ANNUAL REPORT

MATERNAL CHILD HEALTH AND APPLIED NUTRITION

MEHARRY MEDICAL COLLEGE

International Center for Health Sciences
in the
School of Graduate Studies and Research
Nashville, Tennessee

February 1, 1979 — January 31, 1980
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INTRODUCTION

A significant portion of the mission of Meharry Medical College is expressed in its commitment of empathy towards the disadvantaged of all origins. As a health sciences institution, this empathy can be translated into a commitment of improving the quality of life. It also inherently suggests a philosophical belief that knowledge not aiming to improve the quality of life is sterile and therefore essentially useless. This philosophical basis means that Meharry's educational and research activities must have this underlying central theme.

When we say "disadvantaged of all origins," this is deliberately intended to include a cosmopolitan society. Although there are geographical and cultural differences, the rapport and the plight of this country is shared in common with the people of developing countries. Therefore, the identification of problems and activities aiming towards resolution would be of vast benefit to all of these exceptional people at the lower stream of the societal strata. The International Center for Health Sciences is directed towards populations outside the continental United States and serves as a laboratory for practical experiences for both students and faculty.

The Center has become the focal point of many health professionals and graduate students concerned with the future of health care delivery and its role in the society as a whole.

Historically, the College has served students from many countries in Africa, and we anticipate for the foreseeable future,
a rather significant number of students from developing countries continuing to be involved in our graduate programs. It should also be pointed out that the learning process we advocate is that of a reciprocative nature, which requires an exchange of knowledge and information that will contribute to the amelioration and/or reduction of many problems.

Another function of the International Center for Health Sciences is to serve as the unit for identification of problems peculiar to the largest group of potential consumers of the services of the total college. So it is our belief that our efforts to achieve excellence should be concentrated on these kinds of problems.

The Center also serves as a focal point and as an auxiliary point for areas of considerable importance to the institution in general but perceived as less a problem to the individual units. For example, the general area of nutrition is of considerable importance to the institution as a whole, but not the individual units independently. The Center can serve as a kind of point of integration in terms of resolving problems relating to nutrition and the use of nutrition to solve other kinds of problems. The same thing might be said of immunobiology and biomedical ecology, which are subjects of considerable importance generally, but the Center and its kinds of activities being concerned with the prevention of certain kinds of diseases particularly parasitological diseases, serves as a focal and a facilitating unit for bringing the diverse interest of the college together.
THE INSTITUTION

THE COLLEGE

Meharry Medical College began in 1876 as the Medical department of the Central Tennessee College. In 1900, Central Tennessee College was reorganized as Walden University, and the Medical Department became Meharry Medical College of Walden University. Five years later, Meharry Medical College was established as a separate corporation and has remained so since that time.

In 1930, after gifts of three million dollars from the General Education Board, the Rosenwald Fund, the Harkness Foundation, and citizens of Nashville and Meharry alumni, the college moved to its present fourteen-acre campus adjacent to Fisk University.

Meharry Medical College includes the School of Medicine, the School of Dentistry, the George W. Hubbard Hospital, School of Graduate Studies and Research, and programs in Medical Technology, Health Care Administration and Planning, and Dental Hygiene. The college also has a long history of public health outreach programs in the city of Nashville, and in rural areas of Tennessee and neighboring states.

Among its multitude of accomplishments, Meharry Medical College has graduated almost fifty percent of the Black physicians and dentists now practicing in the United States.
THE CENTER

The International Center for Health Sciences (ICHIS), is located within the School of Graduate Studies and Research. The ICHS was established in July of 1971, under a grant from the United States Agency for International Development (USAID).

In the nine years since it's inception, the ICHS has trained several hundred African and American health personnel, in maternal and child health and multi-sectoral nutrition planning.

The Center houses a team of multi-national and multi-talented medical, public health, nutrition and administrative specialists, who serves as an international training and advisory corps in maternal and child health and applied nutrition.

One major function of the ICHS is to provide training, coursework and field internships, which will enable both African and American medical and health personnel to assist in developing and introducing integrated maternal and child health services in African countries.

Another major function, of the International Center for Health Sciences, through it's nutrition component, offers nutrition planning, research training, and technical assistance to developing countries.

A tertiary function of the Center is to act as a resource clearing house, with the ability to gather and disseminate information related to maternal and child health and applied nutrition. This function is designed to create a multi-lateral flow of information and expertise about maternal and child health and applied nutrition within the context of economic and social
development, between Meharry Medical College and medical institutions and public health organizations in the developing countries.

The Center is housed in a relatively modern two-story structure on the western parameter of the Meharry campus. The International Center for Health Sciences building is divided into offices, conference rooms, classrooms, multi-purpose areas and labs.

The relatively close proximity of Meharry's International Center to the prodigious academic community, which includes Fisk University, Vanderbilt University, Tennessee State University, Peabody Teacher's College and Scarritt College, helps to make the Center a focal point for international concerns.

HUMAN RESOURCES REPORT

A significant portion of the first year of the grant period, February 1, 1979—January 31, 1980, has been used in the development of an advisory infra-structure, the recruitment of core staff and the establishment of positive working relationships with various departments on campus.

ADVISORY COMMITTEE

Under the terms of the 122-d grant, one of the first priorities was the organization of an advisory committee for the International Center for Health Sciences and the selection of members. Because of the tremendous challenges outlined in the grant proposal, it was of paramount necessity that only people of high qualifications and who have a demonstrated interest in international health care in developing countries be invited to the committee.
The primary purpose of the Advisory Committee is to counsel, consult with, and make recommendations to administrative personnel in the ICHS with regard to the planning, execution, coordination and evaluation of programs. Other purposes are: to interpret the programs to the college community; to investigate multiple avenues for international involvement and to secure funding sources for Meharry Medical College; to review program problems; to assist in making the programs college-wide; and, to work toward the common goal of developing and expanding the capacity and capability of Meharry Medical College to address international health care delivery issues germane to developing countries.

The Advisory Committee meets regularly on a quarterly basis and other meetings are scheduled as the need arises. Members of the Advisory Committee are:

Dr. Ozie L. Adams—serves as a Nutrition Specialist and as coordinator of the Health Nutrition Research Program at Tennessee State University in Nashville, Tennessee.

Dr. Adams brings to the Center a great deal of expertise in the area of nutrition from an international perspective. In addition to spending fifteen months abroad, he also served as a consultant for the International Nutritional Planning Workshop held in Monrovia, Liberia, in February 1978.

Dr. Andrew Bond—Dr. Andrew Bond is the Dean of the School of Allied Health Professions, jointly sponsored by Meharry Medical College and Tennessee State University. Under Dr. Bond's leadership, the School of Allied Health Professions has developed
tremendously. Programs now offered include: Associate Science and Bachelor of Science degree programs in Dental Hygiene and Health Care Administration and Planning; Bachelor of Science degree programs in Medical Record Administrative and Medical Technology.

Dr. Bond has a general interest in Health Care Delivery Systems and nutrition intervention models in developing countries.

Dr. Jessy G. Devieux—has a joint appointment as an Assistant Professor in the Department of Family Medicine and the Department of Psychiatry. She also serves as the chairperson of the Behavior Medicine section in the division of Family Medicine. Dr. Devieux's expertise is in clinical developmental psychology.

In addition to teaching, Dr. Devieux has undertaken research in the areas of infant behavioral development; language development and intervention; parent-child interaction; and, family development and adjustment to family life.

Dr. Henry Foster—heads the Department of Obstetrics and Gynecology (OB/GYN) at Meharry Medical College and engages in many local, State and National activities. He is a board member of the planned parenthood federation of America and is an enthusiastic and active lecturer in the Maternal and Child Health summer program.

