research Center is now in its sixth year. A progression of research subjects is being covered around the basic theme of contributing to better understanding of the interactions of malnutrition and infections during the weaning period. The basic experimental design continues with four separate study groups among a total of ten villages in which children from 0-3 years are offered different combinations of services. One group gets a combination of nutritional supplements and curative and preventive care. Another group receives nutritional supplements alone. A third receives curative and preventive care. A fourth is a control receiving only sufficient simple symptomatic care to maintain cooperation. At the start a baseline period of observation of at least one year with only symptomatic care was provided in all villages. At least 2 years of observation have now been completed in all villages. While data are being systematically analyzed we are planning to shift the emphasis in these villages to other subjects.

The major findings can be summarized as follows:

1. Moderate improvement in growth, as indicated particularly by weight, is associated with nutritional supplementation, especially when comprehensive medical care is provided. To our knowledge, this is the first time that a field project in a natural population of children has been able

to demonstrate improved anthropometric measurements resulting from a deliberate program of nutritional supplementation and care. Developmental differences have been observed many times, of course, in relation to differing economic and other conditions, but previous controlled trials have shown no difference.

2. Mortality rates have been significantly lowered among children 12 - 35 months of age.
3. Hemoglobin levels have been significantly improved.
4. The effects on morbidity are equivocal and further analyses are needed.
5. A hard core of children with resistant malnutrition remains among whom all effort to provide care only led to relapse. This group includes a large concentration of girls from families with many children. The inescapable conclusion is that this problem will be resolved only when adequate family planning is available. During the past year, active family planning has been introduced into these villages to record its effect.

Also in the past year particular attention has been given to getting more community participation in care. They had always provided facilities and general support. One of our greatest costs is for food for the feeding centers where children are provided weaning foods after having been picked up through regular weight surveillance. We have now been able to get the cooperation of village panchayats to collect food at harvest time from farmers and then store it for feeding center use.

In the meantime, intensive computer analysis of the large amount of data is progressing. During the past year the analysis of the nutrition project pursued three major objectives:

1. Measuring service program effect
2. Examining factors which may influence growth
3. Relating growth and morbidity

Dr. William Blot joined the Department in July as statistician. He has had past experience in growth studies and his expertise proves particularly helpful in clearing the complex analytical questions in each of the above mentioned areas. In view of the considerable progress made objectives 2 and 3 may be accomplished before January 1973. Some questions raised in objective 1 can only be dealt with once the field data for the whole period from 1968-72 are available in Baltimore.

C. Epidemiological Studies of Leprosy in India

C.E. Taylor, E. Elliston, B. Chatterjee

Emphasis has been on finalizing production of the M. leprae leprolin, testing it in the Bengali villages under study and in Guinea Pigs,

and analyzing the data produced in these field tests. Cross reactivity between leprolin and PPD G has been observed, but none between leprolin and PPD S. By using the technique of identifying the homologous antigen by the largest skin response, of 10 asymptomatic people from whom AFB were isolated by biopsy exam and who produced positive leprolin reactions 70% were larger than those of the Gause antigen. The rate of leprolin PPD G in the total population (Chad) was 45%. Of 9 people clinically diagnosed as old leprosy 78% had a skin response to leprolin greater than to PPD G. These findings further support the hypothesis that skin testing with leprolin can lead to identification of past leprosy involvement and that acid fast bacteria found in skin may be leprosy organisms.

D. Feasibility of Involving Indigenous Medicine Practitioners in a Government Oriented Family Planning Program in India

Sunny Andrews

The main objective of the investigation is to study the interface between the traditional and modern systems of health care delivery, especially in family planning services. More precisely, the study aims at assessing attitudes of the administrators, providers (both traditional and prospective) and recipients of family planning services towards the involvement of Indigenous Medicine Practitioners in the functioning of family planning programs.

A sample of the populations of 9 villages in Kerala State and the practitioners of both modern and indigenous medicine systems in the area were interviewed. Analysis has been aimed at testing out the dimensions and implications of the inclusion in government programs of the IMP's from the points of view of the different groups involved.

Early impressions from the analysis: 1. There is a definite trend of change toward the increasing use of modern medicine among these village communities for care of illness. Among the indigenous systems of medicine, Homoeopathy is preferred and used by a large proportion of the households for children's illness. Ayurvedic treatment is preferred and used mostly in postnatal care. Dais have very little practice as the community is becoming more and more aware of the free and safe care rendered by modern medicine (government) facilities.

