Harvard-CUSS Project

Project #625-11-550-531

Contract #AID/pha-c-1049 with Harvard University for Technical Assistance to University Center for Health Sciences (UCHS or CUSS) (University of Yaounde), in Yaounde, United Republic of Cameroun (West Africa)


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Foreword

This Report will attempt to summarize the goals, accomplishments and problems of what came to be known as the Harvard-CUSS Project during the six years of activity under Contract #AID/pha-c-1049. This Report will be presented covering three phases of the Project in Cameroon and draws heavily upon the individual final reports of the Directors and Team Members who have been in Yaounde. Work in Yaounde fell into several rather distinct phases, and will be reported as such, since these phases involved different personnel and objectives, but all relevant to the overall goal of strengthening the institution's academic activities in patient care, teaching and research in order to improve the health of mothers and children in a country with limited manpower and resources at the start of the Project. The three principal phases may be headed:

PHASE I Establishment of the Harvard Team in Yaounde and Organization of its Program (1973-75).

PHASE II Continuing Evolution (1976-77) and Development of the Academic Program in Maternal and Child Health.

PHASE III Gradual Withdrawal, so as to permit Continuity and to leave Pertinent Teaching Aids and an Established Program in Maternal and Child Health as a basis for Future Development (1977-1979).

During the terminal years of the Project, I was unable to travel to Yaounde for personal health reasons. This slowed the preparation of this final report of the whole project, which lasted for approximately six years. In the summer of 1979, all of the personnel but one who had worked in Yaounde were in North America, thus permitting us to hold a two-day meeting (August 27, 28, 1979) in Boston for discussion of our experience and recommendations. Table I gives pertinent information about the nine individuals who served in Cameroon as team members. They all came from North America, five from the United States and the other four from Canada, thus reflecting the many common features of education in the health sciences on the North American continent. We were exceedingly fortunate in the quality of the professional personnel who served so devotedly and conscientiously in this project. They were very carefully selected and their efforts were responsible for whatever we, as representatives of Harvard University and of North American education and training for careers in the health field, were able to contribute to the development of the University Center for Health Sciences in Cameroon as a regional African center for education, training, and research in the health field. For us, it has been a very instructive and enlightening experience, through which our horizons have been broadened and we have made new friends.

As Campus Coordinator at Harvard, I have been privileged to watch the development of the UCHs during the lifetime of this Project. I have been helped magnificently throughout this whole period by Mrs. Nancy Hurst, who has attended to many vitally important administrative details and the laborious effort of typing and reproduction of this final Summary Report.

Charles A. Janeway, M.D.
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<td><strong>Dr. Rainer Arnhold</strong></td>
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This personal review of the Harvard Project efforts at the University Center for the Health Sciences borrows heavily from the writings, statistics, and teaching materials developed by the other team members, Ms. Nancy Garrett, Ms. Lise Cousineau and Dr. Pierre Drouin. Many unique and effective tools and devices to facilitate teaching, speed learning and improve patient care grew from this team effort. Each team member brought his own imagination, energy and strengths to this exciting endeavor to solve old health problems in more effective ways.

We are grateful for the reception and freedom given to us by the Director of UCHS, Professor G. L. Monekosso, and the support of our Cameroonian colleagues at the UCHS and Central Hospital of Yaoundé. I wish to thank Professors H. Nkoulou and J. Mbede in Pediatrics, Dr. B. Nasah in Obstetrics and Gynecology, Professor D. Lantum and Dr. G. Martin in the Public Health Section, Professor V. Ngu of Surgery (Now Vice-Chancellor of the University) and other dedicated physicians and health professionals as well as our colleagues from the Canadian, French and WHO technical assistance groups. I feel very proud to have been a part of the UCHS during these exciting years.

We owe a great debt to the Harvard on-campus group, Dr. Charles A. Janeway, campus coordinator, and his assistants in this project, Mrs. Nancy Hurst and Mr. Steven Atkinson for the fiscal, logistical and moral support required to keep this distant project functional in light of currency fluctuations and the need for supplies, books and on-campus help.

I wish to express my special appreciation to Mr. John F. Koehring, former Director of the USAID Regional Office at Yaounde, who, as an official of the Project and friend of us all, helped assure that we were free to do the tasks for which we came to Cameroon. The administrative tasks facilitated by his staff and that of Ambassadors C. Robert Moore and Herbert J. Spiro, who served during 1973-76 and who supported our efforts in so many ways, are gratefully acknowledged. Noel Guillozet, M.D., Project Director (1973-76)

In early 1973, pursuant to the intention of USAID to establish with Harvard University a contract to provide a technical support teaching team to the University Center for the Health Sciences (hence forth referred to as the UCHS or Center), in Yaounde, Cameroun, recruiting was begun by Dr. Charles A. Janeway, the designated Campus Coordinator, for field personnel. The project intention was stated in the Project Work Plan submitted to the USAID Regional Development Office on 24 April 1974 by the Project Director after unanimous approval of the broad outlines of the program by the Technical Committee of the UCHS which is charged with acting upon such proposals.

"The purpose of this project is to assist the University Center for the Health Sciences in a three-fold institution building effort through faculty support in teaching, direct patient care and research directed toward maternal and child health as a major part of community health. Curriculum and service program development to further the public health, ambulatory and hospital care programs of CUSS for the mother and her child under five are special goals of this project" (Project Work Plan, page 1).
The implementation of this proposal was envisioned with a four-person team composed of a pediatrician, an obstetrician/gynecologist, a midwife and a pediatric/public health nurse who would provide service over four years to the UCHS endeavors by strengthening the faculty teaching staff in communities where the Center had undertaken direct responsibilities. It would accomplish this, not by forming an American medical entity, but instead by improving existing and often weak structures that would continue within the UCHS after completion of the four years of contract support. In this way the team's effort was perceived as an investment in institutional continuity rather than a short-lived task.

THE CAMEROON CONTEXT: DEVELOPMENT OF THE UCHS

A brief description of Cameroon and the reasons for the establishment of the UCHS may be useful in understanding the reasons for participation of an American Medical School Faculty at the Center, and the functions and approach of the Harvard Team.

In many ways, the health problems of Cameroon typify the health care problems which face most countries of Tropical Africa as well as those of South and Central America. Prior to the development of the UCHS and the graduation of the first locally trained physicians, Cameroon had fewer than 250 practicing physicians, at least half of whom were expatriates who usually passed brief terms giving direct clinical care to a fast growing population then estimated at six million. Fewer than half of the physicians were career Cameroonians in the government health service, which has special implications, since it may be fewer than the necessary minimum required for stability of a service structure.

With upward of 22,000 inhabitants per physician, on a national basis, and as few as 1 per 75,000 in some rural areas, physician coverage was far below the minimum advocated by the World Health Organization. Other qualified medical personnel were equally scarce. Nurses were often in major direct care delivery roles in rural areas. Qualified health care personnel were few in number, and many scantily-trained people were by necessity pressed into service throughout the system, both rural and urban. Compounding the health manpower problems are those of remote sites, of roads which are occasionally impassable, and the many communication difficulties associated with tribalism and unwritten dialects.

Until recently, Cameroonians could only receive advanced medical training abroad, and its appropriateness for the health problems of Cameroon was frequently suspect by the more reflective of Cameroonians physicians themselves.

Cameroon is agrarian, equatorial and populated by some six million people unevenly scattered about a California-sized land mass with a climate ranging between desert and one of the world's heaviest rainfall areas. It has large areas in relative isolation from modern transport or developed health care facilities. Cameroon has the typically young population seen in a tropical nation with an estimated half of the population under 20 and less than 5% over 60. It shares in the endemicity of infectious and parasitic diseases of the tropical sub-Saharan nations. Malaria is a formidable cause of morbidity and mortality as is the widespread latent protein deficiency malnutrition seen among young children. In Cameroon and in much of sub-Saharan Africa this is due in large part to dependency on plantain, cassava and other low protein tubers.
during transition feeding. Cameroon has a population growth rate of about 2.0% per year, and infant mortality probably falls between 75-200 per 1,000 live births. The under-five years mortality rate was estimated as 265 in 1972, but it should be stressed that urban vaccination programs accentuate urban-rural differences, and uneven statistics may distort reality.

In 1963 the Government, recognizing the shortage of physicians and other health personnel, requested that the World Health Organization study the feasibility of creating a school of medicine. In the ensuing study the medical needs and assets of Cameroon and its closest neighbors were appraised in light of the economic, cultural and educational intercourse existing between the four nations. The study concluded that Cameroon was a favorable site for the establishment of a broadly-conceived school for the training of various health personnel. A resident WHO advisor on medical education assisted a Cameroonian planning commission to seek faculty and resources. Forty students were subsequently admitted to study medicine in October 1969 under a modest faculty of seven in the newly established University Center for the Health Sciences, a part of the University of Cameroon. In 1976, following technical assistance given by the United States, France, Canada and the World Health Organization, which is now gradually being withdrawn, 44 of the 61 faculty members were Cameroonian.

THE UNIVERSITY CENTER FOR THE HEALTH SCIENCES: A REGIONAL CENTER FOR THE TRAINING OF HEALTH PROFESSIONALS RATHER THAN SIMPLY A MEDICAL SCHOOL FOR PHYSICIANS.

In light of both the shortage of virtually all types of qualified health care personnel, and the importance of satisfactory working interrelationships between members of many disciplines who would ultimately be employed by the Ministry of Health, the UCHS was to have several functions:

1. The training of health personnel of all disciplines and at all levels in a fashion that would imbue the idea and practice of team work as the best way to resolve the health problems of Cameroon.

2. The training of physicians with a solid background in public health to serve as heads of teams truly able to meet the health needs of the community. The physician is to be a planner, teacher and supervisor to a large group of paramedical personnel able to carry out preventive medical programs as well as a superior clinician for medical and surgical problems that surpass the skills of the many others in this team who would deliver the bulk of direct medical care.

The government later decided to develop schools of nursing, midwifery and social services parallel to UCHS, and UCHS has elected to produce trainees in other disciplines non-existent or in insufficient supply to support the health team effort. UCHS currently trains six non-physician disciplines: laboratory, pharmacy and sanitation technicians have now been graduated, and dental technicians, anesthetists and physiotherapists are in training for the needs of other hospitals in Cameroon. A two-year advanced post-basic nursing program (CESSI), funded by the World Health Organization within the UCHS, trains nurse educators and administrators for Cameroon and other French-speaking African nations. A program for the training of graduate level health educators was still in preparation in early 1977.
Practitioners, technicians, planners and teachers will eventually emanate from these ambitious programs intended to assure personnel and skills able to accomplish far reaching and fundamental reorganization of the public health as well as curative medical structures.

THE WORK OF THE HARVARD TEAM:

At project onset in November 1973, manpower was limited to the efforts of the team leader/pediatrician, and a few months later of the pediatric/public health nurse. They were obliged to plan and carry out new initiatives alone for a year until the project midwife and obstetrician could be recruited. The project work plan submitted to USAID in April 1974, was to establish the goals and approach for the proposed four year program. An important limitation imposed by facilities was the absence, apart from a small clinic in Mvolye, of outpatient care and teaching facilities. It was necessary to carry out nearly all clinical and patient care teaching on the wards of the Central Hospital in Yaounde, an institution controlled by the Ministry of Health. At this site, where the larger part of student clinical experience was obtained for both physicians and nurses, there was trivial or no exposure to: (1) antenatal care; (2) postpartum care; (3) family planning assistance; (4) basic well child services, especially immunizations; and (5) preventive nutrition surveillance.

It was the feeling of the team leader/project director that a disparate amount of student time and experience was being spent in treating largely preventable childhood disease without the counterbalancing example of well-organized and visibly effective maternal and child health services. For these reasons, a work plan was proposed in which the major thrust was the initiation of such programs as a part of student experience in the third year of a six-year physician education program.

With acceptance of this Work Plan by the Technical Committee of CUSS and acceptance in April, 1974, of the concept of a UCHS sponsored and operated teaching and demonstration MCH program at the then under-construction Pavilion at Central Hospital, planning was begun for an out-patient program to be opened in the Fall of 1974. Its elements will be discussed later.