Dr. Joseph A. Gally—is an Associate Professor in the Departments of Bio-Medical Sciences, Bio-Chemistry and Microbiology at Meharry Medical College. Dr. Gally's research interest is in the area of immunoglobulin genetics and synthesis.
122 (D) GRANT ORGANIZATIONAL TABLE

President

Dean of Graduate School

I.C.H.S. Project Director

Advisory Committee

Applied Research

Education and Training

Advisory Capacity

Information Linkages

MCH

Fiscal Officer

Applied Nutrition

DB/GYN

Bio-Medical Ecology

Family Medicine

Pediatrics

Parasitology

Psychiatry
Dr. Edward G. High—Chairman of the Department of Biochemistry and Nutrition located within the School of Medicine. He has extensive experience in administration, research, teaching and international nutrition planning. Dr. High has taken part in training programs for African nurses and in nutrition planning workshops for African planners and health professionals.

Dr. Rudolph E. Jackson—chairs the Department of Pediatrics at Meharry Medical College. Dr. Jackson is a specialist in pediatric hematology and oncology, with an additional keen interest in growth and development and nutrition. In addition to serving as a lecturer at the Center, Dr. Jackson also heads the Malawi Core Team that is to depart for Malawi this summer to conduct a feasibility survey.

Dr. Harold W. Jordon—chairs the Department of Psychiatry at Meharry Medical College. Dr. Jordon is well known and has published extensively in such areas as, "Emotional Aspects of Long-Term Illnesses and Hospitalization, Mind Over Matter," and "The Role of the Advocate in Community Mental Health." Dr. Jordon currently is in the process of establishing a gerontology program at Meharry.

Dr. Edward L. Risby—is the Chairman of the Department of Biological Sciences at Tennessee State University. In addition to serving on the International Center for Health Sciences' Advisory Committee, Dr. Risby is also a parasitologist consultant for the Maternal Child Health Summer Program.
Dr. Horace Mann—is a dentist and the Assistant Dean of Student Affairs of the Medical College Complex. He is an Assistant Professor of Orthodontics and is a member of the Malawi Core Team.

CORE STAFF

A tremendous degree of time and effort has been taken in the recruitment and selection of highly qualified professionals as the core staff for the International Center for Health Sciences. The individuals academic achievements as well as their international experiences and perspectives were given paramount consideration in the identification and design of selection criteria.

In taking a holistical view of the aggregate achievements of the first year, perhaps the greatest measure of the Center's progress, has been in the high caliber of staff selected.

The core staff members and their individual academic backgrounds are as follows:

PROJECT DIRECTOR—Dr. Gladys Branic Hardy, a graduate of Alma College, the University of Chicago and the University of California at Los Angeles, is an administrator and research methodologist with experience in administration, survey research and teaching. She has conducted applied health services research and has taught courses on program evaluation, health services research and statistics. Dr. Hardy is primarily responsible for the overall administration of the 122-d grant and possesses
demonstrated managerial ability in the supervision of core staff. She has broad and varied experiences in the development of training and technical assistance, planning and evaluation systems and conference management activities.

Dr. Hardy speaks French and has traveled extensively in Europe and Africa and is a member of numerous health organizations.

ASSISTANT ADMINISTRATOR—Mr. Melvin P. Foote has completed a Masters degree in Public Administration from the University of Colorado. He has experience as a technician for a city government; personnel director for a county agency; in addition to having served three (3) years in Ethiopia, (two years as a peace corps volunteer).

Mr. Foote speaks two Ethiopian languages, in addition to presently being enrolled in a French course held at the International Center for Health Sciences building. He's a member of the American Society of Public Administrators, International City Management Association and the Public Personnel Directors Association.

FISCAL OFFICER—Mr. William Simons has a Bachelor of Science degree from Oakwood College with emphasis in Accounting and Business Administration. He worked for three years as Assistant Business Manager for the Los Angeles School system. He has also worked for the State of Tennessee, first as a State auditor and then for several years as the administrator of fiscal services with the State Department of Tourism, prior to coming to the International Center for Health Sciences.
NUTRITIONIST—Dr. E. Aban Oddoye is a human nutritionist with particular interest in the effects of nutrition on health and development. He is a Ghanaian who before coming to the United States, worked in the Ministry of Health and was involved with health delivery systems in the rural areas of eastern region. He also worked at the children's hospital in Accra, young mothers with malnourished children.


Dr. Oddoye is a member of a number of nutrition organizations, and also is currently learning French.

HEALTH EDUCATOR—Mr. Habteab Zerit is a public health educator with experience in organizing, planning and implementation of health service delivery systems in rural areas in Africa. He has also served as a lecturer in Public Health at Haile Sellasie I, University in Addis Ababa.

Mr. Zerit has pursued post-graduate studies in population dynamics at Johns Hopkins University and is currently a Health Educator at the Center. In addition to being fluent in Amharic and Tigrinya as well as English, he also speaks both Italian and French.

FRENCH INSTRUCTOR—Ms. Rosa Means received her undergraduate training in French and Spanish from North Carolina Central University in Durham, North Carolina.
On a Fulbright grant to Lille, France, Ms. Means studied French literature at the University of Lille. The following year she was awarded a Fulbright Teaching Fellowship at the University of Poitiers in Poitiers, France. At the University of Maimé Balmes in Guadalajara, Mexico, she studies Spanish literature.

Ms. Means has a Master's degree in French and Comparative literature from the University of North Carolina at Chapel Hill, and will receive her PhD in Comparative Literature from Vanderbilt University in the very near future.

Her more recent experience prior to coming to the International Center for Health Sciences includes a position as French instructor for the Peace Corps and as an assistant professor of French at the College of Charleston, in Charleston, South Carolina.

In addition to extensive travel in Europe and Mexico, Rosa Means has traveled to many of the Caribbean Islands and Africa.

INTERDEPARTMENTAL SUPPORT

Support from other campus units has been tremendous. The International Center for Health Sciences has been fortunate to have available a wide selection of Meharrrians to serve as consultants, lecturers and to provide technical assistance.

The internal linkages between the Center and other departments have allowed the Center to broaden its horizons in dealing with the technical aspects of Maternal and Child Health and
Applied Nutrition. In addition, lasting professional relationships have been developed between the International Center for Health Sciences and staff members from other departments.

DEPARTMENT OF BIOCHEMISTRY AND NUTRITION

The staff of the Department of Biochemistry and Nutrition believes that one of the greatest problems in developing successful programs whereby the nutritional and health status of pregnant women, lactating mothers, infants and children can be improved. Malnutrition has gone on so long that it has become a survival of the fittest. Many of the adults who live through it are not as productive as they could be if they were better nourished earlier in life. Malnutrition drains the energy of a country. In order to improve overall health status, people have to become knowledgeable of how wasteful malnutrition and health problems really are.

Good, solid programs of appropriate health practices for pregnant women, infants and children must include good nutrition practices, good sanitation practices and just generally good health practices. Also, they must include building on positive practices that already exist and using technologies and political conditions.

One important problem related to nutrition is infection. The two go hand in hand and work synergistically to raise or lower nutritional status, depending on one's good intake and health situation. This synergistic relationship will be considered in the design of any research, training or education program in which the department has a hand.
Equipment and Facilities—the Department of Biochemistry and Nutrition is equipped to do almost any kind of nutritional analysis. It has portable, semi-portable and automatic laboratory facilities and equipment normally used to determine nutritional status of population groups and for the assay of various nutrients in blood, urine and feces. Also on hand are an assortment of teaching media, including audiovisual aids concerned with nutrition education. In addition, the department has equipment for determining the level of trace elements in the body, such as lead, cadmium, copper, zinc and manganese, as well as advanced equipment used for lipid, fatty acid and amino acid analysis.

Research Experience—Members of the department have been involved for a number of years in research on the nutritional status of population groups—locally, regionally, nationally and internationally.