2. Knowledge of family planning and methods for fertility control is quite high among the community (especially about methods that are currently publicized extensively in India). Attitudes towards family planning are quite positive among a large proportion of the couples. Education, religion and income level are factors that seem to affect the attitude towards family planning. Even though the level of knowledge and attitude are favorable for promoting family planning programs, they seem to have had limited influence on promoting use of family planning.

3. The community is quite receptive to the idea of involving IMPs in family planning programs. The health center staff are aware of the problems in communication on a subject such as family planning but are willing to accept the IMPs as partners in this venture because a good proportion believe that IMPs can influence the local people better than they can. A sizeable proportion of IMPs express willingness to participate with the government in family planning promotion programs even though the extent of the offer and their expectations differed considerably.

E. Economic Studies in India

A. Sorkin, H. Takulia

The Punjab Birth Rate Project-- The purpose of this study is to determine the relative strength of a number of social and economic variables in terms of their influence on the declining birth rate in Punjab. Data collection commenced last year and will be completed in the summer of 1973. It is expected that the study will indicate whether economic and social change or family planning was primarily responsible for the decline in the birth rate which has taken place.

F. Nutrition and Health Care in Peru

G. Graham, J. Baertl

I. Major emphasis is in research in Peru

- A. Nutrition - sponsored by NIH and AID
  - 1. Evaluation of new protein sources
  - 2. Management of acutely malnourished infants
  - 3. Long-term consequences of malnutrition
  - 4. Ecology of malnutrition
  - 5. Significance of low intestinal lactose
  - 6. Trace mineral metabolism
- B. Health care delivery to the very poor
  - 1. Slum "clinic"
    - a. physicians - pediatrics, medicine, surgery, Ob-Gyn
    - b. nurse pediatric practitioners-trained on job
    - c. locally recruited and trained health workers
      - 1) laboratory technicians
      - 2) X-Ray technicians
      - 3) doctor's "assistants"
      - 4) pharmacy
      - 5) clerical workers
  - 2. Health "aides" recruited and trained
    - 1) health education
    - 2) massive immunization program
    - 3) nutrition education
    - 4) introduction to family spacing programs
  - 3. Collaboration with family spacing programs
    - a. Integration with health services
  - 4. Community participation
    - a. Payment of small fees
    - b. Participation in planning and direction
      - 1) aimed at eventual taking over

G. Nigeria

R. Wright, C. Taylor, N. Cunningham, F. Nass, R. Morgan, K. Ransome-Kuti

We are informed by Dr. Ransome-Kuti, Chairman, Department of Pediatrics, College of Medicine, Lagos University, that the project proposal (first drafted in 1967) to train nurses and midwives as primary care agents in maternal and child health and family planning has finally (through many redrafts that saw responsibility shift from the Department of Community Medicine to the Department of Pediatrics and the Child Health Institute) cleared all national hurdles and met all requirements of AID/Nigeria. The proposal now awaits AID/Washington clearance. Johns Hopkins has been requested by Professor Ransome-Kuti to be the consulting organization for development of the project. Dr. Morgan plans to return to the U.S. for the academic year 1973-74 to work at the Harvard School of Public Health. The Gbaja Pilot Project in the training of nurses and midwives as primary care agents continues to operate on UNDP funds, while awaiting transformation to a full-scale operation, Dr. Nicholas Cunningham and a nurse-midwife (yet to be recruited) will be the chief consultants from Johns Hopkins.

H. Iran

R. Wright, S. Solter

Negotiations have continued on a request to act as consultants to assist the Community Medicine teaching program of Pahlavi University School of Medicine at Shiraz, Iran, in the development of population and family planning teaching to better prepare medical students for their work in the National Health Corps. In January, 1972, Dr. Wright visited Shiraz under the auspices of the Iran Foundation. It was agreed at that time that a population "intern" would be sent out to work with Dr. Ronaghy. Dr. Steven Solter is now there. Meanwhile, personnel and administrative changes at AID/Washington have delayed approval of our project proposals. Prospects are reasonably good for approval in a few months, with a state-side coordinator to assure that the efforts of North Carolina University and Johns Hopkins University at Shiraz are in tandem.