While waiting and preparing for this new program, an immediate area of practical involvement for the two team members was in the clinical teaching of students, in which there was a paucity of supervision in what is often termed "bedside teaching." A once-weekly child health clinic at Mvolye presented the occasion to help a maternal and child health care-oriented Cameroonian physician in coping with heavy clinical and teaching loads, and both early Harvard Team members were fairly regular participants. Without assigned responsibility for patient care in the hospital, and no other clinical work site other than Mvolye, the initial two team members served as floating teachers. They were free to discuss patient management with students, to assist in procedures, to teach laboratory skills and to work with students as senior house officers work with junior students in the usual American medical teaching setting. Each was in a position to take an effective role, for example, in attempting to engage nursing as well as medical students into bedside discussion of patient care problems.
Central Hospital in Yaounde had a skeletal physician staff, and in those areas in which students were assigned, the UCHS affiliated teaching staff had other teaching obligations which frequently left students with minimal supervision and with many service activities to perform. In the pediatric area, during any day a dozen critically ill infants might arrive for admission, as well as another dozen requiring triage and out-patient treatment. In this busy hospital, which lacked interns and residents and had a sparse senior physician staff, excessive responsibility was often placed on students as soon as they began to appear on hospital wards. As the least encumbered of the UCHS clinical personnel, the first Harvard Team members were well placed to help in a service role, and in bedside teaching. It was in this clinical capacity that Team members performed for the first years.

Apart from these supportive and clinical teaching activities, the first year was also spent in preparing a unified curriculum in maternal and child health appropriate for medical students and nursing students. The inadequacies of Central Hospital for virtually any form of ambulatory care teaching were glaring. A former French military hospital built between 1929 and 1939 and intended to handle regional evacuations, it was neither ideal for medical teaching, nor for the large number of obstetric and pediatric problems it was obliged to receive. Built when the surrounding city had a population of less than 20,000, it was forced in the 1970's to contend with a local population in excess of a quarter million and with medical evacuations from smaller hospitals over much of the nation.

Administrative autonomies posed an additional difficulty in student preparation. A French colonial tradition was the strict separation of in-patient and out-patient services. The bulk of non-surgical services for young women and for children were grouped under the same "Protection of Mothers and Children" (PMI) and typically operated in complete isolation from in-patient services. For various reasons, medical students were not trained in the local PMI. Further, at Harvard Project onset, there were no regularly organized immunization services operated by the PMI, inconstant availability of vaccine and very limited physician and trained nurse practitioner manpower to meet the heavy demands for curative medicine in pediatrics.

For space needs as well as administrative autonomy, the UCHS had arranged construction of a new building, the UCHS Pavilion, on the grounds of Central Hospital.

Intended to house students on night call, and to provide space for a lecture hall, laboratories, library for medical students and physicians' offices, it also had provisions for out-patient clinics. The task fell to the Team leader to receive the empty and unequipped building and to equip it from existent supplies and by local fabrication of equipment of his design but paid for by the UCHS. The intent was to create simple and durable facilities suitable for the out-patient practice of the gamut of general care. The Team leader opened pediatric out-patient clinics in which each of five physicians consented to rotate to provide afternoon consultations and in which daily immunization services for in-patients and the community could be provided.

THE FIRST UCHS MATERNAL AND CHILD HEALTH CLINIC

In July, 1974, the two Team members and two Cameroonian UCHS members, in preparation for the introduction of out-patient maternal and child health care
teaching programs in the new UCHS Pavilion, began to recruit pregnant mothers seeking antenatal care. The intention was to have available at the beginning of the academic year a number of pregnant women in varying stages of pregnancy and infants, who could serve as subjects. Efforts were made to choose mothers likely to sustain follow-up postpartum care for themselves and their children, and thus serve as subjects. Efforts were made to demonstrate to student groups both the desirable continuity of care and the evolution of pregnancy. An opportunity to follow individual children long enough to obtain continuing growth records for pilot studies of normal growth, a major research component of the Harvard Project, was another consideration.

The first prenatal and mother and child health clinic at Central Hospital was opened in October 1974 with the active involvement of medical students in the 2nd and 3rd years and of nursing students in different stages of training. By intent the program was small in order to be manageable, orderly and systematic. Efforts were made to keep attendance at 20-30 patients per morning session to be divided among 6-12 students, depending on schedules for medical and nursing students, and with an average of four teachers, usually 2 Cameroonian nurses and 2 Team members. Enormous pressure to provide service to more people occurred, and difficulties were encountered in assuring that the essential reasons for the clinic were respected: critical, early opportunities to teach the elements of practical preventive medical services to medical and nursing students.

To interest mothers, valuable services were offered. The clinics, when initially opened for two morning sessions per week on a fixed schedule, thereafter closed only on the occasion of a major national holiday. This was a discipline unusual in the health care structure. Serious efforts were made to assure care for acute illnesses of registered mothers and their children on non-clinic days, a valued service where little outpatient care was usually available in the community. At the beginning, the program was the only public clinic in Yaounde where mothers were regularly followed and immunized against tetanus during their pregnancies and where their children were assured of all basic immunization services, and they were given nutrition counseling. The offering of tetanus toxoid would not appear to be a pioneering effort, but in fact its prior use in Cameroonian children or adults was extremely rare and its availability infrequent. Rey's estimate in Senegal, that at least half of all tetanus occurs in the under five population and three quarters under 20 years, was confirmed by local experience. Lethal neonatal tetanus was frequent. Since the unimmunized pregnant mother could receive lasting protection for herself against tetanus through the toxoid series given during late pregnancy and her infant received protection during the vulnerable newborn period, a double mission was accomplished for them both. The opportunity to impress families and the largely unvaccinated medical student body with the importance of vaccinating other children at home was seized. They were directed to a weekly clinic initiated by the project at the same site and later taken over and operated by another government agency.

The primary intention in developing the well mother/well child program was the exposure of each student, by his active personal participation in a practical exercise that would simultaneously teach him clinical skills and preventive medicine. Here he should acquire a firm foundation in the characteristics of a normal mother and child and how they may be kept well economically and efficiently.
From a care delivery standpoint, here a student could see the importance and comparative economy of well-run out-patient medicine in contrast to hospitalization. With exposure to the systematic vaccinations that they had rarely received themselves, even as medical students, they learned to organize and give basic immunization, and became familiar with the practical problems of vaccine handling to retain its effectiveness. They learned to recognize faulty child feeding patterns, to lecture to mothers on good nutritional measures and the characteristics of normal growth and development. To demonstrate the utilization of manpower of different skill levels, aides as well as nurses and physicians were used in the center to carry out its functions. In 1975-76, the training program was extended to the maternal and child health clinics of the Presbyterian Church to provide additional teaching resources for more students.

The very essence of health problems in developing nations is a lack of preventive health care and a high toll of infectious, parasitic and nutritional diseases. These maladies wreak the heaviest and most costly toll in children under five years of age. A solid understanding of the services which should be directed towards this group and an ability of health professionals to organize these efforts, is a key to altering the health patterns of Cameroon. Curative medicine cannot be ignored in any Cameroonian health endeavor, and efforts were made to blend it with the practical aspects of health maintenance and theory before embarking on the later clinical years, which emphasize illness and its management.

Work of the Harvard Team: Obstetrics and Gynecology Component

In late 1974, the arrival of the nurse-midwife and obstetrician completed the proposed Harvard Team and added depth to maternal health services. They assumed responsibilities for the rudiments of an out-patient antenatal and post partum teaching program initiated in the second and third year medical curriculum by earlier team members. They soon found the major site for their involvement to be in the Central Hospital Maternity. In this unit there were approximately 11,000 deliveries annually with the expected complications, plus numerous medical evacuations from elsewhere in Cameroon, including complications of criminal abortion and substandard care given. They elected to concentrate on three major endeavors, while supporting the twice weekly out-patient maternal and child health teaching commitment made before their arrival. These were:

1. Establish base line statistics and identify major problems facing the division;
2. Establish out-patient clinics for high risk pregnancy, child spacing and antenatal care;
3. Offer direct care for the staggering in-patient load and, in so doing, carry out clinical teaching and supervision of medical and midwifery students at advanced levels.

The addition of Team manpower rapidly culminated in broadly perceived changes in Central Hospital's busiest service and in the UCHS program there. The major changes were:

1. A coherent and staged teaching program for UCHS students on obstetrics affiliation.
2. Visible reorganization of the busiest in-patient section of the Hospital.
3. Development of areas of research pertinent to problems of pregnancy seen locally.
4. Encouragement and support to students preparing research theses (for the MD and other degrees) that helped delineate and analyze the major obstetrics problems in Cameroon.
5. Introduction of distinctive teaching materials permitting easier patient follow-up and rapid recognition of abnormalities in the conduct of normal deliveries.

An important contribution to long-range planning for maternal and neonatal needs for both the UCHS curriculum and Cameroon was the assessment made by the Obstetrics section in 1975-76. A long-range course was charted to help alleviate shortcomings.

FAMILY PLANNING

Cameroon, with a degree of underpopulation in much of its territory, is politically pro-natalist and has been in varying degrees hostile to birth control in the past. The last decade has seen substantial modification in this stance toward an acceptance of the family planning concept as a part of family health services which can in effect now be made available without propagandizing those who seek them.

The arrival on the UCHS scene of a highly competent nurse-midwife with considerable experience in teaching, organizing services and carrying out family planning programs at the beginning of the second year of the Harvard Project was most fortunate. It was also well-timed with publicly expressed sympathy for the availability of such services. The interest was further stimulated by the arrival of the Project obstetrician, who, through his clinical participation, rapidly became aware of the significant number of (and frequently disastrous) criminal abortions. The strong support and interest of the Cameroonian head of the Obstetrics Section, the obvious need for alternatives to abortion and the arrival of Team staff coincided with a community receptivity for the debut of medical services new to the UCHS and the Yaounde community.

The Child Spacing Clinic was opened in January 1975 in the Team obstetrician's office in the Central Maternity and by September 1976 had offered services to more than a thousand patients. Referrals came from physicians, midwives, hospital staff and former patients. Through early 1976, women delivering in the antenatal program organized by the Team staff were also customers for services.

SOCIAL AND ECONOMIC STATUS OF PATIENTS IN THE CHILD SPACING CLINIC 1975-76

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The most popular child spacing method proved to be the intrauterine device, utilized in 54.1% and obviously the least costly approach although neither satisfactory to nor accepted by all. The pill and other methods were also offered. Eighty-nine patients were permanently sterilized, who, as a group, had an average of 8.8 living children.
In 1976 sixth year medical students rotating through the obstetrics service had the opportunity to work in the Child Spacing Clinic. The sixth year students learn the techniques of IUD insertion and menstrual regulation and would be expected to participate more fully in surgical interventions than the fifth year students.

The importance of the Child Spacing Clinic is so well recognized that it will probably be continued by non-project staff at the end of the Project's life. It has been one of the most creative and well-received of Project efforts, in large part through the constancy and energy of Ms. Lise Cousineau who began it with Dr. Pierre Drouin, and through the support she received from the other UCHS obstetricians.

HIGH RISK PREGNANCIES CLINIC

Another imaginative Team effort, which has had success, largely through the participation and interest of three Cameroonian colleagues, is the High Risk Pregnancies Clinic which was started in January 1975. It is often said that the "high risk" group, some 15-20% of the obstetrical population, is responsible for 80% of maternal and perinatal morbidity. In a Yaounde clinic population, where grand multiparity occurs at an average of 26.6 years and where the perinatal mortality rate in 1975 was 43.3 per thousand live births, there was a high potential for obstetric disaster. Unfortunately, in the 11,000 deliveries that were conducted in the Central Maternity Pavilion, a great number of patients simply arrived from the surrounding area for delivery with little if any prior care or observation of impending problems. There was a constant mix of normal parturient mothers with those at often unrecognized high risk.

As part of a rational redesigning of regional obstetric services it is hoped that satellite maternities will ultimately handle most normal deliveries while recognizing and referring high risk patients to Central Maternity for special care. Efforts were begun in 1975 to recognize the high risk mother and arrange special care for her. Simultaneously, the identification of this patient group for special handling would permit them to serve for student teaching, i.e., for instruction in the management of more difficult problems that UCHS physician graduates will be expected to handle in regional hospitals. A key feature of the High Risk Pregnancies Clinic, was the faithfulness of its occurrence. A constant Wednesday morning occurrence, the clinic was convenient for patients and thus encouraged them to return for continuing care.

The high risk problems seen were prior hemorrhage, repeated abortions, cervical incompetence, twin pregnancies, teen-age pregnancy, organic diseases, hemoglobinopathies and negative Rhesus factor pregnancies, hypertension and pre-eclampsia.

The grouping of these patients in a single, but busy morning clinic presented a good opportunity for the teaching of fourth, fifth, and sixth year students in the management of this diverse group of atypical pregnancies and to alert staff to potential problems with the delivery.

In terms of institutional development, the High Risk Pregnancies Clinic was an idea whose time had come. The addition of the Harvard Project staff to that of Central Maternity permitted this good idea to be developed and to serve as a clinical teaching resource, a care delivery model and an invaluable service to the community. The perinatal mortality fell from 413 to 31.2 per 1,000 live births between 1973 and 1975 at Central Maternity, and continued efforts such as these will contribute to further declines.