Training and Technical Assistance—Staff members in this department have participated in a number of domestic nutrition surveys as well as international nutrition surveys. They have also been involved in community nutrition demonstration projects in Nashville and have served as consultants for the United States Department of Health, Education and Welfare’s National Institute of Health, in connection with nutritional assessment and evaluation of nutritional status on both an international and a nationwide basis.

They have also had experience in planning, lecturing and evaluating international workshops on nutrition planning in
Nashville and in the Republics of Liberia and Zaire.

**Future Interests**—The department is ready and able to design and administer technical aid in improving nutritional capabilities of institutions in developing countries and in improving laboratory facilities concerned with health evaluation. The group is also prepared to give on-the-spot assistance in developing these facilities.

Members of this department are in a position to give technical assistance to developing nations in establishing facilities for the evaluation of the health status of population groups, and they can serve in the capacity of consultant in connection with monitoring the status of a particular population group that may have a specific nutrition problem.

The department's future plans include helping developing countries plan good nutritional practices (e.g., suitable weaning foods), develop a manual or guide to fully describe the nutritional composition of indigenous foods, and demonstrate how local foods can be put together into "multimixes" to make a desirable diet that is both nutritionally adequate and accepted by various cultural groups in a given population. In addition, nutrition and immunity is a research area of much interest.

**DEPARTMENT OF FAMILY AND COMMUNITY HEALTH**

The main functions of the Division of Family and Community Medicine are to conduct the Master of Science in Public Health (MSPH) degree program, maintain active research and consultation relationships with area hospitals and local and state health
departments, and to develop continuing education projects for the staff.

Facilities and Equipment—The Division is housed in one of the main sections of the campus hospital, thus giving staff and students access to all that is available in one of the central hubs of the campus community. Courses are taught in modern, efficient classrooms, and well-organized laboratories are at the beck and call of staff and students.

Of particular interest is the environmental health laboratory which the Division maintains for training students and performing research in food, air and water quality. Equipment and reagents are available for conducting the types of standard tests often required in environmental and health surveys.

Research Experiences—Members of the Division have had considerable experience conducting descriptive population, health and attitude surveys. Some of their current research includes 1) an examination of the factors contributing to the success of primary care health centers utilizing nurse practitioners, and 2) a project to determine the success of the National Health Services Corps in placing physicians in medically under-served areas, for example, among rural and central city populations.

Some recent research projects that culminated in graduate student theses are typical of the types of training the Division can offer students. A few of the students so trained, and the titles of their theses, are as follows:
Tareq Al'Abjuljader, M.D., "The Level of Consumer Satisfaction in the Health Services of the Dispensary in Kuwait"

Delores Thomas, "Knowledge and Awareness of the Human Reproductive Processes Among Recently Pregnant Users of an Urban Health Center"

Hikmen Abadeen, M.D., "Attitudes of Married International Students at Selected Campuses in Nashville Toward Family Planning"

Training and Technical Assistance—Several of the Division faculty, including Dr. Neser and Mr. Knuckles, have participated in the Maternal and Child Health/Training programs, held in Meharry's International Center for Health Sciences, a division of the School of Graduate Studies. The programs are designed to bring the latest of medical and health technology and concepts to African nurses and nurse-midwives. The Division of Community Health Sciences has conducted classes for these African health professionals on such subjects as epidemiology and environmental health and sanitation.

Staff members of the Division also have considerable experience in providing public health consultation to domestic rural areas, and these professionals are well-qualified to provide similar technical assistance to interested policymakers from developing nations.

The main training strength of the Division is in the MSPH degree program. Because of its unique structure, flexibility and appropriate course offerings, the Division is able to offer specializations in four areas—all of which are extremely useful to health professionals in developing countries. The four pro-
gram areas are:

1. Community Health Science Programs.

This program is designed for joint preventive medicine, family practice residents and other advanced professionals desiring to obtain generic research skills.

2. Health Services Administration (Institutions).

This program is designed to provide appropriate coursework and experience in the administration of a hospital, clinic or similar institution.

3. Health Services Administration (Departmental).

In this program the design is to provide students, who are already health professionals, with experience in administering health service agency programs or departments.

4. Special Medical Program.

The purpose of this program is to provide a general orientation to the field of community health for special medical students and selected non-United States physicians. There is extreme flexibility in this program which allows for joint student-advisor planning and selection of elective courses which form a coherent unit (e.g., health service evaluation, disease measurement in minority populations, international health problems).

Current and recent developing country students who have taken advantage of one of the four program areas are:

Hikmet Abadeen, M.D., Iraq
Tareq Al'Abduljader, M.D., Kuwait
Tunji Jemi-Alade, Nigeria
Marcel Mgbodile, Ph.D., Nigeria

Future Interests—The Division is interested in sharing its knowledge with individuals from developing countries, through training and technical assistance in such areas are:
1. Environmental Sanitation
2. Health service administration
3. Descriptive population studies
4. Water and food sanitation
5. Rural health services delivery
6. Chronic disease epidemiology and health surveys
7. Hospital and health center operation
8. Preventive medicine
9. Health law

In addition, Division staff members are interested in various types of health assessment. For example, Mr. Nathaniel Wesley has written a proposal for "An Assessment of Health Administration Education Needs of Cameroon." The proposal offers to address four assessment dimensions.

1. An overview of the health care delivery system
2. An assessment of health manpower
3. An assessment of health administration education, programs and processes
4. An assessment of the formal and informal educational levels of health officials

The goal of the proposal is to ascertain a complete and comprehensive report on the current status of health administration education in the country. Included in such a report will be an assessment of the quality and quantity of formal and informal education levels of health officials currently responsible for various aspects of the country's health care delivery system.
This type of assessment, or other health-related assessments, can be proposed for interested developing countries.

THE SCHOOL OF PREVENTIVE DENTISTRY

The School of Dentistry, Meharry Medical College, is composed of eleven (11) departments and divisions. They are as follows:

1. Division of Endodontics
2. Department of Hospital Dentistry
3. Department of Operative Dentistry and Pedodontics
4. Department of Oral Medicine/Oral Diagnosis
5. Department of Oral Pathology
6. Department of Oral Surgery and Anesthesia
7. Department of Orthodontics
8. Division of Periodontics
9. Department of Preventive Dentistry and Community Health
10. Department of Prosthodontics
11. Division of Dental Hygiene

The Meharry Medical College School of Dentistry has the capability to work through its Department of Preventive Dentistry and Community Health to offer technical assistance in the areas of pedagogical methods, curricular development, research, preventive dentistry, public health approach, health services administration and dental health education.

The Department of Preventive Dentistry has the capability of assisting in setting up recruitment towards career motivation in
dentistry, establishing alternative methods for delivery of
dental health services; assisting in the development of graduate
and research programs and continuing education. The expertise
is available to effect training, supervision and coordination of
auxiliary personnel in a program for controlling oral disease.

The special strength of the Meharry Medical College School
of Dentistry in meeting this challenge are as follows:

1. We are predominantly a Black institution whose
mission is to train and serve the disadvantaged.

2. There are African students that have been and
are being trained in the School of Dentistry at
Meharry.

3. Expertise in nutritional counseling is available.

4. All of the specialties of dentistry are capable
of making contributions to solving manpower pro-
blems, and offering expertise in any given area.

5. We are experienced in oral disease control pro-
grams.

To this point the School of Dentistry has not been involved
in dental programs outside of the continental United States, how-
ever, some members of the faculty are experienced in internation-
al dental restorative and preventive programs.

DIVISION OF BIOMEDICAL ECOLOGY

This unit of the College was established as the Division of
Behavioral Sciences in 1968 and has expanded since that time in
response to world needs. Current activities in this division,
which are of interest and importance to developing countries,
include the development of multidisciplinary programs which will
include the appropriate elements of nutrition (including plan-
ning), medical anthropology (nutrition and traditional healing), and a strong emphasis on the major endemic parasitic infections in developing countries (e.g., onchocercosis, schistosomiasis, trypanosomiasis and malaria). Comprehensive research in appropriately selected "Black related disease syndromes" is also in the developmental stage in this unit.