I. Indonesia

1. Health Planning in Indonesia

W. Reinke

Faced with the problem of underutilization of government health services, the Government of Indonesia has embarked upon a large scale program aimed at the Strengthening of National Health Services. A major concern of the program is the reorganization of MCH services and their integration with the expanded family planning program.

As a part of this effort the National Institute of Public Health, Surabaya, has been asked to develop a series of field research projects designed to test the impact of various innovations. During a two-month period earlier this year Dr. Reinke served as a W.H.O. consultant to the Institute staff to assist them in developing research protocols in this regard. As a result approximately twelve separate investigations have been initiated, all within the framework of a total systems analysis of the health sector.

2. Assistance in Development of the Faculty of Public Health, University of Indonesia, Djakarta

T. Baker, W. Reinke, M. King, I. Sirageldin

An excellent example of the activity that 211-d support makes possible was the advisory project for AID/Indonesia in developing and expanding the faculty of Public Health in the University of Indonesia. Without 211-d support, there would have been no professional expertise available at Hopkins with familiarity with both the problems of planning for Schools of Public Health and with the health problems of Indonesia.

We worked in coordination with consultants from the World Health Organization and the China Medical Board and the nucleus staff of the proposed School to develop a plan, based logically on the health needs of the country, rather than on traditional patterns of the West. We built the plan in progressive steps from : 1) the major health needs of Indonesia (such as population control, etc.); 2) the types of personnel needed for programs to help meet the needs; 3) the type of faculty, students and curriculum; 4) building plans and equipment lists and finally, to 5) budget and sources for financing.

In addition to the direct work of consultants in Indonesia, the Department of International Health was able to backstop requests such as those for book lists for the proposed library, etc.

In summary, the Indonesia project shows clearly the value of long-term institutional support in providing the backup necessary for successful international technical assistance.

J. Consultation to the Territory of Papua, New Guinea

W. Reinke

During the past year or so the government of Papua New Guinea has established a health planning unit which has been asked to identify alternative approaches to the delivery of health and family planning services during the period leading up to and following independence in 1974. The principal external adviser to the unit is a graduate of the Johns Hopkins program for health planners, and the chief of the unit expects to attend the course in 1973.

Dr. Reinke met with the planning group in Port Moresby in order to review progress to date and to offer suggestions regarding the thrust of future work. While in Port Moresby he also met briefly with persons who are engaged in specific projects concerned with the assessment of health status in the country.

K. Bangladesh

C. McCord, C. Taylor, H. Mosley, I. Sirageldin

Johns Hopkins involvement in trying to help Bangladesh started well before the beginning of this new country. At Johns Hopkins we have an unusual concentration of scientists who have done field work for prolonged periods of time in the former East Pakistan. Several have been involved in the work of the cholera research laboratory, e.g. Dr. Henry Mosley, Dr. Lincoln Chen, Dr. William Greenough, Dr. George Curlin, Dr. Al Summers. In addition, others have conducted research in East Pakistan in connection with the national family planning program, especially Dr. Larry Green and Dr. Ismail Sirageldin. A large number of Bengali students have taken their graduate training at Hopkins.

Because of this unusual concentration of interest, there was considerable Hopkins contact with Bengalis during the troubles of the past year. Our CMRT research group in tropical medicine in Calcutta made an important contribution to the care of the refugees, especially in cholera control.

It now seems probably that Hopkins will be able to work in Bangladesh in at least three major types of affiliations. The Hopkins CMRT will probably move from Calcutta to Dacca so that an active research program will be developed in tropical diseases generally and especially in cholera and diarrheal diseases. Dr. David Nalin has been working in Dacca on this program since the Spring of 1972. Under the general heading of demography and family planning there are already four major data pools that are being analyzed at Hopkins.

1. Dr. Henry Mosley's demographic data from the Matlab study area.
2. Dr. Sirageldin's impact of family planning study in 1969 on a statistical sample of 3,000 people from all over the country.
3. Dr. Larry Green's abundant data on motivation for family planning gathered at TREC during the time he was with the University of California team there.
4. Dr. DeVries detailed psychological studies of attitudes to fertility in one village.

On the basis of these data important studies can now be continued which will be particularly illuminating during post-independence development.