*more than 5 children
Team members discovered, in their hospital based clinical work, the vastly different characteristics of their two major clienteles, mothers and children. The obstetrics team conducted statistical analyses of toxemias, contracted pelvis and serious maternal malnutrition. They delineated the generally excellent outcome of pregnancy for mother and child in Eastern Cameroon. The major clinical problems were to assure a hygienic delivery with good handling of the newborn and an ability to intervene rapidly and competently with Caesarian section when needed or with surgical measures to control bleeding and the other frequent problems that can be expected in the conduct of 11,000 deliveries annually. Team members appropriately spent most of their time in attempting to organize the simple, lower-level techniques needed to assure safe, normal deliveries, and in teaching and performing the high-level emergency interventions. The introduction of out-patient clinics for child spacing and high risk pregnancies was a genuinely new and a useful mode for teaching the delivery of important services on an out-patient basis.

In pediatrics, by contrast, team members initially saw few normal healthy children. It was necessary to contrive clinics, import unavailable vaccines and begin antenatal clinics in order to secure normal, well infants for the teaching of physical examination, growth and development, the performance of immunization, and vaccine handling. The clientele of the Pediatrics Section of Central Hospital tended to be seriously ill infants who were underweight and usually suffering from at least one obvious environmental problem. Severe dehydration from gastroenteritis and measles, to the point of circulatory collapse, was a ten times a day occurrence. Children frequently arrived nearly moribund with late complications of measles and chronic malnutrition. These problems, cerebral malaria, profound anemias and life-threatening infectious diseases necessitated rapid diagnosis, transfusion and perfusion, and made the pediatric service the hospital's busiest from the point of view of the number of critically ill patients arriving and under care at any one time. Malnutrition was involved in about 75% of all admissions. The acute complications of measles represented no fewer than 500 direct admissions in 1975. This one disease and its complications were responsible for one half of all hospitalized child deaths in 1975 in Yaounde.

To teach good clinical management of acute and often complicated problems was an obvious necessity since these were major problems to be faced in future by clinicians. On the other hand, the most complicated, costly and discouraging to treat problems which filled the ward, among them the malnutrition provoked in babies by bottle feeds, were clearly avoidable. Further, their prevention could theoretically be accomplished by non-medical or paramedical personnel and team organization, emphasizing immunization of infants and by influencing mothers to care appropriately for their infants. Programs emphasizing simple preventive child health care struck the Team members in pediatrics as one of the very highest teaching priorities.

In pediatrics, the team members came to feel that improvements made in management of acute clinical care contributed little to solution of the major problems of a constituency that, although young, displayed much chronic and avoidable disease and an appalling mortality rate.

The members of the Harvard Team found themselves torn by cross purposes. In obstetrics by mid 1976, the emphasis increasingly became one on skilled acute intervention, with a wish to have student contact with mothers occur
later in the curriculum, when, admittedly, student understanding of physiology and the techniques of examination were considerably advanced. In pediatrics, team members were anxious to have students learn as early as possible the means of maintaining child health easily and economically. They felt this could most easily be done by offering prenatal care to mothers motivated by the normal concerns of pregnancy, who would usually deliver without problems but would soon present their ill children at Central Hospital suffering from bottle feeding malnutrition and measles. The Pediatrics section felt that this should be a teaching priority in the third clinical year, before "curative" medicine had begun to dominate the teaching priorities, and it should then be reinforced in subsequent years.

**BARRIERS TO SUCCESS**

Institutional barriers can impede cooperation and generate ill will. Failure to include the obstetricians of the faculty in official university level committees in the planning of service facilities, in the making of basic curriculum decisions and in the discussion of service roles occurred. They often felt that their opinions were considered unimportant. The constant demands made upon them for the performance of Caesarian section, care of obstetric calamities and management of the complications of criminal abortion in a service delivering in excess of 11,000 mothers per year, as well as for medical evacuations from other areas, constantly reminded them of this injustice. This fostered a tendency for the obstetricians to isolate themselves geographically and from programs in surgery and in pediatrics, both of whom in fact shared similar frustrations with inadequate facilities, personnel and the burden of acute care, but did have substantial input into university planning and curriculum decisions.

Paucity of junior personnel to assure continuity of clinical care, while senior teaching members (occasionally a single person for a department) attended administrative meetings, created a dilemma for dedicated conscientious clinicians. They often felt obliged to assure student supervision but could ill afford to neglect numerous meetings in which their salaries, facilities, authority, responsibilities and future work were often considered. The general lack of interest by the faculty in programs serving rural and less attractive locations (judged useful for student preparation because they typified medically needy areas) is not surprising. Many faculty members sympathetic to the problem realized that their personal involvement would not only remove them geographically from the limited amenities available but from faculty considerations that might well determine their fate in the institution.

These factors favored an urban centralized operation for the UCHS, rather than in more relevant outlying rural settings. They encouraged a stronger sense of specialty terrain than would seem to be ideal in a program intended to emphasize global views of the physician's role in a generalist rather than specialist function, a rural rather than a metropolitan orientation.

Technical assistance personnel, while relieved of most of the institutional ambitions of their Cameroonian colleagues, were forced to consider support for their various programs, and often identified so well with their Cameroonian counterparts that they, too became insular and oriented to departmental goals rather than to broader national health planning aims.
THE UCHS TRAINED PHYSICIANS: HOW GOOD WILL THEY BE?

UCHS graduates will unquestionably be better prepared for the problems of their African terrain than will graduates of European and North American schools of medicine. They will have been exposed to a faculty unique in its heterogeneity, diverse and colorful in individual viewpoints and rich in professional experience. Considerable good will, high hopes and often the sublimation of personal viewpoints have been offered to support this new institution and lend it continuity.

In terms of technical competence, the more aggressive of the students will have had more opportunity to do major surgery, handle the principal disease entities in childhood and to assume responsibility for the care of seriously ill patients of all ages than in any school of the author's experience. The exposure and experiences of each succeeding class have been, for the most part, enriched by a larger faculty, improved facilities and to some degree by greater availability of equipment and vaccines each year.

One point of worry is that the student body of the UCHS, while a locally privileged group in many ways prior to their entry, is almost uniformly poorly founded by more-developed nation standards in their personal health experiences. These are the environmental health factors of community-wide immunization, good water supplies and the nutritional surveillance of children with scales and a ruler. Judging by the very low immunization status of UCHS medical students, it appears that many arrive at a point of considerable technical skill without having acquired a true sense of the importance of these fundamental requisites for good health in the Tropical African community.

Some initial surveys done by the Harvard Project suggest reasons to be discouraged by the performance of the UCHS in convincing students, i.e., moving them to the active application of preventive medical principles in regard to immunizations. Despite lectures in preventive medicine beginning in the first year, practical exposure in the third and sometimes in other years, there seemed to be little change in immunization status during the first three years of medical studies. The fourth year showed an increase of nearly 25% more of the students vaccinated, for a total of 45%. There was little improvement through the 5th year, when it would be hoped that their vaccination status would reach close to 100%.

As of June 1976, about ten months after the beginning of an aggressively promoted tetanus toxoid immunization campaign directed toward the student bodies of UCHS, fewer than half of any of the medical school students in any year had received vaccination by their own report. It is unfortunate that a mandatory institution-wide policy for student immunization was not instituted to accompany the didactic material at the onset of the curriculum. Clearly, if practical programs are left until late and then not officially implemented, they may not be effective either as an educational or preventive medical device.

The fifth year medical class would be expected to be in independent practice within one year, and would have the organization and direction of community immunization programs as one of their major responsibilities. Clinical tetanus is no abstraction for medical students in Cameroon, as it usually is in the United States. With generous opportunities to see the florid disease in adults and children during their 4th, fifth and sixth clinical years, non-vaccination among this student group is all the more remarkable and discouraging.
THE UCHS CURRICULUM: AREAS OF CONCERN

An uncontestable fact about Cameroon and a great many other tropical low-income nations is the enormous morbidity and mortality from preventable infectious diseases, particularly among the always numerous "under fives"; poor water supplies and the nonrational feeding of protein deficient foods. The potential ability to master most of these problems with village workers of very narrow and limited training rather than with costly-to-train physicians and nurses is a well-known and debatable supposition. These preventable maladies are illustrative of the most widespread, frequent and destructive of Cameroonian health problems.

Medical students are always anxious to get on with the task of curing the gravely ill, and clinical faculties in institutions such as the UCHS are busy and often overwhelmed with performing these services and teaching students clinical management. Lecture time on preventive medicine is generally sufficient in the curriculum. What is needed is more seriousness on the part of the UCHS in assuring participation by its students in its own community programs in which immunization, child weighing and nutritional guidance are more faithfully and effectively practiced. Exposure to these important public health practical exercises should occur often throughout the six year medical curriculum.

From 1973 through 1977 much of the more basic maternal and child health teaching program was moved to later years, already heavily burdened with the teaching of the care of the ill. If this preventive medicine teaching is not taken seriously in this nation, with the enormous percentage of its population among the very young afflicted by a high mortality rate, the investment in UCHS doctors may not yield the health improvements expected, through failure to apply simple, rather than complex technology.

Appendices 1, 2, 3, 4, giving figures for enrollment and allocations from the national health plan, follow.
I. INTRODUCTION

The Harvard-CUSS (CUSS or UCHS means University Center for Health Sciences) project has operated in Cameroun (Africa) since 1973 under the general direction of Dr. C. A. Janeway (Harvard University, Boston) and Dr. N. Guillotet (1973-76) in Yaounde, Cameroun.

The project includes two main divisions, one The Child, the other, The Mother. An integrated concept on the Care of the Mother and the Child in the Tropics has been developed. The project itself is part of the existing structure, the CUSS, at the University of Yaounde.

The Maternal Section began its activities in October 1974 and terminated in December 1978. The project itself ended on December 31, 1979.

The author of this report is a qualified obstetrician and gynaecologist who was responsible for the Maternal Section.

His Camerounian experience was from October 1974 to July 1976, and two years later (September 1978 to December 1978) when he was acting as consultant during this second stay to secure the existing program, and to produce permanent teaching materials.

This report will give the experiences, achievements and the frustrations in our Section. Two other persons were closely involved in this Section: Miss Lise Cousineau (midwife, three years) and Dr. John Naponick as my replacement from August 1977 through September 1978.

II. MATERNAL SECTION - Major Goals.

At the beginning our major goals were:

1. to develop an integrated concept of Mother and Child Health Care for the Tropics;
2. to establish reliable statistical data for planning;
3. to establish clinics;
4. to improve standards of medical care for patients (curative and preventive);
5. teaching (for medical and paramedical students);
6. research;
7. the planning of continuity when the project comes to an end.

III. ACHIEVEMENTS OF MATERNAL SECTION

1. Statistical data has been scrupulously collected. A record was established for maternal, delivery and clinics. See Annex I, II, III. Data have been studied from 1973 on.

   Many M.D. student theses, as well as personal researches of the staff have resulted from analyses of these data.

2. Establishment of clinics for teaching and care.
   Pre-natal - normal (for teaching purposes)
   high risk pregnancy (determination of criteria) - (Annex IV)
   Post-partum - at six weeks, for Mother and Child
   Child spacing - the concept of Child Spacing was adapted to more than 2800 new patients; all services were available.
   Infertility (male & female) - continuation with Dr. B. T. Nasah of what he had started in 1972.
N.B.: All of these clinics are still functioning and have been controlled by Camerounians for more than a year.

3. Improvement of patient care

For the mother (curative more than preventive)

by clinics;
by involvement in delivery room (Partogramme, teaching) and gynaecological wards;
by determination of high risk factors (in the non-prosperous group of patients - high risk pregnancy occurs in 28.3% of the patients and is responsible for more than 66.4% of our mortality and morbidity).

For the infant

by detection of high risk factors;
by better supervision at delivery;
by better care of the newborn (care of umbilical cord, environmental TO control, early diagnosis of small for dates infants).

For males - infertility work-up.

For family - Child spacing concept.

N.B.: With the introduction of the Partogramme (Annex V) our perinatal mortality had decreased by 10 per 1000 live births in 1975, for example, with a perinatal mortality of 31.2/1000 (non-prosperous patient group).

4. Teaching responsibilities of Maternal Section. Supervision of the 4th, 5th, and 6th year medical students. Responsibility of the 4th year teaching program in obstetrics and gynecology. Over the past four years, and with the collaboration of Dr. B. T. Nasah, we have supervised: 26 M.D. theses; 4 personal papers (final year) of CESSI students. Participation at a national level in two major symposia for private institutions (3/75, 3/76).

5. Research. Priorities were defined, causes of mortality and morbidity determined; for example, causes of maternal mortality (120 patients) are:

1. Haemorrhage 43.3%
2. Sepsis 16.7%
3. Medical Complication 15.8%
4. Uterine rupture 10%
5. Pre-eclampsia 8.3%

Note the difference with some other similar countries in Africa. In Cameroun, Pre-eclampsia and uterine rupture are not the leading causes.