DEPARTMENT OF MICROBIOLOGY

One of the main functions of the Department of Microbiology is to provide students the opportunity to pursue an interdisciplinary program leading to a PhD. The major objective of this program is to develop a scientist who possesses 1) a high level of competence in microbiology and 2) the background to correlate and integrate his or her training in microbiology with other disciplines in the health sciences.

Advanced graduate study and research are available in microbial genetics, microbial physiology, parasitology, genetics immunology and immunochemistry, virology and host-parasite relationships. Of special note to developing countries is the department's strong interest in conducting training and research in the major endemic diseases of developing countries: malaria, trypanosomiasis, onchocerciasis and schistosomiasis.

Research Experience—Dr. Ram Navalkar's laboratory is currently investigating the separation of antigens of Mycobacterium leprae and other mycobacteria. Efforts are directed towards obtaining large quantities of purified antigens. These would be used to study their ability to elicit or induce hypersensitivity
and induce immunity. The purpose of the study is to evaluate possible changes in both cell mediated and humoral immune responses.

In addition, there is ongoing research on keloids, by Drs. J. and S. Russel; on experimental diabetes in the guinea pig, by Drs. C.W. Johnson and H. Patthey; and in Dr. Navalkar's laboratory, plans are underway to study the immune response in parasitic infections such as trypanosomiasis.

The department also has some exciting plans for future research. Among these plans are:

1. Studies on selected parasitic infections.
2. Studies on cancer.
3. An investigation to study the effect on cell mediated and humoral immunity in animals exposed to environmental pollutants.

Training and Technical Assistance—The department has trained students—and has given advanced training to health professionals—from a number of developing countries, for example, India, Nigeria and Tanzania. Staff members of the department are most receptive to expanding these cross-cultural ties through training and technical assistance.

Department members are well-experienced in matters of technical assistance. For example, Dr. Abdallah Isa is currently serving as consultant in Immunology training for physicians in Libya. Dr. Ram Navalkar is a consultant for the United States National Institute of Health on the disease leprosy and tuberculosis.
In a joint effort between Meharry Medical College and Tennessee State University, an Infectious Disease Team has been formed. This team has drawn up a proposal to visit various developing countries in an effort to assist the needs of such areas in controlling and/or eradication of infectious diseases. From such findings the team would collaborate with health scientists of developing countries in developing training programs in relevant areas of infectious diseases. Such training, with special emphasis on parasitic infections (e.g., trypanosomiasis, schistosomiasis and malaria), pathogenic bacteria and viruses, could be conducted both at Meharry and/or selected sites in developing countries.

The core staff has at its disposal the facilities and staff of both Tennessee State University and Meharry Medical College. Other health professionals can be called upon to lend their specific talents to joint efforts that could be tailored to the specific needs of any particular developing country.

In addition to all of the above, the staff of the department are experienced in organizing workshops and symposia. In 1977, Dr. Ram Navalkar organized a symposium at Meharry Medical College on Nosocomial (hospital acquired) infections. In 1978, Dr. Abdallah Isa participated in the organization of the First Arab Medical Congress, held in Baghdad, Iraq. These and other staff members are willing and able to conduct symposia in developing countries on other elements in the challenging world of microbiology.
DEPARTMENT OF NURSING EDUCATION

The Department of Nursing Education functions within the School of Medicine at Meharry Medical College. This department is renown throughout the United States of America and on the continent of Africa as an exemplary training center for nurse practitioners and nurse midwives. The primary objective is to plan, develop and operate innovative and creditable programs which, in alignment with the Meharry philosophy, will train registered nurses to become health care specialists able to render superior health care services to needy clientele. The six program offerings are:

1. Nurse Midwifery
2. Family Nurse Practitioner
3. Medical Nurse Practitioner
4. Pediatric Nurse Practitioner
5. Maternal Child Health/Family Planning Nurse Practitioner
6. Mental Health Nurse Practitioner

These programs are fully accredited by the American College of Nurse Midwives and the American Nurses' Association. In an effort to expand health care training offerings, the Department of Nursing Education is also involved in developing and implementing two other innovative programs, namely:

1. Graduate Education Program to offer the Master of Science degree in Nursing with specialties in Patient-Child Nursing and Adult Health Nursing;
2. Regent External degree program in conjunction with the State University of New York for the provision of the Baccalaureate degree.
Training and Technical Assistance—During the 1978-1979 academic year, a group of nurses from Botswana was enrolled in the Family Nurse Practitioner Program. These nurses are certified for graduation at the May 1979, Commencement. In the past, a Phillipines native received training here as a Family Nurse Practitioner and, at present, we are processing an application from a Jamaican nurse. The Director for the School of Nursing Education, Dr. Evelyn Tomes, served as consultant for Aid to International Development and the Maternal Child Health/Family Planning Center of Meharry Medical College in February, 1977. She evaluated nurse education programs in Botswana.

Ms. Pearline Gilpin has served as consultant, educator, and workshop coordinator for the Meharry International Health Center in Botswana, Liberia and other developing countries.

Ms. Evelyn Hargett has served as Family Planning Nurse Practitioner instructor for the Meharry International Health Center. From June to August, 1978, she was Phelps-Stokes fellowship recipient.

Ms. Carol Spencer has worked as consultant and educator for Meharry International Health Center in Africa.

Ms. Margaret Dunaway is registered as a nurse and midwife in Rhodesia and Liberia where she also served as a missionary of the Southern Baptist Convention (1974-1978). Her work experience in those countries has involved positions as Nursing Sister-Midwife, Charge Sister Midwife, Flying Nurse-Clinic Service, Obstetrics Supervisor, Maternity Clinic Director, and Director of a Midwifery School.
Ms. Adury Burgess lived in Somerset, Bermuda (1962-1964) and taught General Science and Biology in a Secondary School, as well as conducting a local Health Fair.

Health Delivery Systems—This department primarily educates and prepares registered nurses to deliver primary health care practice with a geographic focus on health manpower shortage areas in this country and abroad. This training enables them to deliver a more comprehensive range of health services inclusive of traditional medical services as well as nursing services.

Experience in workshops, conferences, symposia planning: Since its inception, the Department of Nursing Education has sponsored short-term continuing education workshops, conferences, and/or symposia as an integral part of its total program. In addition, these activities are critical to our program evaluation and accreditation as mandated by the national accrediting agencies. These activities are presented annually throughout the academic year and especially as a Commencement offering. Persons invited and attending are our Continuing Education graduates, Meharry Nursing School alumnae, and local, state, and regional registered nurses.

Current Departmental Activities—Current departmental activities revolve around the six on-going certificate programs in Nurse Practitioner and Nurse Midwifery Education. As well, the Regents External Degree Program has been instituted as a conjunct of the State University of New York to offer an alternative means of obtaining the Baccalaureate degree in Nursing.
Future Departmental Interests—Future departmental interests are threefold. Of paramount importance is the Graduate Education program which is well into the developmental stage. A Feasibility Study has already been submitted to the School of Graduate Studies. Graduate faculty members are being recruited and a Graduate Education Program Workshop is scheduled for April, 1979. The department is also investigating the implementation of a service component specifically in Nurse Midwifery, Adult Medical Nursing, and Gerontology through operated clinical services. Lasting, publications and audio-visual materials are being developed in Black Nursing History.

DEPARTMENT OF OBSTETRICS AND GYNECOLOGY

The basic philosophy which underlies the Department of Obstetric and Gynecology is the high-risk problems in obstetrics and gynecology, are primarily characteristic of inner-city, peri-urban and rural populations who have low incomes and low levels of literacy. Evidence indicates that those most likely to provide care in the future for these sub-populations are those health professionals who understand the cultural, social economic and religious rules whereby these people organize their daily lives and which affect their decision-making in terms of the adoption of family planning practices and the use of contraceptives.