The third major activity is the possibility that is now being negotiated by Dr- Colin McCord on USA core funding for project development. This is a proposal to work at the village level in applying what has been

learned at Narangwal to the particular situations of Bangladesh. The Thana of Companyganj in Noakhali District with 130,000 people has been assigned to this project by the government. This is a particularly backward and conservative area and we are told that if we can show results in Noakhali the program will work anywhere. Activities will be focussed at the village level with auxiliaries being used in a streamlined service reaching into village homes to provide family planning and basic health services. Local village women will be trained to provide family planning for women together with minimal maternal and child health. The present pattern of integrating services for malaria, small-pox and other categorical programs will be worked out in such a way that these workers can also serve as male family planning workers. Appropriate supervisory and referral personnel and an organizational framework will be developed. An institutional base will be provided through the Institute of Public Health in Dacca and the Rural Institute in Comilla. The Hopkins team will be actively involved in setting up the project during the first two years. Then we will be based at the Institute of Public Health in Dacca in order to apply more generally what has been learned at Companyganj while the service program continues for the rest of the five year period of the project. Regular evaluation will be provided by a special evaluation team also based at the Institute of Public Health. Funding for this project is being explored. The Bangladesh Government has expressed great enthusiasm and is eager to have work start as soon as possible.

L. Nepal

C. Taylor

For many years members of the Department of International Health have had close association with development programs in Nepal. Dr. Taylor conducted the first health survey that was done in that country in 1949 some three years before the coup that opened Nepal to foreign visitors. Since then we have undertaken numerous consultations for AID and others and have been particularly close to the development of family planning services. A number of the present leaders in Nepal have been our students.

During the summer of 1972, therefore, it was particularly interesting to conduct a consultation for the International Development Research Centre of Canada. This is the research arm of their foreign aid agency IDA (Canadian International Development Association). IDRC had tentatively committed itself to provide the research base for the new Tribhuvan University Institute of Medicine. The purpose of the consultation was to work with Nepalese in developing plans for research and to work out arrangements for implementation.

Under the new Nepal educational plan all of the educational and training programs of the country are being brought together under thirteen institutes in the University. The Institute of Medicine is to coordinate and reorganize all training of health and family planning

workers. An early decision was not to go about this new effort on an ad hoc basis but to start with basic manpower research so that they can start long-term planning for the sorts of personnel that can be fitted into a coherent national program. The two major research emphases then are to be, first, a manpower study of health and family planning personnel; second, a functional analysis for more precise definition of field roles and responsibilities so that mechanisms can be developed for progressively building Nepali competence to provide manpower as they are needed for health and family planning services.

The research program that was developed in association with Nepali leaders was based on the following principles: 1) to focus on practical needs of Nepal; 2) to develop Nepali research competence within the continuing structure of various departments and institutes; 3) to develop a research core at the Institute of a small group of specialists who would be multidisciplinary; 4) the research on manpower should not only get information on manpower presently available but more specifically concentrate on training needs to help the Institute with planning its own future; 5) a major manpower problem is the future need for family planning workers and their relationship with health personnel; 6) a major objective in all of this research will be to develop planning competence for both health and population.

One recommendation following the consultation was that the title of the Institute be expanded to "Institute of Medicine and Family Planning." This is particularly important because with the cessation of AID support for malaria eradication, the government is rapidly moving toward integrating all services at the field level because they find it impossible to finance separate services. This means that it will be particularly important to work out appropriate means of preserving the gains from present family planning efforts in the general move toward integration. It seems likely that by setting up projects specifically to study these issues it may be possible to provide facts to help government policy makers and planners in their eventual decisions.

M. Brazil - Appraisal of Health Planning in Brazil and Advice to the AID Mission on Activities in the Health Sector

T. Baker

Starting in the summer of 1971 and continuing through the 1971-72 academic year, an appraisal was made of health planning capacity within the various governmental institutions of Brazil. Follow-up was maintained through correspondence and individual contacts and meetings with the Secretaries of Health from the various states, officials from the educational institutions and sources of financing. The major recommendation was that the Ministry of Health at the current time had neither the authority for, nor the capacity for extensive planning efforts for the total health sector. It became apparent that the source of power for health planning was in the state Health secretariats and in the Social Security System. It was also clear that considerable expertise would need to be developed by training programs

for specialists in health sector planning, administration, and evaluation.

Although the initial consultation was funded by AID directly the continuing follow-up efforts would not have been possible without 211-d support. In the development of technical assistance with nations such as Brazil, a long-term time horizon is often necessary. Without a basic core support such as offered by 211-d type grants this long-term development is difficult if not impossible.