Determination of high risk factors: We delivered 12,000 mothers annually and estimated that more than 25% of these mothers are high risk. At least 400 new patients a year are seen at the high risk pregnancy clinic.

Determination of the usefulness of the Partogramme in the management of labor.

Infertility factors (importance of infections, parasites...).

Definition of child spacing concept. Cameroun is pronatalist. Put in its perspective, the child spacing clinic is a need in Cameroun. 62.5% are married. When married they have at least 4 children alive and have had more than 14 years of marriage at their first visit at the clinic. 31.5% are single, usually students, educated or working.
High prevalence of gonorrhoea. 10% of our patients at delivery and 21% at the child spacing clinic were shown to have gonorrhea.

6. Hospital level accomplishments.

Re-organization of the Maternity Section of the Hospital.

Improved sanitary conditions. In our memorandum in 1975, we mentioned the poor sanitary conditions. That report stirred up many reactions and meetings with few immediate changes. However, in 1978, it was a pleasure to see how clean the hospital ground was, and also the absence of rats. So keep in mind changes do come but slowly, at their own pace.

Improvement in material supplies.


We can schematically illustrate the organization of such a concept in the following manner:

We believe that with the determination of high risk factors for different groups of patients, better screening at the first clinical examination will result in better care of the patients, high risk patients being referred to more qualified center resulting in better care and use of available manpower. In one of our studies, we have observed that the smaller the institution, the higher the mortality rate. For example: for an institution of less than 500 deliveries a year, the maternal mortality rate was 7.4 per 1000 deliveries while for an institution of 500 or more deliveries it was 2.3 per 1000.
Establishment of hospital delivery for all patients is unrealistic. But decentralization with satellite maternities where uncomplicated pregnancies could be taken care of and a central hospital where high risk pregnancy patients could be followed and delivered is the real solution. With this option, you could realize better care and utilization of human and material resources.

8. Scientific contributions. Most of the work was conjoined with Prof. B. T. Nasah.

Memoranda - 2  Symposium - 4
Documents - 3  Papers - 5
Conferences (guest lecturer) - 3

The value of the "Partogramme" in management of labor. It will be published in Obstetrics and Gynaecology. This inexpensive tool can save many lives and improve the quality of care in delivery rooms in the Tropics.

In Plan -
Miss Lise Cousineau is writing a book on the paramedical aspect of maternal care.

9. Homologues and Personnel. Three Camerounian mid-wives, Miss Lembe Mathilda Ndep (director), Mrs. Mbassi Berthe and Miss Nghoda Angeline, are responsible for the clinics. These clinics are functioning well. As such there are no free services. Every new patient pays a nominal charge at their first visit and buys their own medication. With the material supply of Pathfinder Funds and this fee we can buy our own medication as needed, furniture and pay for housekeeping. I believe it is one of the major reasons for survival of these clinics. The patient by paying, feels that the service is valuable, she is treated as a human and respected, and she takes it more seriously.

Dr. Susan Tataw, a general physician, has worked with us for the past four years. She was appointed six months ago to the paediatric department. At the new CUSS hospital, she is the best candidate to be in charge, as a primary physician of the out-patient clinics of the Mother and Child Section. She is a hard worker and very conscientious person.

Dr. Pierre Sende has worked with us for more than a year. Since last September he withdrew his support due to financial problems - ambiguous situation created between the government and the CUSS. Another obstetrician, Dr. Robert Leeke, (F.R.C.S.(C)) who has also trained for six months in neonatology, has returned to Cameroun and joined the group since March 1979.

And last but not least, Professor B. T. Nasah. He is the director of the Obstetrics and Gynaecology Department and responsible for the Section of Mother including clinics.
IV. FRUSTRATIONS

Frustrations are normal events in any developing country, but we would like to point out a few of them.

Lack of materials - It is difficult to understand that a project would send an obstetrician or a team in Obstetrics into Africa without adequate material supplies. Over the years we have had to solve that problem. Sincere thanks to the Pathfinder Fund for their discreet but continuous help (material, moral support) and to U.S. AID.

In hospital - Deterioration in care of the patient due to recent worsening situation in material supply, and some logistic supports despite an increasing financial budget at Ministry of Health.

At the international level - The obstetrician was too often ignored in politics regarding The Care of the Mother and Child (more so in 1974, 1975 than now). Paediatricians or Public Health people are taken to be the best persons to determine and define the priorities regarding the Mother! Involvement of these three disciplines together rather than one against the other will result in a more realistic approach to planification for Mother and Child Health Care in the Tropics. The loss of an adult life has a serious impact (human investment - due to biological selection in their infancy, financial cost, etc.). Fortunately, as a doctor, I can say that adult Camerounians are well built and very healthy.

Construction - For more than two years the construction of CUSS hospital has been completed. The only available services to the patient are the out-patient clinics of the Maternal Section. These services have been available for more than a year.

Major structural changes have to be made before the hospital could function, (adequate drainage, structural modification adapted for tropical rain, central air conditioning to be redone, etc.). In 1975, we presented a document to modify the structure of the delivery rooms. It was intended to be more practical and adapted to most recent concepts.

The costs of modifications were estimated as too high even though the area in question had not yet been constructed.

Lack of integration between different projects and USAID - In earlier dates this lack of integration was more acute. With Dr. A. Henn a definite change was observed. It is not only important to create a good project, but we have had to look at its practical aspects and its integration.

V. IMPRESSION OF MY SECOND STAY

A clear amelioration, modest but present, was found in all areas except:

1. Lack of material or pharmaceutical supplies for patient care despite an increased budget at the ministry level.

2. Lack of adequate supervision to the students in their clinical and laboratory work.
Over the past year, foreign aid programs of France, Canada, U.S.A. and WHO extended aid to the CUSS which is now fading. In September 1978, a new director, Dr. Eben Moussi and a new assistant director, Prof. Lantum, were appointed. This new administration might bring new ideas and solutions.

I do not subscribe to the idea that the most important factor in the tropics regarding medical care is simply and only prevention. No doctor could do good preventive medicine if he cannot recognize the symptoms, signs, different factors and make a diagnosis of a given disease or abnormality. To be a good professional in preventive medicine you have to be a good clinician. Prevention should not be the whole aim of a medical school even in the Tropics. Priority changes with different groups of patients.

Another major danger is "Fever of multiple institutions." Some of the professors seem more concerned in creating new institutions than in teaching to the students. Occasionally some international organizations are responsible for such a trend ("a sin"). For example:

To create a school of tropical medicine while CUSS is a medical school in the tropics.
To establish a special institution for Mother and Child while within the CUSS there is such a section.
To promote a program for residents, while the promotor himself is not recognized as a qualified specialist and our CUSS doctors have not recognition of their degree in other countries, etc.
Why not strengthen the present structure and expand it within the CUSS? By doing so, we are supporting the existing structure and lowering the cost.

VI. SOME REFLECTIONS FROM MY OWN EXPERIENCE

Cameroun. Being intelligent, educated, the Camerounians want to take care of their own destiny, priorities, etc. Their behavior has become more aggressive and critical.

Volunteer. To be a good volunteer you have to be a well-qualified, conscientious and integrated person in your own country and milieu. In the future the African will not accept mediocrity. In my last séjour, I noticed that the Africans were more respectful to an experienced person of a certain age. That was true not only towards the volunteer but also to their own people. They are resistant to any new professor or director, principally if the latter has been taught by them.

Training (of an African in developed country). Some obligations, responsibilities, criteria should be applied for any student in a given training program. We have passed the stage where politics has a major influence in science or medicine. I do not think that it is acceptable for any of our institutions to support a medical student who doubles his years more than once, or a Ph.D. student to take practically double time in his years of basic requirements at our cost...! Unless we stress our values and insist that our criteria and obligations are followed, the value of our own institutions or degrees will be depreciated.

For any trainee, an exchange visa with a limited time should be the accepted policy. Such a policy is beneficial for both countries. Also, we should stress, in accepting any candidate, the two following points:
1. The candidate should have a few years of experience in his own country before any further training. It is very difficult for the African to re-adapt himself to his own country if he was outside for 12 or 14 years. For any new CUSS graduate, the government should oblige him to have two years local experience before considering any further training.

2. A post should be reserved for the candidate when he returns to his own country after the training is completed.

One of the most frequent dangers is that the trainee considers the stage outside of the country as a political and social gain, or a personal financial benefit. Too often we have witnessed the loss of dedicated people in the clinical area after a period of such training. In our project, we have three midwives responsible for the present clinics. All three were trained by us, and only one went to the U.S.A. for a period of three months.

N.B.: Too often I got the impression that some international organizations were looking for trainees not so much for the benefit of that country but for their own prestige and interest. I really question the intentions of such organizations.

Program. In establishing a program, you should be concerned realistically with the need of a given area. To illustrate, you cannot ask a child to write a poem when he has just started to write.

In medicine at least, any general principle should be adapted to different situations. Our research and experience support such an approach. For example, in Family Planning what is true for India is unacceptable for Cameroun. In Cameroun the concept of child spacing could be realized only within a whole concept of Mother and Child Care.

In its execution a program should include three major phases: a) volunteer and homologues are working together. In fact, you can always find an homologue; his qualifications might vary from yours... b) fading phase - where the homologues assume the responsibility. c) further support (moral, financial) to homologues after the volunteer team has left.

USAID. In science or medicine, there should be no place for influence or corruption. If it exists we are defeating our own effort. A better integration between projects could be very profitable.

Construction. Any construction should be planned by qualified experts, and well adapted to the need and reality of the country. An operating room with large windows is more useful than one built in a closed area with central air conditioning!! No further comments.

Maybe 5 to 10% of the budget should be reserved for the training of local people regarding the maintenance of the building and the instruments.

Diplomacy. A country is well represented by its technocrats, but the volunteers or professionals who work with and help people of that country might be the best ambassadors.
VII. FUTURE PLAN (Possible)

In Africa, Cameroun has a privileged position. Its bilingual policy makes that country quite attractive. In the following we are submitting some ideas which could be realized:

CUSS - Center of infertility (male, female)
Section of Tropical Medicine within CUSS
4-6 months nurses training in the care of the
Mother and Child
Child spacing clinics training centers

Promote a school of nursing - nursing care of the patient is terribly deficient in the tropics.

Establish an exchange program at the level of residents.

Promote a national program for detection of high risk factors
(mother and child, venereal disease, prevalence and detection of infertility, sexual education...)

Promote the national use of the Partogramme, an identical pre-and post-natal maternal card, birth registry and uniform recording of maternal mortality.

Have a national symposium on the care of the Mother and Child - for people who are working in public institutions.

VIII. ACKNOWLEDGEMENT

To the team and mainly Lise Cousineau (mon bras droit), Soeur Rollande Michaud (for her help on the gynaecological wards).

To the Pathfinder Fund - for their discreet support.

To my superior, Dr. C. A. Janeway for his generous guidance and understanding.

To all Camerounians that I worked with, especially to my "Black brother" and "best friend" Dr. B. T. Nasah.
INTRODUCTION

Problems I had to overcome. The word "problems" is very objective. I almost prefer to use the expression "effort of commitment" for its subjectivity. Effort of commitment not for a lucrative or a political goal, but for the progress of a humanitarian cause in which I believe thoroughly. Whatever is the discipline in which one works, the problems are as multiple as the actions one has to play, the types of material one has to use, the basic principles one has to apply, the acquired knowledge one has to communicate, the number of people one has to train, in other words, the implication of one's own self to give in a milieu which differs from one's own.

I. PROBLEMS WITH THE LANGUAGE. Our experience created a medical precedent in the Ministry of Health's politics. We had to bend to the exigences of an investigation, to prove the utility, indeed the necessity, of a Child Spacing Program to all the levels of society. This investigation aimed not only to build statistics but also to draft the records which are indispensable for the running of any clinic. If "statistics" mean mental efforts and discipline to organize data in a way to build a realistic image of a specific situation, it also means a faithful accumulation of compelling statistics and often ungrateful and lonely work hidden behind the daily routine.

II. PROBLEMS FROM THE CONFLICT OF CULTURES. If there is a clash between the way of living in the rural and urban areas, how much more is there one between the Cameroonian culture and the one I represent? This difference entails many dangers, if, ignoring the customs already existing, I advise and teach new ways of living without discernment. Many women here will refrain from their sexual life while breast-feeding their baby because they believe that the semen and the elevation of the body temperature at the time of their relations will deteriorate the milk which in turn will make the baby sick. To encourage the same women to resume their sexual life under the pretext, that, with a method of contraception they will be protected from the pregnancy, is to encourage a too precocious weaning and with it, all the consequences of malnutrition we know too well. We can change the way of protection, but we cannot change the beliefs, the customs, nor the taboos.