It is partly toward these ends that the department has channeled much of its efforts by 1) engaging a staff of professionals who are knowledgable in international health problems, 2)
carrying out both basic and clinical research, 3) conducting a nurse-midwife training program, 4) training African nurses in the latest of family planning concepts and methods, and 5) interacting with governments of developing countries by drawing up obstetric needs assessments (e.g., Kenya and Malawi).

Facilities and Equipment—The department enjoys the latest in modern, up to date facilities on the Meharry Campus. It also has a number of local and regional off-campus affiliations with other institutions, both locally and regionally (e.g., ambulatory programs, resident and nurse-midwife affiliations). These affiliations broaden the department's reservoir of knowledge of and for developing countries.

The department has an extensive array of medical equipment that can be used efficiently in developing countries. A description of some of the equipment is as follows:

1. Two laparoscopes
2. Four electronic fetal monitors
3. Two cyrosurgical units
4. One colposcope

The laparoscope is utilized for both diagnostic and therapeutic purposes. This equipment is a telescopic instrument which allows for the visualization of the peritoneal cavity through a puncture wound, thereby eliminating the need for an operative incision.
The fetal electronic monitors are instruments used to measure uterine pressure and electrical activity of the fetal heart prior to birth and during labor.

The colposcope is utilized in the management of abnormal cervical cytology (pap smears for cancer detection).

The cryosurgical instrument allows for freezing of the cervical epithelium to control early neoplastic and inflammatory processes. Cold cautery has the advantage over hot cautery in that it causes less unnecessary tissue destruction.

Also available to the department, but residing in the Department of Radiology, is a gray scale ultrasound unit. This piece of equipment allows for the two-dimensional visualization of the pelvic contents without the use of ionizing irradiation. Of the above described equipment, the laparoscopes and the cryosurgical units could be considered portable.

Research Activities—The department is currently engaged in research projects with the Upjohn Pharmaceutical Company and the Eaton-Merz Laboratories, two of the United States' leading pharmaceutical companies. These projects are in the nature of applied family planning, and should prove to be useful in developing countries where such practices are acceptable. The two studies are:

1. A study of Post-conceptional induction of Menses. The purposes of this study is to evaluate the safety, efficacy and patient acceptability of a single vaginal administration of a suppository containing 15S-15-
methyl prostaglandin F2 methyl ester to induce post-conceptional menses in very early human pregnancy (Upjohn).

2. Cooperative contraceptive efficacy study. The purpose of this study is to determine the risk of pregnancy occurring during the use of Encare Oval as a contraceptive. The vaginal contraceptive suppository to be tested in this study contains a widely used effective spermicidal agent, nonoxynol-9. This agent is spread throughout the vaginal cavity by a unique dispersing mechanism resulting from a CO₂ releasing action of tartaric acid and sodium bicarbonate.

Another study, carried on with the Department of Pediatrics of Meharry Medical College, deals with reproductive performance in women with sex chromosome mosaicism. Among chromosomal analyses performed in 23 couples in whom there was a history of two or more spontaneous abortions, five females had mosaicism of the sex chromosomes, that is, 46, XX/47, XXX, but all the males had normal 46, XY chromosomal complements. Two-thirds of these pregnancies ended in abortion and one-third of the infants exhibited chromosomal or physical abnormality. The results of the study suggest a possible effect of sex chromosome mosaicism on reproductive performance.

Training and Technical Assistance—Over the past five years (1973-1978) staff members of the department have served as lecturers and consultants for the Maternal and Child Health/Family
Planning (MCH/FP) Training Program, sponsored by USAID, and conducted at the International Center for Health Sciences, on the Meharry campus. During this time period approximately 200 African nurses and nurse-midwives have been trained in the latest MCH/FP theories, concepts and clinical practices. The department has contributed greatly to this program by providing classroom lectures and clinical experiences for the program participants on such topics as: The Physiology of Reproduction, Common Gynecological Problems, Methods of Contraception, Natural Family Planning, Subfertility and Infertility, and Permanent Methods of Birth Control. The department is greatly interested in continuing this type of training for health personnel for developing countries whose governments have an interest in OB/GYN and family planning.

Recently, Dr. Elijah Carter, Chief Resident of the department, participated in an MCH/FP Refresher Workshop, held in Nairobi, Kenya, in November of 1978. The purpose of the workshop was to update the knowledge of nurses and nurse-midwives who had previously attended the MCH/FP training programs held at Meharry.

In July of 1978, Dr. Foster visited the Republic of Malawi to conduct an obstetrics needs assessment in order to aid the Republic and also strengthen Meharry's institutional capabilities to carry out obstetric training for African countries. During his visit, Dr. Foster conducted an in-depth survey of the situation in Malawi. He also toured several hospitals and conducted individual discussions with hospital personnel in order to learn
the pattern of obstetric health care delivery in the nation. After analyzing the survey data, Dr. Foster presented a list of recommendations to the Malawian Government (the recommendations are available on request).

As a December, 1978, in its effort to maintain ties with other countries, the department has been also trained three individuals from developing countries. They are:

1. Otuokere Ekeleme, M.D. (Nigeria)
2. Ifeanyi Okpalobi, M.D. (Nigeria)
3. Bharati Mody, M.D. (India)

Another training program conducted by the department is the Jessie Smith Noyes Foundation Program. This program is designed to provide third and fourth year medical students with a closely supervised clinical experience in the field of OB/GYN, with emphasis on the special problems of the juvenile and adolescent obstetric patient. This type of specialized training is particularly useful for OB/GYN professionals who will eventually be practicing in developing countries, where there exists a high rate of pregnant adolescents.

Department personnel have a keen interest in sharing their specialized knowledge with health personnel of developing nations. The transfer of knowledge can be realized, for example, through specialized training programs or workshops conducted in developing countries or on the Meharry campus.
DEPARTMENT OF PEDIATRICS

The Department of Pediatrics has been keeping in step with the needs of developing countries by periodically revising departmental curricula in response to the needs of such countries. The result is that the department can give immediate attention to a variety of requests from interested developing nations.

The department can train health professionals to provide well-rounded, quality health care and maintenance services for children of developing nations. This is accomplished through departmental programs that take a multidisciplinary approach to child health.

In these health care and maintenance programs, particular emphasis is placed on 1) providing preventive medical and dental care, 2) early recognition of genetic disturbances, 3) recognition of learning difficulties and behavioral disturbances, 4) nutritional problems, 5) hearing and speech defects and 6) acute care services utilizing conventional and traditional medical care methods.

**Facilities**—Health care and maintenance service programs of the department consist of the following components:

**Children and Youth Center.** The Center provides medical care for the underprivileged sector of children who reside in limited geographic regions of Metropolitan Nashville. The program is unique in that it provides not only medical-dental care, but it also provides service training programs
for home economics, nutrition, speech and hearing screening and treatment.

The Center has a well-trained professional staff. There are three pediatricians, two pediatric nurse-practitioners, two nurses and one each of speech therapist and audiologist, psychologist, nutritionist and social service worker.

Ann Elizabeth Dickerson Child Development Center

This program offers excellent diagnostic and training services to those children with mental and developmental retardation. Most of the clients are referred to the Center by various local and State community agencies. The Center provides detailed diagnostic and long-term follow-up care services and genetic counseling service utilizing highly advanced technology.

The Center is staffed with an efficient, skillful staff in each section. Clinical programs are carried out by two full-time pediatricians supported by two psychologist, two social workers and other support personnel. The laboratory
program has one cytogeneticist and one biochemical geneticist, both having excellent genetic counseling expertise. Each of these programs of laboratory training and service are aided by a supportive staff of technical professionals.

**Pediatric Ambulatory Service.** This is a conventional pediatric group practice setting where four full-time Board certified and subspecialty Board qualified, well-seasoned clinicians provide in areas of hematology, endocrinology and other subspecialties are readily available to meet the needs of medical services without geographic limitations.