V. Continued -

POPULATION DYNAMICS - UTILIZATION OF INSTITUTIONAL RESOURCES IN LESS DEVELOPED COUNTRIES

- A. STUDIES ON RANDOMIZED RESPONSE TECHNIQUE (P. T. Liu and W. H. Mosley)  
R. V. Rider and L. P. Chow) In connection with and as an extension of "Epidemiological Studies of the Outcomes of Pregnancies in Taiwan", some theoretical work on new randomizing methods and devices has been developed. They include multiple trials of two related questions per respondent in order to increase the efficiency of estimate, and new devices for both the qualitative and quantitative use of the randomizing response technique. The plan is to undertake a pilot study on the feasibility of these new methods in Baltimore and when proven to be useful, to develop a field program to further study their feasibility for a survey of sensitive characteristics in different countries of different cultural settings and with different levels of education.
- B. ANALYSIS OF IUD DATA IN TAIWAN (L. P. Chow) In collaboration with the Center for Population Planning and Population Studies Center of the University of Michigan, continued analysis was made of IUD data collected in Taiwan. A special emphasis was made for the study of the medical correlates of IUD effectiveness and retention. A paper entitled, "Post-Insertion Medical Symptoms and Removal of IUD; Taiwan IUD Follow-up Study" has been prepared jointly with collaborators at Michigan and submitted to Studies in Family Planning. It was disclosed that some specific type of medical symptoms, particularly bleeding which appears during the first week after insertion, resulted in higher removal, and that treatment of such symptoms was effective in lowering the removal rate only when the symptoms totally disappeared after the treatment. The plan is to continue to undertake the studies on IUD performance including the development of a more satisfactory method for the computation of all segment rates of IUD and of stochastic models to describe the effect of various medical symptoms in IUD retention. Studies on the behaviors of reinsertions have been rather neglected and the plan is also to pursue the studies in this area for better understanding of the IUD performance.
- C. EVALUATION OF TAIWAN'S FAMILY PLANNING PROGRAM (L. P. Chow) Taiwan's family planning is unique because its total inputs and accomplishments are extremely well recorded and its fertility data of good quality are readily available. Collecting and analyzing of related data for evaluation of the program performance and its impact on fertility decline in Taiwan continues. A question as to whether current family planning programs will be able to achieve their demographic goals has been an issue of hot debate among demographers and Taiwan is probably among the few countries in the world which have data to provide part of the answer to such fundamental issues. An article summarizing the program accomplishment and fertility trend in Taiwan since the inception of the program in 1964 up to 1971 is under preparation.
- D. PAKISTAN NATIONAL IMPACT SURVEY, 1968-69 (R. W. Osborn) Drafts of the introductory chapter and the final summary and conclusions chapter of the report of the Pakistan National Impact Survey have been prepared. It is expected that these, and the previously prepared additional chapters, will be reviewed for publications by September, 1972. The data contained in this report will be the subject of an additional investigation, in collaboration with Dr. I. Sirageldin, on the development of a family planning program evaluation model. The main features of this proposed analysis and a request for necessary financial support have been submitted for review.