III. PROBLEMS IN THE ORGANIZATION OF THE MATERIAL AND OF THE SPACE. We started with nothing or nearly nothing in a room of 3 meters by 4 meters. We had to make the best of what we had and so we did, even now with the clinic of over a thousand patients. We do not have running water in the office. Notwithstanding our lack of comfort, we do manage to assure discretion and privacy to the patients during the exams and asepsis to our technique during the insertions. So far we have used formaldehyde in tablet form for sterilization of the gloves, the instruments, devices and swabs, but the fumes are most irritating to the eyes. This method, however, is efficacious, of low cost, and easy to apply anywhere in Africa.

IV. PROBLEMS IN THE FORMATION OF HOMOLOGUES. It is our first concern. I did not come here only to give my energy, my time and my capacities, since all these will cease when I will leave. The only way to justify the time I spent here doing the kind of work I love is by leaving behind me, in the ones who will replace me, the knowledge, the confidence acquired from my years of experience. We are still
working on it. To form homologues is no problem—to find them is! What an expatriate produces as work requires nearly four people here because, when forming a team, one has to foresee that among the four midwives there will be one off sick, the second, gone to the village because of a relative's death, the third one to stay at home with a sick child, while the fourth one will be very tired as a result of her pregnancy. These facts are common and constant, and nobody can do anything about or against them.

V. PROBLEMS IN THE TRAINING OF STUDENTS. The training of students requires a lot of tact and patience to persuade them of our convictions and a lot more energy to get them to respect discipline, because discipline here does not exist. The students are given the title of "Great" man by patients from the beginning of their studies. Notice, I do not say from the beginning of their careers, but they do behave as if they knew everything from the time they start wearing the white coat. They start private consultations and write prescriptions long before they learn anything of basic hygiene and of asepsis. Although they receive lectures on nursing sciences first, they glide above these concepts as they do above the bacterial world, which they practically ignore for being invisible. This attitude is absolutely disarming and disastrous. It is so much easier for them to prescribe antibiotics indiscriminately: it covers a lot of sins and ignorance.

A vicious cycle exists: On the one hand, the doctors' status depends on the length of the prescription given, on the other hand, the patients' conviction of being well treated depends on the length of the prescription received. This pharmaceutic capitalism puts the individuals, living on small incomes, at the mercy of a certain fraud which is a social injustice.

CLASSIFICATION OF MY WORK ACCORDING TO THE PERIOD OF TIME COVERED

1974-1975 DELIVERY ROOM

First contact with my future occupations. Period of observation of the staff, the work, the material, the locale, the register books, the attitudes and the students.

The whole situation is depressingly in need of improvement. Improvement meant and still means:

1. Waking up minds and consciences on hygienic practices and aseptic techniques: (a) on admission of patients; (b) during labour; (c) during delivery; (d) after delivery.

2. Showing the care of material in use: cleanliness, preparations in advance of material needed, to reduce spoilage and abuses.

3. Getting involved in the preparation of disinfectant solutions, rubber bands for the cord, dressings, gloves, cotton, etc.

4. Teaching organization of work. Following the evolution of labour on partogramme. Preparing the trolley for delivery.

5. Trying to inculcate humanitarian feelings towards patients such as helping them as much as possible by: giving advice on breathing, relaxing, pushing. Making the patients comfortable, not abandoning them for hours on bed pans or letting them lie in cold, wet, soiled clothes.
These points sound so elementary that they should not be mentioned except in the training of fresh students. In fact, they are taught to the students, but these, because left without supervision during their stage or following their training, quickly lose their good principles and their learned theories. This devaluation is brought by their contact with some non-conscientious, undisciplined staff members, with exasperating shortage of the bare essentials to work with, and with the repulsive lack of fundamental hygiene and cleanliness in a place where everything should be sterile.

Had I come here only to work in the Delivery Room, I would have had my hands full all the time. But I was not here for this purpose. Although I did change my occupation, my hands still remained full, with the clinics that started in January 1975.

**ANTENATAL CLINIC - NORMAL PREGNANCIES**

This Clinic was already in existence when I arrived, but it was only at a larval stage. The students of 2nd year Medical School learned about urine analysis, blood pressure and weight recording, but learned practically nothing about abdominal palpation and potential problem identification. These students, in fact, could not absorb any more, since they were not mature enough to understand the physiology of pregnancy, still ignorant about the basic physiology of the body.

Their presence was highly disapproved of both by Dr. Nasah, the Chief of Obstetrics and Gynecology Department, and Dr. Drouin, CUSS/Harvard Project's attached Gynecologist. Their several years of experience in University Teaching has not been consulted and as Dr. Drouin puts it in his report: "On the maternal grounds, we were always put in front of the fact." However, the following year there was some improvement—only 3rd year Medical School students participated in the antenatal clinics. But there again the decision had been taken by pediatricians and not by obstetricians. Dr. Drouin will be pleased to learn that, with the formation of the section on Maternal and Child Health at CUSS, their request to have only 4th year students at these clinics was accepted by the whole Committee. The students' experience now covers the whole routine of the clinic from: taking the medical, surgical and obstetrical history, recording blood pressures, heights and weights, analysing the urines, vaccinating against Tetanus, giving conferences to the patients on different subjects such as:

- Menstrual Cycle - Ovulation - Fertilization
- Pregnancy and its development
- Minor disorders of pregnancy and their remedies
- Hygiene during pregnancy
- Nutrition during pregnancy
- Breast feeding
- Child Spacing;

...to examine the patients, recording measurements, presentation, position, foetal heart beat, presence of edema, or any complaints of the patient. The human approach to the patient is something new which all of them have to learn and practice during their 7-week clinical experience.
The laboratory attached to the Clinic allows us to obtain a quick hemocrit on each patient, but electrophoreses, Rh, Blood Grouping and stool examinations are performed at the Main Hospital Laboratory. All abnormal vaginal discharges are examined immediately and treated accordingly.

The students learn that all the patients receive prescriptions for Iron, Folic Acid and Chloroquine during their pregnancy. Any other treatment rests on the authority of the consulting doctor. In fact, students are not allowed to give any prescriptions. Patients with special problems are asked to wait for the consultant who discusses the situation with the students and decides on the way to deal with it.

The average of patients per clinic is about 40. Their ages vary from 17 years of age to 42 years; their gestations from 0 to 13 plus.

These patients are in fairly good health, showing very few cases of anemia and deliver normally, babies of about 3 kilos. The babies of these patients were followed by the CUSS students at the Well Baby Clinic, until they reached one year of age.

At the origin of the Clinic, patients were referred to us by the MCH centers. However, after a while, the centers failed to send us patients, and soon, patients were referred by the CUSS staff or students, the Hospital's staff members, or the patients themselves, who were pleased to bring their relatives or neighbors. What started by being a clinic for less fortunate patients has become a clinic for the elite, although we fought against this. This is the reason why, I have always been against a CUSS/Harvard Antenatal Clinic of Normal Pregnancies. I would have preferred to participate in an already existing clinic of the kind.

My Monday morning participation in the Medical Students' training at the Antenatal Clinic of the Private Presbyterian Mission of Djongolo was a happier initiative from my point of view, for the simple reason that my responsibility was not divided between teaching and assuring the good functioning of the whole clinic.

CHILD SPACING

The second clinic we inaugurated as a public health service was the "Child Spacing." It started humbly on the 17th of January 1975 with five patients. It is in full progress with a volume of more than 1000 patients at the end of September 1976.

The patients have an average age of thirty-one years.

71% are married
16.9% are single
4.1% are widows
2.8% are divorced
4.6% are of an unspecified marital status
All the classes of society are well represented with a much higher incidence for the middle and lower classes.

unknown 11.7%
high class 16.7%
middle 36%
lower class 35.5%

Although the Government's policy is pro-natalist, the strong orientation toward Maternal and Child Health calls for the existence of a Child Spacing Clinic, which now receives a warm and understanding acceptance from our Ministry of Health. The patients themselves show the most grateful feelings towards our Clinic.

They are referred to us by doctors, midwives, staff members of the Hospital, relatives or friends already registered with us.

Participating in this clinic are the students of the 5th and 6th year of medical school. Prudence has made us very careful about incorporating the 4th year students; their zeal to practice in the "compound" what they learn at the hospital could bring dreadful discredit to the clinic and to our long sustained efforts because of their lack of consciousness towards asepsis.

The exchange with patients at this particular clinic is most rewarding. It is wonderfully nice to see their interest grow into an active participation. They have everything to learn about sexual behavior, about feminine physiology and anatomy, about the danger of promiscuity and the consequences of pelvic infections.

I insist that they should look in the microscope to watch trichomonas dancing or to see the appearance of the yeast that gives them discomfort.

Should one of the patients present a non-gynecological anomaly, she is referred with a letter of introduction to the clinic that can take care of her. The same principle of total patient care is observed at the Antenatal Clinic. Child Spacing Clinic is a real family meeting of all these women whose confidence has grown and whose influence is most important in the different "compounds" of the city.

By far the most used method that has given the most protection has been the I U D (I IPPES loop), 54.1%.

I am proud to say that the Clinic has gained much success; but it has been at the price of sustained vigilance and scrupulous respect for the sterile technique of insertion. The "Non Touch" technique is the only one used and taught to the students. The insertion is proceeded by a total physical examination and by a thorough gynecological review to exclude any abnormality or pregnancy. The vaginal discharge, normal or abnormal, is examined under the microscope to eliminate any possibility of existing infection. The insertion itself is always done under supervision when performed by students. The complications encountered so far according to the statistics of January 1976 were:

unknown cases 13.9% irregular bleeding 3.5% delayed infection 4.3%
none 61% abdominal pain 3% amenorrhea 0.4%
menorrhagia 3.9% expulsion 4.3% loss of strings 1.7%
dispareunia 1.7% vaginal discharge 1.7%
The "unknown cases" are the ones who live around but are free of problems. They are also the ones who have left the city for their village and are being followed by a local dispensary. Usually these patients delay their appointment, but when they have an opportunity to come back to Yaounde they pay a visit to the Clinic.

The expulsion cases are, as a rule, identified by the patients themselves who routinely perform a control while attending to their private-toilet. For the same reason the worry of not feeling the strings is not one on which the patients brood for long. They immediately come to the Clinic.

The finding of amenorrhea is a completely new experience to me; I never met this physiological reaction during my three years of intensive family planning practice in New York. Two of our patients behaved this way. One, a midwife, although encouraged to persevere, refused to endure this mental tension and asked for the removal. She is now on the pill. The nurse, on the contrary, kept her device and saw her menses return after a few months—to stop again later.

As for delayed infections, we can consider ourselves very lucky to have kept them at such a low incidence. Promiscuity is the source of most of these infections. Only recently have I decided to make a gram coloration on all purulent discharges or on low abdominal pains, helped in this surplus of work by the 6th year student, Enoh.

The number of gonorrhea cases met is astonishing: I always insist that the students start the vulvar examination by "milking" the urethra. Many a clean vagina has been a silent accomplice of a hidden gonorrhea found in the urethra and this because practically all patients give themselves a vaginal toilet before coming to the Clinic; a performance which can deviate or distract the vigilance of the examiner.

There were 16 removals of IUD for the following reasons:

<table>
<thead>
<tr>
<th>Reason</th>
<th>Number</th>
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<tbody>
<tr>
<td>desire of pregnancy</td>
<td>3</td>
</tr>
<tr>
<td>abdominal pain</td>
<td>3</td>
</tr>
<tr>
<td>delayed infection</td>
<td>7</td>
</tr>
<tr>
<td>persistant breakthrough bleeding</td>
<td>1</td>
</tr>
<tr>
<td>amenorrhea not due to pregnancy</td>
<td>1</td>
</tr>
<tr>
<td>change to the pill</td>
<td>1</td>
</tr>
</tbody>
</table>

The next most used method at our Clinic is the pill. We do not encourage it zealously for the simple reason that we have more failures with them. Patients forget their pill too easily; we had 7.8% pregnancies with the pill while we had none with the device.

Otherwise we met very few minor problems with their use, such as:

<table>
<thead>
<tr>
<th>Problem</th>
<th>Percentage</th>
</tr>
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<tbody>
<tr>
<td>unknown</td>
<td>17.6%</td>
</tr>
<tr>
<td>none</td>
<td>51%</td>
</tr>
<tr>
<td>weight gain</td>
<td>3.9%</td>
</tr>
<tr>
<td>amenorrhea</td>
<td>2%</td>
</tr>
<tr>
<td>irregular bleeding</td>
<td>2%</td>
</tr>
<tr>
<td>pregnancy</td>
<td>7.8%</td>
</tr>
<tr>
<td>other</td>
<td>13.7%</td>
</tr>
</tbody>
</table>

No thrombo-embolic complications were encountered. This complication accounted for 2.5% maternal deaths in the Obstetric and Gynecologic Unit.
Only very few diaphragms have been measured. The patient has to import her own diaphragm from England or from the United States. The Clinic, however, can supply the patient with spermicidal foam if she cannot find cream or jelly at the pharmacy.