**Pediatric In-Patient Services.** These facilities include 30 in-patient beds with provision for an intensive care unit for sick children and the adolescent age group. The newborn nursery is equipped with 20 bassinets, 8 isolettes for newborn intensive care to provide primary, secondary and some aspect of tertiary newborn premature medical care.

Each of these four units is completely interdependent and, together, they provide optimal medical care and health maintenance.
The health professional who is trained in the department will receive maximum exposure to a type of 'real life' medicine that is most applicable to the situations, where patient load is high. The intensity and degree of utilization of the department's health care maintenance programs are as follows:

1. No less than 12,000 annual visits to the Centers (exclusive of the emergency room).
2. Annual in-hospital patients admission is 1,000.
3. The number of babies born at Meharry's Hubbard Hospital is at least 1,000 annually. Among these, in excess of 15 per cent of newborns are premature infants who require intensive nursery medical care.
4. Ninety per cent of the mothers of the above newborns are teenagers, and come from socioeconomically deprived groups of the community, and are almost exclusively from the Black community.

Training and Technical Assistance—Over the past few years, member of the department have actively participated as consultants in biannual Maternal and Child Health training programs held at Meharry's International Center for Health Sciences. These programs, sponsored by USAID, are conducted for the purpose of training nurses and nurse-midwives in the latest methods and techniques of maternal and child health.

Department staff have conducted classes, seminars and clinicals in the Maternal and Child Health programs on such topics as: neonatal anemia, anthropometry, prematurity and neo-
natal tetanus, immunization planning, management of neonatal septicemia, iron deficiency anemia, gastroenteritis and dehydration, whooping cough, pneumonia, malaria, measles, tuberculosis, hookworm and roundworm management, tinea and impetigo, management of bacterial meningitis, and nutrition.

Members of the staff are capable of offering short-term technical assistance to developing countries on any or all of the above topics as well as on general pediatric health care and maintenance.

**Future Interests**—Health professionals in developing countries do not always have the opportunity to keep up on what is new in research and development techniques, methodologies and planning, regarding child health care and maintenance. Therefore, postdoctoral and postgraduate training programs that address themselves to what is new are of great importance if the latest in appropriate medical and health technology are to be transferred to developing countries. Doctors, nurses, nurse-midwives, nutritionists and geneticists of developing countries can benefit by having good, comprehensive training programs made available to them.

Meharry's Department of Pediatrics possesses excellent practical training programs tailored to meet the individual needs and requirements of medical and health professionals in developing countries. Intensified postdoctoral training programs are available in the fields of biochemistry, biochemical genetics, clinical genetics and hematology. Also available are programs
that meet the needs of postgraduate physician's training programs. Each of these training programs may be made available to accommodate, if so desired, a postgraduate degree program in collaboration with Meharry's School of Graduate Studies and Research.

Intensified sickle cell clinical training programs are also available to physicians, nurses and nursing students, as well as public health workers.

Clinical nutrition training programs and training for homemakers are also provided to nurses, midwifery students and public health workers. A perinatal genetic counseling program is provided through a Child Development Center and a Diagnostic Laboratory in collaboration with the State of Tennessee Regional Genetic Disease Referral Center Program. The training program for nursing students and nurse and school teachers for clinical child psychiatry and behavior problems may be made through Child Development Center staff, in cooperation with Meharry's Mental Health Center. These are the types of pediatric programs that should meet the needs of health professionals in developing countries in the future.

SICKLE-CELL CENTER

Since 1972, the Meharry Sickle Cell Center has moved to the forefront in Tennessee in the delivery of sickle cell health care services to Tennessee citizens, uniquely providing both education and screening of individuals and 'at risk' populations.
Education—The Meharry philosophy has been to insist upon sickle cell education to precede sickle cell screening. The Center has followed the National guidelines in informing the public on the ramifications of sickling hemoglobinopathies. That is, the program emphasizes the difference between sickle cell trait and sickle cell anemia. It defines inheritance, description of the different variants of sickling hemoglobin. The program also denotes incidence, points out the area of origin and ethnic groups most likely to inherit the sickling gene. Other benefits of the education program rest with why screening is important and what the test results mean.

The educational information is delivered by a team of teachers headed by a Health Educator and includes a Nurse Educator, a Community Organizer, Genetic Counselor and a staff Assistant who provides audio-visual services.

The forum for the education session may be an individual or a group. The audience may be school age, adult lay, lay professional or health professional. The education session may take the form of a lecture, a workshop, an educational literature package, a conference or any combination of the above.

Screening—Screening is carried out by Medical Technologists specifically trained in hemoglobin electrophoresis techniques. The Meharry sickle cell hemoglobinopathy detection laborabory participates in the National Disease Control Proficiency Testing Program, a nationwide, standardized program that is used by the Meharry sickle cell center for the purpose of
monitoring its quality controls.

The laboratory routinely analyzes blood samples for:
sickle cell anemia, sickle cell trait, sickle C disease, C trait, 
CC disease, Sickle Beta Thalassemia, sickle fetal disease and has 
the capacity for detecting other variants of sickling hemoglobin. 
The laboratory also performs cellulose acetate and citrate arga 
electrophoresis solubility tests and $A_2$ quantitation for maximum 
accuracy of detection. A quantitative analysis is determined on 
all positive samples.

**Counseling and Patient Care**—All persons whose hemoglobin 
tests are positive for the sickling gene are offered counseling 
by a person(s) trained to provide informative education on genetic 
inheritance and genotype probabilities. This service is provided 
so that persons who are tested as having sickle cell anemia, 
sickle cell trait or any other variant of sickling hemoglobin 
may make informed decisions relative to their life styles.

Hubbard Hospital of Meharry Medical College is the patient 
care facility of the Meharry Sickle Cell Center. Complete health 
care for sickle cell anemia victims is provided by clinicians 
that are specialists in pediatrics, hematology, pathology, obstet-
trics and gynecology. This group of clinicians help to round 
out the capabilities of the Sickle Cell Center in terms of 
diversified talents required for international health projects.

In addition to this core staff, the Center can call upon 
the consulting talents of a wide range of medical and health 
professionals from other departments in the college who, col-
lectively, could provide all services necessary for international sickle cell education, screening, testing, patient-care and research.

**Equipment and Facilities**—The Center has an efficient range of equipment necessary for sickle cell screening and testing. The equipment is completely mobile and can be used either in a mobile van/clinic or set up in one place, as in a modular or satellite unit, and moved from location to location. The staff of the Center is well experienced in using both these modes for screening, testing and education.

The range of portable equipment includes: electrophoresis apparatus (2), densitometer (2), hemacrit centrifuge (3), and assorted audio-visual aids, for example, films, slides, tapes, brochures and posters.

The facilities wherein much of the equipment is utilized are twofold: fixed and mobile. The fixed facilities consist of: the *Sickle Cell Center*—the core unit—which houses the administrative office and hemoglobinopathy detection laboratory; the *School of Medicine*, which contains the clinical expertise of the departments of Pediatrics, Hematology, and Obstetrics and Gynecology; the *Hubbard Hospital*, for patient care and clinical laboratories; and the *Harold D. West Basic Science Center*, research laboratories.

The mobile facilities include: a mini-van and mobile laboratory for moving the equipment and personnel from village to village on a daily basis; and a satellite unit, which as a semi-
mobile modular unit where the equipment can be set up for longer periods of time, then moved to another area or region of the country. The satellite unit houses administrative and clerical space, waiting room, education room, screening room, counseling office and detection laboratory. Modules within the unit can be added or taken away, as dictated by need.

This array of facilities allows the Sickle Cell Center to offer a wide range of capabilities that offer complete mobility without sacrificing access to the best of equipment and technical expertise.