- E. **DEMOGRAPHIC STUDIES IN RURAL BANGLADESH** (W. H. Mosley and John Stoeckel) These studies are based on census data, vital registration, and special surveys collected on a population of 112,000 persons in 132 villages in rural Bangladesh between 1966 and 1971. These studies aim at providing detailed descriptive data on population dynamics in these rural Asian vil-lages with analysis of the factors associated with the patterns of fertility, mortality, and migration.
- F. **EPIDEMIOLOGICAL STUDIES OF THE OUTCOME OF PREGNANCIES IN TAIWAN** (R. V. Rider and L. P. Chow) The study seeks to estimate the frequency of in-duced abortion, its contribution to pregnancy wastage, and its social and demographic effects, including its implications for family planning programs. 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 have been interviewed to obtain retrospective data on their use of induced abortion. The study is aimed at developing and improving methodology applicable to such investigations as this. Field work completed January 1972.
- G. **POPULATION DYNAMICS AND MATERNAL AND CHILD HEALTH IN RURAL ETHIOPIA** (L. P. Chow) For the development of the pilot research project under the University Services Grant of A.I.D., Dr. Chow visited Ethiopia for consulta-tion with his collaborator and officials of the Haile Sellasie I University and local A.I.D. officials in Ethiopia, from March 14 through 19, 1972. A research proposal has been prepared and has been accepted and cleared by the Haile Selassie University authorities. Clearance by the AID/Ethiopia is anticipated. The objectives of the pilot study are to collect basic data related to maternal and child health and human reproduction for better understanding of the nature and magnitude of population problems and the knowledge-attitude-practice of fertility control methods by the rural popula-tion in Ethiopia. It is also hypothesized that through frequent contact with health personnel through the study, the awareness of health and family planning problems and the need and demand for related services for women in the study area will be considerably enhanced. Research of this type for the modification of community attitude in favor of family planning has been successfully used in Taiwan. The idea is to apply a similar technique to promote family planning as an integral part of maternal and child health services in Ethiopia, where the general climate is still not mature enough for the implementation of a large scale family planning program.
- H. **SIALKOT BENCHMARK AND EVALUATION STUDY** (R. W. Osborn) In 1970 an experi-mental program involving a continuing door-to-door family planning delivery system was put into operation in Sialkot District, Pakistan. The intent of this non-clinical approach is to provide regular and continuous contact between program workers and eligible couples in the area. The intent of the present study is to provide benchmark data on initial fertility and contra-ceptive levels and to measure changes in contraceptive use over the two years of program operation. Data are taken from (1) specially compiled service statistics and (2) from a sample of 10,000 records of couples in the District. The effect of repeated visits on client behavior and changing attitudes on

VI. Cost and Support Allocations.

Following from the discussions in section IV. A, we have, as in previous years, used the distribution of effort of Department of International Health faculty as an indicator for allocating overall expenditures. This is indicated in the table below for all International Health faculty supported from 211-d during the year, in terms of the three principal areas of activity under the grant.

	<u>211-d</u>			<u>Other Support</u>
	<u>Health</u>	<u>Population and Health</u>	<u>Population</u>	
Baker, T. D.	4	20	20	57
Bohnert, S.			100	
DeSweener, C.			17	83
Elliston, E. P.	84			17
Ferguson, D. C.	6	40	40	15
Fornan, A. M.	10	15		75
Graham, G. G.	6	10		84
Hall, F.			100	
McCord, C.		6		95
Meredith, J.	30	40	5	25
Nass, F.	10	60	20	10
Newman, J. S.			44	56
Reinke, W. A.		11	30	60
Sangal, S.			100	
Sorkin, A.			4	96
Taylor, C. E.	23	18		60
Wright, R. D.			5	95