The Emko foam is the last resort when a patient, for some reason or other cannot use the other methods. It can be a temporary protection whose value, although precarious if used without condom, is still better than nothing at all.

At last, I will mention the introduction at the Clinic for Menstrual Regulation, this inoffensive operation that does induce amenorrhea up to 10 days late menses. Following this procedure, a device is inserted, or the patient is started on the pill according to her wish or possibilities. This procedure, as well as the insertion, is taught to the 6th year medical students only. I see this procedure as an early and positive help given to the patient who might resort otherwise to criminal abortion.

A thesis has been written on illegal abortion by Doctor Abbessolo. The study of 99 cases was carried out from April 1974 to December 1975 at the Maternité Principale of Yaounde. It shows that:

93 of the cases lived in urban areas 51 were nulliparous
53 of them were students 25 were primiparous
59 were single 49 were between 15-19 years old
36 from 20-24 years old; six of them died and all 6 were less than 25 years old.

This is to prove that the population, and especially the school population, greatly need sexual education and protection; that contraception and child spacing should be known and made available to the ones who feel themselves to be in danger.

The Child Spacing Clinic, although preoccupied by the sterility cases, does not take care of these patients directly. Dr. Nasah and Dr. Drouin hold a clinic apart for these people who suffer either of the primary type (30%) or of the secondary type (70%). A vast population is affected by this problem, which Dr. Nasah compares to cancer for the Europeans and the Americans.

To complete the percentage of Child Spacing patients, I must add a word on the permanent sterilization cases: 89 patients, whose average number of living children was 8.8.

Social and economic constraint is the most important reason given for it. They were performed by Dr. Nasah and Dr. Drouin as follows:

<table>
<thead>
<tr>
<th>Unsatisfied</th>
<th>Local</th>
<th>Ces/Sect.</th>
<th>Gen. Anesthesia</th>
<th>Vaginal Route</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>post-partum</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8 cases</td>
<td>35 cases</td>
<td>21 cases</td>
<td>15 cases</td>
<td>10 cases</td>
</tr>
</tbody>
</table>

Therapeutic abortions were requested by 12 patients whose social classifications are as follows:

- unknown: 2
- primary school education: 1
- secondary school education: 3
- university education: 5
- illiterate: 1
Under the most experienced and creative perspicacity of both Dr. Nasah and Dr. Drouin, a high risk pregnancy clinic was started in January 1975.

The patients of the normal pregnancy clinic who presented signs of abnormalities were referred to this new clinic, never held before in this country, as an entity. Very soon patients were referred to us by the surrounding MCH centers.

This group of "High Risks" representing 15-20% of the obstetrical population, is responsible for 80% of maternal mortality and perinatal morbidity. Both Dr. Nasah and Dr. Drouin concentrated their efforts towards the formation of this clinic which has also been used for a research study on anemia of pregnancy (Martha Eyong 1975).

The study refuted the alleged theory which too easily claimed that anemia of pregnancy in Cameroon was due to malnutrition.

In no time this clinic has become as heavy as the normal pregnancy one with its 30 plus patients. The cases most frequently met are:

- Ex-Caesarian Sections
- Repeated abortions
- Twin pregnancies
- Essential hypertension
- Rh negative
- Hydramnios
- Nephrotic syndromes
- Ante and post-partum hemorrhages
- Cervix incompetencies
- Pre-eclampsia
- Teenagers
- Sickle cell anemias
- Cardiopathies
- Post maturity

Participating in this weekly clinic are:

Drs. Nasah, Drouin, Tataw as consultants, and Dr. Sende for screening of the new cases.

Students from the 5th and 6th year Medical School are taught alternately.

So far, the infants of the High Risk patients were not admitted to our Pediatric Clinic, because the Clinic was already overcrowded. However, for the future teaching of students, only babies of High Risk mothers and babies kept in the Nursery for prematurity or difficult birth will be registered in the Infant Clinic. This continuity of services will be an answer to our two years long wish to concentrate on the high percentage of those whose life is at practically 100% risk. The patients of this clinic are most assiduous in keeping their appointments and it is not rare to see the same patient 10 to 13 times during the same pregnancy. This explains the heaviness of this clinic during which the students must be supervised and the consultants judiciously called for assistance and directions.

REALIZATIONS

In an article on "Evaluation of Continuous Fetal Heart Monitoring in High Risk Pregnancy," it said: "In recent years there has been a decrease in perinatal mortality rate in the United States and world wide. The reasons for this improved perinatal outcome are unclear. Possible contributing factors are a
lower maternal age and parity, improved nutrition, availability of effective contraceptives, liberalization of abortion and sterilization laws, improved neonatal care, increased knowledge of perinatal physiology and pathology, development of regional centers, and in utero fetal surveillance, including intrapartum electronic monitoring."

These "possible contributing factors" mentioned are obviously the ones met in developed countries. Here, we are very far from some of them. However, what we have started at the Maternity of "L'Hopital Central de Yaounde," in the past two years, should contribute to help the situation.

The introduction in the Delivery Room of the partogramme by Dr. Drouin together with the establishment of the High Risk Pregnancy Clinic has already reduced the perinatal mortality rate in 1975 from 43.3/1000 (73-74) to 31.2/1000.

The major factors of these mortalities being: age: less than 16 more than 30.

parity: teenage primipara other primipara grand multipara (reached at 26.6 years old).

status: single (without male support).

The creation of a Child Spacing Clinic with "its availability of effective contraceptives" should help in reducing still more this rate to the one wished by WHO: 21/1000 births.

Intrapartum electronic monitoring is ideal for the developed countries, but it is nothing to dream of here. Instead, to answer the urgent local need, I dare formulate the following suggestions:

1st The improvement of conditions in the Delivery Room.

2nd The creation of a labour ward.

3rd The enforcement of discipline among the personnel by a local authority in the interest of better patient care.

4th The consecration of an afternoon a month to refresher lectures for the midwives who actually do not show much knowledge and less application still.

The professional conscience has to be wakened up badly, but it also needs to be raised up from the deep depression where it is kept, smothered by the politically oriented system which is, in fact, responsible for this heartless situation.

As a last addition to the realizations already brought to life, I shall mention the replacement of the Antenatal Clinic of Normal Pregnancies by the Post Partum Clinic during which our high risks patients will be examined, advised on vital subjects such as: breast-feeding, nutrition, vaccination.

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rest and exercises, hygiene, etc. and oriented towards a planification of their reproductive life in such a way as to bring a maximum chance of health and happiness to themselves, to their baby and to their family. The babies of these patients will also be examined, vaccinated and taken care of, at the same time, by the pediatric personnel of our team.

PLANS

In April 1976, I was, with Dr. Nasah and Dr. Drouin, invited to the annual "Session des Formation Médicales Priveées": three days of conference with many refreshing lectures on subjects of current interest covering: public health 1st day, maternity 2nd day and pediatrics 3rd day.

The subjects covered by Prof. Nasah and Dr. Drouin were:

- High Risks Pregnancies - Dr. Nasah
- Intra Partum Care and Hemorrhages - Dr. Drouin
- Maternal Mortality at Delivery - Dr. Nasah
- Anemia of Pregnancy - Dr. Drouin
- Problem of Sterility - Dr. Nasah
- Child Spacing and Statistics - Dr. Drouin

As for myself:

Child Spacing: My Experience as a Midwife in the Running of the Clinic.

I just stated the conditions for a good and effective running of such a clinic. Child Spacing goes back to ancient times; the new techniques are what we have imported. What differentiates the new techniques from the old ones is their scientific inspiration and their basic respect for hygiene and asepsis. If we do not take these into consideration we cause more damage than good in both minds and bodies.

Therefore, the following are indispensable for the success of a clinic:

- The Non-Touch Technique
- A well-trained conscientious personnel
- An effective method of sterilization
- A well-organized and well-kept filing system.

After my talk, I was approached by doctors and midwives from different parts of the country who begged me to pay them a visit to help them with the reorganization of their not altogether successful Child Spacing Clinic.

I could not promise anybody a visit since I now work for the CUSS/Harvard Project, but I sincerely hope that before leaving this country I will be encouraged and helped in my wish to complete my work as trainer in Child Spacing, outside the nucleus of Yaounde.
CONCLUSIONS AND ACKNOWLEDGEMENTS

MCH clinics in developing countries are run by paramedical staff. Our Child Spacing and High Risks Clinics are no exception—they depend on a responsible midwife.

The two clinics: Child Spacing and High Risks Pregnancies, which never existed before, but whose urgent necessity was detected by the professional keenness of Dr. Nasah and Dr. Drouin, owe their good running to their continuously available and competent direction. They both planned these clinics. They both conceived them with wisdom and clear-sightedness. They brought them to life with the entire approbation of the Ministry of Health. From then on, however, I breast-fed these two humble and fragile creatures, day after day. I put my whole heart in it, encouraged and helped by the priceless and faithful assistance of Dr. Suzan Tataw.

This is why, I now feel so proud to be with Dr. Nasah, Dr. Drouin and Dr. Tataw, to present to the CUSS of Cameroon and to Harvard of the United States the only two offspring brought to full life by the CUSS/Harvard Project and adopted by the CUSS Committee, "Mother and Child," as the two principal clinics of choice for the future training of the CUSS students in Maternal and Child Health.
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<thead>
<tr>
<th>YEARS</th>
<th>ACTIVITIES</th>
<th>LOCALE</th>
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<tr>
<td>1974 - 1975</td>
<td>DELIVERY ROOM</td>
<td>MATERNITÉ</td>
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<td>ANTENATAL CLINIC</td>
<td>CUSP PAVILLION HÔPITAL CENTRAL</td>
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<tr>
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<td>NORMAL PREGNANCIES</td>
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<td>1975 - 1976</td>
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<td>NORMAL PREGNANCIES</td>
<td>DJONGOLO MISSION</td>
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<td></td>
<td>CHILD SPACING</td>
<td>DOCTOR DROUIN'S OFFICE</td>
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<td>HIGH RISKS PREGNANCIES</td>
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<td>1976 - 1977</td>
<td>CHILD SPACING</td>
<td>MATERNITÉ PRINCIPALE</td>
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<td>HIGH RISKS PREGNANCIES</td>
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<td>POST-PARTUM CLINIC AND INFANT CARE</td>
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**STUDENTS CONCERNED**

- DELIVERY ROOM: 4th YEAR MEDICAL STUDENTS, 5th YEAR MEDICAL STUDENTS, 6th YEAR MEDICAL STUDENTS, *ENISPAY STUDENTS
- ANTENATAL CLINIC HIGH RISKS PREGNANCIES: 4th YEAR STUDENTS, 5th YEAR STUDENTS, 6th YEAR STUDENTS
- CHILD SPACING: 5th YEAR STUDENTS, 6th YEAR STUDENTS

*ECOLE NATIONALE POUR INFIRMIÈRES-SAGES FEMMES, ACCOUCHEURS YAOUNDE.*
(SCHOOL FOR NURSES AND MIDWIVES)
PHASE II
1976 - 1978

During this period, following the departure of Dr. Guillozet, direction of the program in Yaounde was by two men, whose terms of service could only be one year. First, Dr. Rainer Arnhold from the clinical faculty of the University of California Medical School at San Francisco, with considerable previous experience with the Third World, maintained high standards of clinical care and, by his wisdom and maturity, achieved excellent relations between our technical assistance group and the faculty of CUSS. During the following year, he was replaced by Dr. Robert Chamberlin, from the Department of Pediatrics at the University of Rochester School of Medicine where ambulatory and community medicine had been highly developed. He led the team effectively and posed important questions about the future directions of the project, which needed to be raised in view of the imminence of the opening of the completed community teaching hospital.

In June of 1976, three of the team members departed, leaving Lise Cousineau. She was joined by Dr. Arnhold, the new pediatrician and team leader, and Susan Colgate, a nurse-midwife. An obstetrician could not be found to replace Dr. Drouin until later.

During the academic year 1976-77, this group continued the activities already started. It was hoped that these programs could be expanded and moved over to the new maternal-child health ambulatory section of the Community Hospital but because of jurisdictional and financial problems this facility remained closed the entire academic year. The failure of this facility to open led to a loss of momentum and curtailment of the previously established programs. (Increased use of the CUSS Pavilion by internists and other specialists resulted in the discontinuance of the daily pediatric clinic and nutrition programs.)

In July 1977, Dr. Arnhold was replaced by another pediatrician, Dr. Chamberlin. Dr. Naponick, an obstetrician, joined the team, and Susan Colgate and Lise Cousineau remained. Again it was hoped to be able to move and expand the present maternal-child health activities to the new ambulatory setting, but again failure to resolve jurisdictional disputes over who will control what have prevented the facility from opening for another year. This has led to further loss of momentum in the maternal-child health program. Efforts to form a committee to plan a full primary and secondary care program for the new facility when it does open were met with little enthusiasm from members of the obstetrical and pediatric departments; most expressed doubt that the new facility would ever open.