Research Experience—Research investigators at the Sickle Cell Center and throughout Meharry are dedicated to unraveling the sickling hemoglobin. Some of the projects along these lines of which Meharrrians have an interest are:

1. Synthesis and testing of anti-sickling agents.
2. Studies on abnormal iron transport in SS cells which include kinetic analysis and the determination of the molecular bases (membrane alteration) of these transport abnormalities.

In addition to the above overall interests of Meharrrians, certain staff members of Meharry are engaged in specific areas of basic research that enhances the Center's international capabilities.
OUT PUTS

Outputs during the first year of the grant activities were achieved in several areas and are clearly not mutually exclusive. They are in fact highly interdependent. For example, knowledge and the products of the review of the literature in MCH and Applied Nutrition (output 1) flows into and out of each of the other output categories; the products of linkages (collaborative research, faculty exchanges, technical information, cross-cultural exposure) also contribute to every other output category.

I. EXPANDED KNOWLEDGE BASE AND RESEARCH CAPABILITY

One objective of the 122-d grant is to enable Meharry Medical College to determine the technical state of the art of developing countries in the areas of MCH and applied nutrition. In response to this objective, Meharry's domestic knowledge base is being expanded through an analytical review of the literature to include those practices, experiences and approaches that have been tried with varying degrees of success in other countries. This extensive review of relevant literature is serving as a starting point for strengthening institutional capabilities to respond to MCH and applied nutrition needs in developing countries.

II. INCREASED EDUCATION AND TRAINING CAPABILITY

There are several sub-activities in the area of education and training related to the field of the grant that will be developed or strengthened. Knowledge and skills gained by faculty members through problem orientation visits overseas, and develop-
ment workshops lend itself to the enrichment of existing courses and the planning of new courses and curricula for both United States and LDC students seeking degrees at several levels.

Evaluation of Community Nutrition Services—APHA Institute, November 4, 1979. This institute was primarily for nutritionists and other health care personnel responsible for planning and/or management of nutrition intervention programs at the federal, regional, state or community level. Major topics covered included nutrition program planning with integrated monitoring systems for simple data retrieval and efficient evaluation and cost analysis, role of quantitative estimates in planning programs both within and between programs, and utilization of evaluation outcome and cost analysis to both improve services and justify resource allocation.

As a result of the institute, the director of the International Center for Health Sciences strengthened her skills in: 1) measuring effectiveness, efficiency and cost of various nutrition programs through improved monitoring, assessment and evaluation techniques; 2) designing program plans for nutrition services that will incorporate practical ongoing evaluation techniques; 3) utilizing a sequence of objective models to describe the hypothesis about relationships of nutrition variables to human health status; and 4) identifying potential measures or indices in terms of adequacy for use in program evaluation, characteristics of validity, reliability, accuracy, coverage and acceptability.
Decision Analysis Workshop for Health Professionals—
APHA Workshop, November 5, 1979. This workshop was designed for those professionals in the health care system such as health administrators, physicians, nurses, allied health professionals and other health care providers who are responsible for making administrative or medical decisions. A variety of learning methods were utilized and included lectures, slides, problem-solving exercises and group discussions.

Subject areas covered were: 1) structuring a decision tree; 2) determining probabilities and how to manipulate them; 3) calculating values; and 4) solving a current health decision problem.

At the end of the workshop, the director of the International Center for Health Sciences had sufficient familiarity with the technique of decision analysis to: 1) set up and solve simple problems; 2) review and critique formulations of more complex problems; and 3) use decision analysis as an aid for determining what information is necessary for decision-making and a method for organizing and using that information.

A.P.H.A. Meeting, New York, November 4-8, 1979. The APHA meeting, New York, which was attended by a record of 12,000 public health and other health-related professionals, was of significant importance to the Center's Health Educator. In addition to reestablishing his professional contacts locally and internationally, the health educator had the opportunity to attend lectures, presentations and workshops which helped to strengthen
his skills designing, implementing and evaluating public health education programs.

Conference: "The Nutrition of The Child"


The primary purpose of the conference was to focus attention on issues relating to the nutrition of the child. E. Aban Oddoye, PhD, (Human Nutritionist at the International Center for Health Sciences), represented Meharry Medical College at the meeting that was jointly sponsored by the American Institute of Nutrition, American Society for Clinical Nutrition, and the "International Year of the Child." much of the conference was focused on topic and concerns responsive to the nutrition of the child. Major topics covered included, maternal nutrition and fetal development, nutrition of the premature infant, and trace element response syndromes of children.

As a result of the conference, Dr. Oddoye gained new information and knowledge concerning child nutrition, and premature infancy. This new information will aid the nutrition staff in revising the summer program applied nutrition curriculum.


The purpose of the conference was for the invited guests to refine draft papers on various topics relating to nutrition education. Considerable attention was directed to diet-related diseases of
vulnerable populations. The recommendations, options and priorities resulting from this conference will assist the nutrition staff in designing nutrition education plans and intervention models for developing countries. These changes will provide information for the pre-planning of nutrition related activities in the future.

Famine Workshop. In response to the serious consequences of famine in Africa, a working conference on famine was held in Kinshasa, Zaire on January 6-11, 1980, to discuss some of the basic causes of famine in Africa and to recommend preventive, interventive and financial measures to alleviate and/or reduce to a lesser extent the contributing conditions to famine in developing countries.

As a result of this working conference on famine, the director of the International Center for Health Sciences enhanced her knowledge and skills of: 1) the social, cultural and economic factors of malnutrition; 2) common nutritional problems in several African countries; 3) the nutritional status of young children and pregnant and lactating mothers in several African countries; 4) the consequences of early child malnutrition with special reference to low birth weight, low IQ, and susceptibility to infections; and 5) the activities of under five clinics and their roles in the community as related to public health nutrition.

Maternal and Child Health Summer Program—In an effort to increase the education and training capabilities of the Interna-
tional Center for Health Sciences, the Center conducts a MCH summer program geared towards health science students. The overall goal of this annual program is to increase the knowledge and skills of at least 10 African and American students currently studying in the health field at American institutions. These programs are designed and developed as education and research adjuncts to regular academic curricula.

The summer 1979 program was a six-week, certificate level course in Maternal and Child Health. The course was conducted at the I.C.H.S., with laboratory experiences, workshops and field trips held at other units on Meharry's campus and at municipal facilities throughout Nashville.

The theme of the summer 1979 program encompassed, "the individual and his/her environment". The curriculum was designed to give the students a comprehensive overview of the interplay between the macro and micro environmental factors, as it relates to preschool children, pregnant women and lactating mothers.

The basic program design encompassed three phases:

1) Factors of the physical environment.

2) The physical environment as it relates to the development of the fetus and the mother.

3) The interplay between the environment and the infant—preschool child, that encompassed nutritional concerns, public health programs, and health education programs.

Coursework covered theories, concepts and practices in the areas of: epidemiology, nutrition, health education, pediatrics, environmental sanitation, culture, obstetrics and gynecology, parasitology and family health planning, management and evaluation.
III. A STRENGTHENED ADVISORY CAPACITY

Considerable attention is being directed towards improvements in problem identification, sector analysis, project design and implementation research and evaluation to enable Meharrians to respond to the requests of AID and LDC's in the areas of maternal and child health and applied nutrition.

Program Design and Evaluation Seminar—Three International Center for Health Sciences staff members participated in a one week program design and evaluation seminar sponsored by the United States Agency for International Development in Washington, D.C. The goal of the seminar was to develop and strengthen knowledge and skills about the process of project design and evaluation.

Materials covered in the workshop included: project planning, data collection, project implementation, report writing and project evaluation.

As a result of the workshop, three International Center for Health Sciences core staff members developed and/or strengthened their skills in: 1) identifying program goals and objectives; 2) selecting a model for sample collection, data collection and time frame; 3) developing indicators to evaluate the extent to which objectives and goals have been reached; 4) determining if programs are in compliance with standards; 5) monitoring standards; and 6) drawing conclusions from data collected.