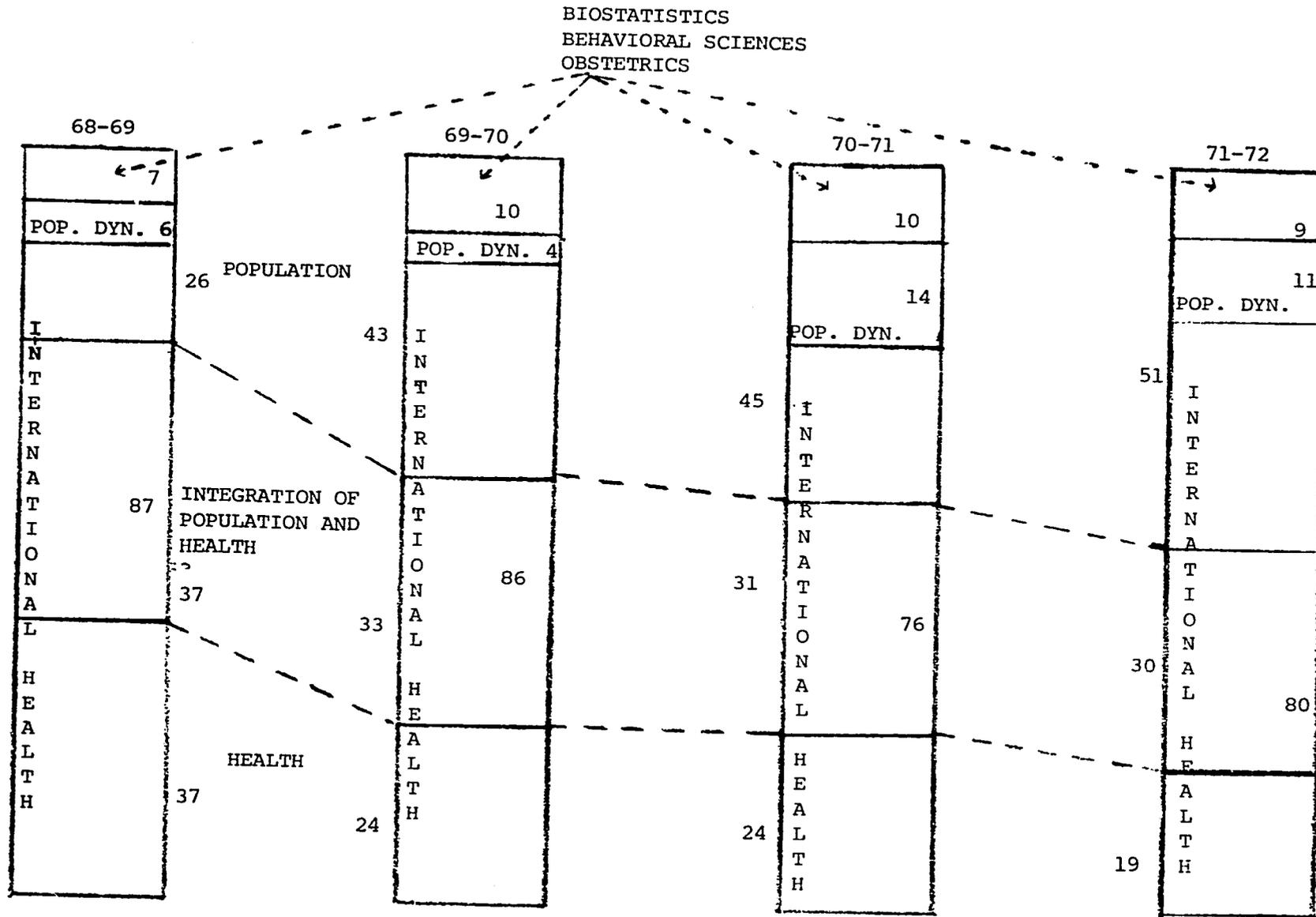
These percentages, when weighted for salary levels, combined, and extrapolated to overall expenditures, yield the following breakdowns:

	Health	Integration of Health and Population	Population (Dept. Int. Health only)	Population (All other Departments)
Dept. of Interna- tional Health 211-d Expenditures	24	37	39	
As per cent of all 211-d Expenditures	19	30	31	20

The diagrams on the following page show the year-by-year trend of these breakdowns since the inception of the grant.

Of total International Health expenditures during the year, 211-d accounted for 28 per cent. Government support for research in India, which is primarily in the integration of health and population area, accounted for 49 per cent, while other governmental support sources, primarily for the health area, constituted 16 per cent. The remaining 7 per cent, from private organizations, was applied to a broad spectrum of activities.

Percentage Allocation of 211-d Expenditures



## VII. OPERATIONAL WORK PLAN

In continuation of the major theme for this year's report, which is interdepartmental collaboration, we expect to emphasize such relationships during the coming year. Now that the Population Center is firmly established, we will use its framework for more effective cooperative arrangements. The Director of the Center is Dr. Henry Mosley, Chairman of the Department of Population Dynamics. The Deputy Director is Dr. William Reinke, Professor of International Health. Thus far, the Population Center has served mainly as a channel for two AID grants, the University Overseas Population Internships and the University Services Agreements. An application has been submitted to NIH for additional Population Center funding which would be to provide basic services such as support for a Data Bank, Computer Facilities and a Population Laboratory in the City of Baltimore. From all present indications, the potential of effective collaboration is particularly good between the Departments of International Health, Population Dynamics and GYN and Obstetrics.

There will be continuing progress in strengthening courses. A major revision is being made in the teaching of the Introductory Course for Population Dynamics. Dr. Mosley is taking considerable responsibility for the lectures himself.

Another major teaching innovation is that we are going to try to start a program for population planners in parallel with our existing program for health planners. The health planners program has now been going almost ten years and is not only one of the first two planners courses in the world, but also is recognized to provide world leadership in this area. Groups of senior planners are brought for intensive workshop experience for either two-month or four-month periods. With this activity well stabilized we now feel that we can proceed with developing a similar intensive experience for specialists in Population Planning.