However, in February 1978, after considerable negotiations, it was possible to move the child spacing clinic to the new opd section where it meets twice a week and an immunization clinic which meets once a month. These were allowed to operate because they are self-sufficient and do not require any supporting staff and it was hoped that their presence would prevent further deterioration of the building from disuse—the building is still officially closed, however.

A tentative plan outlining program content and staffing has been completed for the new ambulatory section though with essentially no input from pediatrics and obstetrics.
In spite of these setbacks, progress in other areas has been made. The family planning clinic has been taken over completely by Camerounian midwives and is running well on its own. Ms. Cousineau is also writing a family planning manual for use in clinics such as these.

Plans have also been formulated to write a bilingual textbook in public health nursing and this is well under way. This activity is being carried out by Jeanne Carrière who joined the project in October 1977 and Susan Colgate. Jeanne Carrière has worked in Cameroon for five years on rural health projects connected with CUSS sponsored by the Canadian government. She and Susan Colgate are collaborating with Mme. Jato and Mme. Mounlom, who are Cameroonian nurses on the CUSS faculty.

Drs. Chamberlin and Naponick will leave the project at the end of the current academic year and Ms. Colgate and Ms. Carrière will stay on to finish the textbook by May 1979* at which time the project will end.

ACADEMIC YEAR 1977-78

This is the fourth year of the project and the last year of the full four person team.

For this year, a set of objectives was prepared in October of 1977. The major objective was to move the main focus of activities of the maternal child health program to the new outpatient facility at CUSS hospital and coordinate them with rural primary care projects in Mvolye and the Mefou district. This facility was completed in April of 1976 and after repeated delays was scheduled to open in the Fall of 1977. Although two clinics (family planning and an OCEAC immunization clinic) are now operating in this facility the building is still officially closed while jurisdictional disputes continue between the Ministries of Health and Education. The failure of this ambulatory section to open and the resulting restrictions on the maternal and child health program in the CUSS Pavilion because of lack of space and support of the director of that facility, have led to a loss of momentum in the program as a whole and a deterioration in faculty morale. Efforts to formulate a specific plan for program content and staffing for the maternal-child health program in the new facility were met with indifference and at times outright hostility, with the general feeling being that the hospital would remain closed for an indefinite period.

Objective 1: Assist in planning a mere-enfant ambulatory program for the new community hospital.

This was seen as the most important objective of the year by myself and provided a year of continued frustration as my attempts to move this along were met with either indifference or at times outright hostility. The reasons for this are not at all clear to me so I will outline briefly what was attempted and what were the results.

The two main issues as I saw them were (1) what kind of primary care program would be involved and (2) who would staff it. Would there be merely a walk-in section open to the community at large or would an attempt be made to run a comprehensive care program to a defined section of the community. Would the

*Later revised to December 31, 1979.
program be specialty oriented with women being seen only by midwives and obstetricians and children by pediatricians or would it be generalist oriented with generalist nurses and physicians seeing both mothers and children and using the specialists only as consultants.

The initial approach adopted was to raise these issues of program content and staffing with various people and try to explore the implications of alternative solutions. To this end a paper outlining these was distributed to the chiefs of obstetrics and pediatrics in late October. A general mère-enfant committee meeting was called in November and these issues were presented to the group as a whole. It was hoped that this would lead to the formation of a small working committee to prepare a series of recommendations that could then be presented to the larger mère-enfant committee for discussion at a later date. The reactions, however, were almost entirely negative with essentially no interest shown in forming a working subcommittee. In talking to people about it later three reasons were given for the general lack of interest in planning: These were:

1. There is no use making plans because the major decisions are made by someone else (The Director).

2. The hospital probably won't open, so it's a waste of time.

3. Plans were already drawn up in May 1975 and these are sufficient, (this latter document sets up the overall outlines for the mère-enfant program but does not contain the specifics that are necessary to actually operationalize the program in the clinic).

I found this meeting very discouraging, but after a month of inactivity, decided I would write up my own plan. It was my hope that this would stimulate some thinking about the program even if only to refute my suggestions which I know would need to be revised to meet the local conditions of which I am only partially aware. A rough draft of this was completed and discussed with Dr. N'Chinda and Gladys Martin of community health and Susan Colgate. They made many helpful suggestions. The plan was revised according to these and sent in early March to the Chiefs of Pediatrics, Obstetrics, and Director Monekosso. In an accompanying letter, I asked for their comments about the plan but received no responses. After waiting a month, I made an appointment to talk about it with Dr. Monekosso. When I asked him for his comments, he said he sent the plan on to the Minister of Education because it was no longer his concern. When I pressed him about who would make the decision about whether or not there would be a primary care component to the program (a key element in my opinion), he became angry and told me the mère-enfant program had nothing to do with primary care. Then without ever explaining this or responding to the plan, he began to verbally attack me as a person telling me in an insulting tone that I was opinionated, didn't know anything about Africa, hadn't learned anything, and that nothing that went on in the United States had any applicability here. When I asked him to explain this, he said he didn't have time. By this time, I was quite angry myself and told him I felt I had not received any help from him or the chiefs of obstetrics and pediatrics in trying to plan a program. I then walked out before I responded with more forceful language.

This whole situation has been particularly frustrating because I think CUSS has the facilities and staff to put together a top notch ambulatory program. However, unless some active steps are taken now, I think the mère-enfant program will lose any of its remaining integrated characteristics and end up with two isolated specialties practicing side by side with little interaction.
In my opinion, this would be a tragic loss in terms of the objectives of CUSS.

**Objective 2:** Assist in getting some clinical activities going in the mère-enfant section of the new hospital

Early in the fall, the team had dinner with Dr. and Mrs. Monekosso and explored ways in which we might be of assistance in getting the new hospital outpatient complex open. Dr. Monekosso suggested we try and start several clinics running in the mère-enfant section. The feeling here was that getting programs started would point out the equipment and maintenance needs and prevent deterioration of facilities from disuse.

Apparently, this was a complicated procedure involving getting the Chancellor's permission and avoiding getting tangled up in the jurisdictional dispute between the Ministers of Health and Education.

We thought the monthly immunization clinic being held at Pavillion CUSS would be a good bet since its popularity was creating problems for the limited space there and it would provide a useful public service compatible with the overall objectives of the mère-enfant program. We initiated the procedure in early November by requesting use of the new facilities in writing from Dr. Monekosso and, after a series of these letters, the project was approved near the end of January.

A small trial clinic was held for student families on January 31st and a large general clinic was held four days later on February 4th. The project also paid several thousand dollars to purchase some benches and other basic equipment to make the clinic operational. This clinic has been a big success and is continuing to be held once a month with 300 to 400 infants being immunized at each sitting.

The family planning clinic moved over soon after and meets twice a week so the clinic is at last being used. Both of these clinics are self-sufficient in terms of personnel and relatively independent of inpatient activities. The high risk pregnancy clinic and postpartum clinics require more supporting staff and need to maintain physical proximity to the maternity service, and no plans are being made to move these or other clinics until the inpatient part of the hospital is functioning.

In January, the jurisdictional battle over who would oversee the operations of the new hospital outpatient complex was solved by creating an independent board of governors composed of personnel from both agencies and a separate budget.

It was hoped that this would allow the mère-enfant section to open officially and planning could then be completed for the program there. Unfortunately, no sooner was this dispute resolved when another emerged over who was to be the hospital director. Currently, the whole complex remains officially closed and it looks as though no further planning will take place until all the issues of who is going to control what are solved.

In spite of this setback, the project was able to accomplish several objectives which have the potential for making a lasting contribution to the program. The family planning clinic is now being competently run by two Cameroonian midwives allowing Lise Cousineau to focus her energies elsewhere (see the 1977 report of Ms. Cousineau for details). Ms. Cousineau is also working on a family planning manual for use in clinics such as this.
The project to write a bilingual textbook for public health nursing being carried out by Jeanne Carrière, Susan Colgate and Mme. Jato and Mme. Mounlon is progressing on schedule with several chapters already written. I think this will be an excellent long-lasting contribution.

In addition to these successes and failures, the team continued its role in teaching, research, and service activities as before. Teaching activities were carried out at the Central Hospital, Mvolye, and Bamenda. Research activities were largely confined to helping 6th year students with their thesis which included studies of infertility, gonorrhea, ophthalmia neonatorum and penicillin-resistant gonorrhea, maternal mortality, gynecologic infections in pregnant women and problems with ascetic techniques in health clinics and P.M.I.s.

In addition, Susan Colgate did an investigation of baby powder toxicity in a sample of newborns. The data collection is complete and is in the process of writing this up.

Summary

In summary, some progress has been made in attaining project objectives, but the mère-enfant program is not yet off the ground in the new hospital. Whether or not it will become better integrated at the primary care level or remain, as it is now, mainly a specialty oriented program with little actual cooperation between pediatrics and obstetrics, remains to be seen.

Recommendations About Continuation of the Program

As this project ends, I think it would be valuable to continue a relationship between Harvard and CUSS. This could be done in terms of faculty exchanges for teaching and research. There are many fascinating researchable problems here such as why there is so little leukemia and appendicitis as well as a host of others concerning growth and development of Camerounian children, infectious disease, and the like. Dr. N’Koulou is planning a trip to Boston to explore possibilities for future collaboration with Dr. Janeway and Dr. Avery, Chief of Pediatrics of Children’s Hospital.

Acknowledgement

I would especially like to thank the other team members, Susan Colgate, John Naponick, Lise Cousineau and Jeanne Carrière for their excellent work and support throughout the year. Working with them was a delight that I will never forget. Susan was of particular help to me at the beginning of my stay when my lack of experience in Africa and nonfluency in French were major handicaps.

Al Hen and Doug Palmer were also of much help to me in problem solving and operation of the program as were other AID and Embassy personnel. I am in much appreciation of Ambassador Smyth who went out of her way to make us feel part of the American community.

On the CUSS faculty, Dr. Gladys Martin and Dr. Thomas N’Chinda were especially helpful to me throughout the year. Dr. Bifidi eased my way considerably in working on the wards with the 3rd year students and Veronique Ada was of great help to me in seeing patients in the clinic.
Specific Recommendations for Future Projects

Several things come to mind that would have facilitated the operation of this project. These are as follows:

(1) Better control of Inventory: Many shipments of equipment come through and these are very difficult to keep track of without some kind of central inventory control. I would think it helpful if one regular AID employee was assigned the job of examining all incoming project equipment, labeling it, and recording where it can be found, with a periodic check on its whereabouts.

(2) Use of American Vehicles: In my opinion this policy should be discontinued. Adequate parts are not available and take several months to be sent from the U.S. Mechanics familiar with American cars don't exist. Every minor problem becomes a crisis. Trying to keep the cars running was a constant headache that seems unnecessary. If Congress insists on a buy American policy for vehicles they should supply mechanics from the States and a complete stock of parts as well.

(3) Telephone Facilities: Another constant problem was trying to make long distance calls. Usually it took several hours of waiting and when the call was finally completed, you have to talk on the phone at the reception desk with lack of privacy and much noise. Calling from individual houses seems unfair to those living in them because it is difficult to keep track of calls and costs, besides the inconvenience of having someone sitting in your house for several hours while they are waiting. I would suggest a small telephone room near the switchboard in the AID building where persons could wait for calls and talk in privacy in a quiet atmosphere.

(4) Participant Training: In view of the difficulty we have had finding jobs for some of the people we trained, I would recommend that before sending someone off to an out of country training program they have a written commitment from CUS from outlining what type of work they will be doing when they return, who they will work for, and at what salary level.

Addendum

One other interesting observation is the general feeling by AID health personnel that malnutrition is not a problem in this part of Cameroun. Since my perception is different, I have been asked to try and document this which is as follows:

As part of my teaching activities, I make hospital rounds once a week to identify interesting patients for the students. At any one day, I would say that at least 1/4 to 1/3 of the patients in the hospital had overt evidence of Kwashiorkor or Marasmus. Also, in my Tuesday afternoon consultation clinic, it would be a rare day that I didn't see one or two children referred with obvious malnutrition. Finally, at Nkoyo, which deals with a much less selected population, there are always half a dozen children every pediatric clinic day with signs of malnutrition. In short, there seems ample evidence that there is considerable malnutrition in the Yaounde area.