French Course—A French course was initiated at the International Center for Health Sciences in September, and is now in
the second semester of activity. The purpose of the course is to expand the Center's capabilities for performing services in Francophone countries in Africa and the Carribeans.

The class stresses both the written and conversational aspects of the French language and is attended by core staff as well as other Meharrians.

As a result of this intensive training, Meharry will be able to compete for health care related grants in Francophone countries in Africa.

**Applied Nutrition Summer Program**—The applied nutrition summer program focuses primarily on nutrition education and provides health sciences majors with the conceptual framework of planning for nutrition education programs and the food system in general. It also enables the students to develop models that will reflect causal analysis that are organizational and include the economic, social and political realities of developing countries. Such models will be designed by students to suggest implementation as well as nutrition macro micro planning strategies.

During this six (6) week program, special emphasis will be given to basic skills such as obtaining baseline data, systematic analysis and implementation and management of nutrition education programs.

Topics include: 1) elements of sound nutrition and adequate nutrition status; 2) identification of regional and national malnutrition problems in developing countries; 3) assessment and
monitoring of nutrition status; 4) data collection technologies; 5) data analysis and interpretation; 6) nutrition interventions; 7) social and cultural factors affecting nutrition education programs in Africa; 8) methods of investigating disease causation; 9) environment and food sanitation; 10) birth, infant, mortality and death rates in Africa; 11) nutrition during pregnancy and lactation; and 12) concepts and principles of health education.

This six (6) week applied nutrition program is extremely useful in that it:

1) Allows health science majors to gain a deeper understanding of the health problems involved and to assist them in developing causal, multi-sectoral models relevant of the nutritional health and sociocultural needs of developing countries;

2) provide the students with an overall understanding of the major factors affecting nutritional and health status in developing countries;

3) familiarize participants with the information and resources presently available in the above countries which can help them plan more effectively to improve the nutrition and health status;

4) give the students an opportunity to develop and practice basic analytical, conceptual and personal skills they need to work in nutrition education planning efforts. Some of these skill areas are: a) analysis of nutritionally significant data; b) conceptualizing and planning integrated efforts in the direction of solutions; and c) developing an ability to communicate with people in other sectors, institutions, and disciplines about the impact of nutrition education programs on health status.

IV. EXPANDED INFORMATION AND DISSEMINATION CAPACITY

A good deal of emphasis is being places on developing a resource clearinghouse capacity at the center. This emphasis
includes an inventory of approaches to maternal child health care delivery in Africa, demographic, economic and environmental factors influencing these approaches, maternal child care utilization patterns and trends, maternal child health status of samples is selected LDC's and a cataloging of institutions and individual conducting research in maternal and child health and applied nutrition.

Semi-Annual Newsletter—With the first issue scheduled for distribution in April 1980, the Center has spent several months gathering information, designing criteria and planning the focus for a semi-annual newsletter.

The initial issue of the newsletter entitled "Reaching Out", deals primarily with the Center—its history, its activities and its goals. Subsequent issues will focus on Maternal and Child Health and Applied Nutrition activities and research, with special emphasis on developing countries.

It is anticipated that the newsletter will reach various local and international institutions and serve as a medium of information exchange on various preventable health problems facing many developing countries.

Visiting Consultant Program—Through the discriminating usage of consultants, workshops and seminars are designed and implemented to assist in strengthening the multidisciplinary capacity of Meharry Medical College in the areas of maternal and child health and applied nutrition.
In one of the activities at the International Center for Health Sciences, Dr. Gerald Edwards from the National Science Foundation, visited the Center to discuss and share information on research opportunities in Africa. As a result of information shared, participating Meharrians were made aware of research grants and other possible funding sources for individuals desiring to explore and conduct research activities in Africa.

In another activity, Ms. Jackie Jackson from Kansas State University, conducted a workshop for the International Center for Health Sciences core staff on "Time and Workload Management". As an organization grows and takes on additional programs and responsibilities, the demands placed upon the individual members, in terms of time and workload, increases at a corresponding rate. Therefore it is highly beneficial to be aware of instruments and tools which may assist individuals in their management of time.

The workshop proved to be quite informative and helpful. Topics covered included: management by objective (MBO); setting short and long range goals and objectives; the role of delegation and how to effectively delegate; decision-making as a time management tool; and, the individual as a manager of time.

International Center for Health Sciences Reference Library

One of the goals of the Center is to become a focal point on campus in the areas of maternal and child health and applied nutrition. In response to that goal, one of the activities the staff has undertaken is to establish a reference library within the International Center for Health Sciences.
Space has been set aside and the staff has begun to collect books and other reference materials on maternal and child health and applied nutrition. The facility is open to the College.

V. EXPANDED LINKAGES AND NETWORKS

Relationships are being developed with maternal and child health institutions and other organizations to widen the base of expertise at Meharry Medical College in maternal and child health and nutrition.

**Linkage Trip to Africa**—Dr. Charles Johnson, Dean of the School of Graduate Studies and Research and Dr. Gladys B. Hardy, Director of the International Center for Health Sciences, traveled to four African countries during the periods of April 14—May 7, 1979, to establish a linkage with institutions of higher learning and Ministries of Health. Developing countries selected for primary consideration for a linkage were Liberia, Nigeria, Kenya and Malawi. In each country, consultations were arranged with the appropriate personnel in the Ministry of Health, USAID Mission (except Nigeria which doesn't have a USAID Mission), and Health Sciences Institutions. In addition to the collection of considerable demographic data, they were also able to observe health care delivery systems in action and various training programs in the health care field.

After careful consideration and evaluation of the data gathered, it was decided that Malawi would be the initial linkage country.
A linkage is currently being discussed with the appropriate officials in Malawi.

**Linkages**—While emphasis on professional growth is paramount, the establishment of working relationships with organizations and individual professionals by ICHS personnel is also a major concern. Such contacts aid tremendously in recruiting new personnel and the exchange of pertinent maternal and child health and nutrition information. Accordingly, selected members of the College have made a number of visits nationally as well as internationally to institutions in the United States and to various African countries for the purpose of initiating linkages, problem consultation and generating valuable contacts.

Other organizations that have been contacted by the staff of Health Sciences include: the Food and Agriculture Organization (FAO), United Nations Educational Scientific Cultural Organization (UNESCO), World Health Organization (WHO), the League for International Food Education (LIFE), the Catholic Relief Service, and the World Bank Group.

**Additional Sources for Funding**—It is anticipated that as the core staff of the International Center for Health Sciences develops its capabilities in maternal and child health and applied nutrition, other sources of funding will be realized through the generation of new grants. In connection with this, a maternal and child health training proposal was developed and submitted to the appropriate AID officials to assist in the train-
ing of a work force capable of extending health services to the 
rural communities at a minimal cost in Malawi. The purpose is 
not to create a duplication of already existing health cadres, 
but more significantly to monitor the health needs of the com-
munity and initiate and teach preventive health measures. This 
training is attractive in that it clearly demonstrates what can 
be done in a simple, realistic and practical manner. An addition-
al value of this approach is that it utilizes a person from a 
rural unit or the community who may be more sensitive to the 
health needs of the community and who will provide services at a 
lower cost.

Feed-back from government officials in Malawi has been posi-
tive and we are waiting for a response for the United States 
Agency for International Development.

Future Activities—The professional staff of the Interna-
tional Center for Health Sciences is acutely aware and concerned 
about the problems confronting developing countries in regards to 
maternal and child health and nutrition. The staff will continue 
to strengthen its foundation in maternal and child health and ap-
plied nutrition and in other developing areas of the world by 
increasing research efforts and consulting visits to Africa by 
staff members and by establishing linkages with individuals and 
institutions from various African nations who request technical 
assistance and who wish to share their knowledge with us. This 
is our commitment to humankind.
**FISCAL REPORT**

**February 1, 1979—January 31, 1980**

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