In our overseas field projects, the major uncertainty continues to be what is going to happen to the Narangwal Center. The Indian government assures us that they will continue the activity and especially the two years that are still to go in the population project. It is not clear yet what the role of Johns Hopkins will be. We expect however, that we will be able to continue our relationship through WHO sponsorship. In fact, in some discussions in August Indian government officials were asking that Hopkins get involved in the development of demonstration projects in other states. With the uncertain political situation in India, however, we recognize the desirability of maintaining a low profile.

We have been intensively involved in field work on the integration of family planning and minimal maternal and child health services since 1965 in both India and Nigeria. We expect to do all we can now to apply what we have learned at Narangwal and Lagos in other demonstration projects. It now seems probable that we will be conducting a major

demonstration project in Bangladesh in the Thana of Companyganj for a population of 130,000. It also seems likely that after a five year lapse, negotiations for a major project to apply what has been learned in the Gbaja Street Project in Lagos will be expanded into a general demonstration and training project for Nigeria. We have at least half a dozen specific requests from other less developed countries to get involved in similar demonstration projects.

On the basis of preliminary discussions with AID about Type 2-University Services Agreement projects for institutional development overseas, we have begun to negotiate in a tentative way with possible sites for such relationships. They include the American University of Beirut, the Institute of Public Health in Dacca, the School of Public Health in Jakarta, the Institute of Medicine in Katmandu, Yonsei Medical School in Seoul, Lagos University Medical College, Addis Ababa Medical College, University of Tanzania Medical College in Dar es Salaam, Cayetano Heredia Medical College in Lima, Peru and perhaps some institutions in Brazil.

We are increasingly conscious of the tremendous potential of conducting comparative studies in several countries where uniform methodology can be applied. Some of the subjects which such investigations can most profitably cover are: evaluation of family planning services, our functional analysis methodology for continuing systematic improvement of basic services at the village level; health and economic development; improved family planning and abortion methods, nutritional effects during weaning and manpower studies, especially concentrating on the role of auxiliaries in the health team.

This whole range of activities can be funded mostly from special grants. None of these activities can be developed effectively on a continuing basis unless we have the sort of core funding that has been provided by the 211-d grant. We reiterate the importance of some mechanism for providing this continuing support.

VIII. COMPLAINT ABOUT ADMINISTRATIVE CONSTRAINTS  
UNDER UNIVERSITY SERVICES AGREEMENT

We usually do not introduce into our 211-d reports any specific statements of problems. We do, however, have one important issue that must be mentioned at this time since there is discussion of the possibility of expanding core funding under the University Services Agreement to pick up the basic support which has been provided by the 211-d grant. We have found the University Services Agreement to be an extremely awkward and cumbersome mechanism. Tremendous delays are built into clearance processes. The bureaucratic red tape is in great contrast to the 211-d mechanism. It has become exceedingly difficult to get our faculty members to continue to work up new projects because of delayed negotiations and the frequent last minute turning down of approval under circumstances that create great embarrassment in our relationships with potential colleagues overseas. Major changes should be made in the provisions of the University Services Agreement if this is going to be the principal source of core funding in the future.

IX. Budget and Expenditures

<u>Line Items</u>	<u>Expenditures</u> <u>1971-72</u>	<u>Total</u> <u>Expenditures</u> <u>1968-72</u>	<u>Estimated</u> <u>Expenditures</u> <u>1972-73</u>	<u>Totals</u>
<u>Dept. of International Health</u>				
Salaries	\$203,835	\$ 764,627	\$248,000	\$1,012,627
Pilot & Student Projects	7,378	20,111	11,200	31,311
Fellowships	463	87,917	8,600	96,517
Travel	8,302	66,245	10,200	76,445
Other Direct Costs	<u>42,612</u>	<u>111,061</u>	<u>38,600</u>	<u>149,661</u>
Sub-total	<u>262,590</u>	<u>1,049,961</u>	<u>316,600</u>	<u>1,366,561</u>
<u>Other Departments</u>				
Salaries	48,972	192,295	49,198	241,493
Other Direct Costs	<u>3,692</u>	<u>3,858</u>	<u>1,802</u>	<u>5,660</u>
Sub-total	<u>52,664</u>	<u>196,153</u>	<u>51,000</u>	<u>247,153</u>
TOTALS	<u>\$315,254</u>	<u>\$1,246,114</u>	<u>\$367,600</u>	<u>\$1,613,714</u>

X. STAFF

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Alan L. Sorkin, Ph.D.  
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