Robert Chamberlin, M.D., Director
PHASE III

Preparations for Withdrawal and Assurance of Continuity and Availability of Teaching Aids in Maternal and Child Health (1978-1980)

In order to assure permanence of genuine improvements in Maternal and Child Health teaching at CUSS, two things were necessary—the training and establishment of well-trained homologues and the completion of teaching aids (books and reprints) designed for the African scene. Neither of these are complete, but partial completion has been achieved and should continue during the next year or two.
INTRODUCTION

In July 1977, Professor Charles Janeway, M.D., coordinator of the Harvard-CUSS Project, acting through Dr. A. Henn, obtained permission from CUSS Director G. L. Monékosso for a nursing textbook. Ms. Jeannie F. Carrière and Ms. Susan Colgate were anxious to prepare a community nursing textbook to be published in both French and English. They planned to collaborate with Ms. Miriam Jato, instructor at CUSS and Ms. Damaris Mounlom, Director ENIAATGS (National Nursing and Midwifery School, Yaoundé)

The objectives of this final phase of the Harvard-CUSS Project were to contribute to operational research, to provide faculty support, and to develop curriculum for students at CUSS and other para-medical training centers. The objectives were to be met by developing a learning tool specifically adapted to the teaching of community health in Africa.

This report will focus on the implementation of the objectives and will also describe the educational, research, and administrative activities of Ms. Carrière and Ms. Colgate between October 1, 1977 and December 31, 1979. In addition, it will indicate the major strengths of this phase of the project and obstacles encountered. Finally, some suggestions will be offered that may prove useful in planning projects with similar goals.

BACKGROUND

Applied research has been one of the goals of the Harvard-CUSS team since its inception. During the 1976-77 academic year, Ms. S. Colgate in conjunction with Ms. Jato and Ms. Carrière of CUSS and Ms. Mounlom from ENIAATGS, designed a survey to assess "the lack of nursing textbooks that meet the needs of African students." They focused on two questions: Is there a real necessity for new textbooks adapted to the needs of African students? If so, what subject areas are of highest priority? The investigators sent out 160 questionnaires to instructors in Cameroon nursing schools and to the Yaoundé and Dakar CESSI (Post-Basic Nursing Training Schools) instructors, second year students and graduates. The sample represented nursing leaders and educators from many African countries.

Fifty questionnaires were completed and returned. The respondents included thirty CESSI students from Yaoundé and Dakar, seventeen nursing instructors, and one nurse laboratory worker. Two respondents did not indicate their present positions.

Analysis of data revealed: 1) a lack of nursing texts adapted to African needs in the areas of basic nursing care, community health, and maternal-child health, and, 2) highest priority expressed for community health materials.

In June 1977, Professor Janeway, after studying the survey results, agreed to support the writing and publication of a community health nursing textbook in French and English. After obtaining approval from Prof. Monékosso, CUSS Director, Professor Janeway designated Ms. Carrière
Because their survey had identified a lack of community health textbooks adapted to the needs of African students, the authors wished to reach the widest possible audience. They decided to direct their work toward nursing students at both the RN (diplôme d'état) and post-basic (CESSI) levels. In addition, they hoped their text could serve as a reference in rural health centers.

**WORK SCHEDULE**

Having defined their objective, the authors adopted the following time table:

- **October 1977 - October 1978:**
  - writing first draft of all eleven chapters,
  - testing of complete draft with students at ENIAATGS Dakar and Yaoundé CESSI programs.

- **October 1978 - October 1979:**
  - rewriting and editing manuscript on the basis of student reactions,
  - translation of French text into English,
  - production of illustrations and photographs,
  - negotiation with printers and publishers,
  - printing and publication of the two editions.

**WORK METHOD**

The authors decided to write each chapter of the first draft working in pairs consisting of one Cameroonian and one Harvard team member. This method permitted a division of labor and assured that contents of each chapter be adapted to the needs of the African student. When two authors had completed a section, they would give copies of it to the other two for critical reading. The following week all four would meet to discuss, criticize and improve the draft. These group discussions led to second, third and sometimes fourth drafts, until all authors were satisfied with the text. Generally the group met every two weeks.

**CONTENTS OF THE BOOK**

The four authors agreed from the start that their book should present the special role nurses can play in promoting the health and development of African communities. They attempted to present the newest trends in community nursing in simple, straight forward language. Key concepts included: how to study families and communities from a health perspective, team work at the health center, liaison with other community development workers, primary health care, and integration of village health workers and traditional birth attendants into the health team.
The contents also covered certain relevant nursing fundamentals. These included maternal and child health nursing, community health planning and the nurses' role in running the health center's laboratory and pharmacy. The authors stressed the importance of health education in all aspects of health center and community nursing. They illustrated basic health teaching principles throughout the text with case studies and examples drawn from their varied experiences as practitioners and educators.

To test the validity of the proposed book's contents, the authors posed the following questions to CESSI and ENIAATGS students: "In your opinion what should be included in a community nursing textbook?" The students' opinions generally agreed with the authors', although they displayed ignorance of nursing's role in community development. In addition some students requested chapters on pathology and treatment of disease. The authors rejected this request as inappropriate for a community nursing text, and as unnecessary given the many adequate medical texts already available.

The authors are grateful for the sustained support of Professor E. Eben-Housssi while the book was being created. We would also like to thank Daniel Noni Lantum, Professor of Community Health and Deputy Director of CUSS, and, Dr. Simon Atangana, Director of Health, Cameroon Ministry of Health, for contributing their prefaces in French and English.

DESCRIPTION OF THE BOOK

The French text is 384 pages long. The English version contains 350 pages. Sixty-two photographs and four drawings illustrate the text. The Togolese artist, Abiassi Nyodo M'po created the drawings.

PRINTING

The team's philosophy of encouraging development of Cameroonian institutions dictated the choice of a local printer. In September 1973 the project coordinator visited the Imprimerie Adventiste, CEPMAE (CEPER) and Imprimerie Saint Paul, to discuss the feasibility of printing a 250 page volume with 60 black and white photos before the end of the Harvard-CUSS Project.

Of the three local printers only the Imprimerie Saint-Paul could assure the completion of the task by October 1979. They submitted a price estimate to the project. They required the final draft of the French manuscript by January 15, 1979, and the English manuscript one month later.

PUBLISHERS

The Harvard team members and their Cameroonian colleagues felt strongly that their work should not drift into obscurity when the Harvard-CUSS Project ended. They, therefore, insisted that their book have a publisher. With Dr. Janeway's support and USAID-Yaoundé's approval, the project engaged Editions CLE (Yaoundé) to distribute and promote the sale of the book, The Nurse and Community Health in Africa in both French and English versions. To obtain ISBN numbers for the books, CLE required the copyrights and a financial commitment from the Harvard-CUSS Project on October 4, 1979. The Yaoundé USAID director, Mr. James E. Williams, acted for the U.S. Government to cede the copyrights to Editions CLE, represented by Mr. J. Dihang, General Director.
BOOK PROMOTION AND DISTRIBUTION

The authors composed a promotional leaflet to publicize the book. Editions CLE printed it in French and English in August 1979 (see Appendix II).

The contract with Editions CLE included distribution of the book in Francophone and Anglophone African countries through their regular outlets. The four authors compiled a list of names and addresses of key African nursing clinicians and educators. Editions CLE then sent them promotional leaflets to encourage book sales to a range of health personnel.

DISCUSSION

French and English editions of the textbook The Nurse and Community Health in Africa are now on sale throughout English- and French-speaking Africa. It is appropriate now to ask candidly what this kind of development assistance project has to contribute. Time to examine the problems encountered and to offer suggestions that might prove useful to a similar project.

1. Advantages

The final phase of the Harvard-CUSS Project allowed two of the team members to work closely with a limited number of host country nationals.

In choosing to focus on the rather neglected area of nursing textbook publication, USAID and Harvard put into practice a new approach to development that host country nationals have begun to demand vociferously: today's African professionals insist that they work as equals with their foreign counterpart technicians. In our opinion, this can only work in a project with a fairly narrow scope and with technicians who have firm personal commitments to this approach to development. They must be willing to abandon old ideas of "providing technical assistance." Nonetheless, an egalitarian collegial approach will not bear fruit unless the technicians are capable of providing non-directive leadership and informal teaching to help their colleagues blend modern technology and know-how with their own culture and the realities of underdevelopment. This is obviously not an easy role to play.

Ms. Carrière and Ms. Colgate consciously chose to use this approach in the textbook project. They consistently attempted to keep themselves on an equal footing with their Cameroonian colleagues. They included Ms. Jato and Ms. Mounjom in every decision and helped them learn every detail of the process of conceiving, planning, financing, writing, testing, printing, publishing and promoting a textbook so that the Cameroonians will be able to repeat their experience if ever they see the need. Finally, and above all, the team members placed the highest value on the Cameroonian co-authors' contributions to all aspects of the book, urging them to take pride in their contribution to the professional literature, as nurses, as women, and as Africans.

These comments on our approach are offered constructively. We would like to share our philosophy with others because we feel that our experience has had far more beneficial results than negative aspects. We do not mean to cast aspersion on other more large-scale development assistance projects when they can better meet the populations' needs.
The textbook has permitted our Cameroonian colleagues to assert themselves both professionally and as African women. This comes at a time when nurses feel a need to define their profession and take their destiny into their own hands. Ms. Jato and Ms. Mounlon asserted repeatedly that their co-authorship helped raise the status of the professional women in African society. Needless to say, writing a book together permitted the Harvard team members to form close personal ties with their Cameroonian colleagues. All four authors enjoyed benefitting from their varied cultural backgrounds.

2. Problems

Despite the above-mentioned benefits there is no point in overlooking either the technical or administrative difficulties that occurred.

a. Technical problems. The team encountered great difficulty in finding reference materials pertinent to African needs locally. For this reason, some of the suggested reading lists in the textbook are shorter than ideal.

Meetings. Scheduling group meetings proved extremely difficult. Three of the authors had full-time teaching and/or administrative responsibilities at different institutions. Only the project coordinator was free to devote most of her time to the book. Since the authors agreed at the outset that all four would be present to participate in all discussions, scheduling conflicts arose. After six months of hampered progress because of the difficulty coordinating four schedules, the group decided to modify the principle and agreed to meet even if only three members were available.

Photography. The initial work plan proved fairly realistic except for the photography schedule. Originally three weeks were scheduled to complete the photographic work. Since the job entailed shooting in a variety of villages and neighborhoods, rural health centers, schools and homes it actually took Mr. S. Akamngwa, CUSX Photographer, and Mr. J. Harlan, Peace Corps Photographer at the Ministry of Health, four months to complete the task.

Translation. In accordance with Cameroon's official policy of bilingualism and since the authors were a bilingual group, they decided to publish the book in both French and English editions. Dr. Janeway and USAID/ Yaoundé agreed. Should the two English speaking authors prepare an English manuscript while the others prepared a French one? After much thought, the group decided to prepare one manuscript with each author writing in the language she preferred. Translation would follow.

Although there are many professional translators in Yaoundé, none proved familiar enough with technical nursing and community health terminology to produce more than a word-for-word translation. Disappointingly, the authors felt that their style and nursing philosophy disappeared in the translations. Therefore, Ms. Colgate was forced to rewrite the entire translation from French to English before giving it to the printers. Without her painstaking work the English text would have been inferior.

b. Administrative problems. Contract negotiations between the project coordinator and M. Dihang, General Director of Editions CLE, began in December 1978, but it wasn't until May 1979 that the first contract was signed.
by Editions CLE and Harvard, represented by the team leader with the backing of Dr. Janeway and USAID/Yaoundé. Why did this take so long? The questions of Harvard's financial commitment to CLE, the book's selling price, and the copyrights were extremely difficult to settle and kept delaying the signing of the contract. Because of the long negotiation period, Editions CLE did not help the authors edit the manuscript, prepare the layout or deal with the printers. All these tasks fell primarily to Ms. Colgate and Ms. Carrière. They were forced to turn for editing help to Sister Marie-Christine Lanart and Ms. Martha Kissick, since CLE provided no assistance.

Approximately one month after the contract was signed, USAID/Abidjan informed the team that it was not valid because it had not been signed by a Regional Development Officer from Abidjan. This news threw the two Harvard team members into a panic, and they turned for help to Mr. J. Williams, the Yaoundé/USAID Director. On the advice of Mr. John Koehring and AID's lawyers in Washington, Mr. Williams said that CLE's services could be retained if a new contract, witnessed by a REDSO officer, ceded the copyright to Editions CLE in the name of the U.S. Government.

On October 4, 1979, Mr. Williams signed the new contract in the name of the U.S. Government to grant the copyright to Editions CLE for a period of five years. The same day, the head of the Harvard team and Mr. Dihang signed a modifier to the contract of May 15, 1979. This was identical to the first contract except for the copyright clause.

PART II

TEACHING ACTIVITIES

1. Maternal-child and family health programs

From its inception, one of the Harvard-CUSS Projects' main objectives had been to contribute to CUSS's teaching program. During the period 1977-1979, the team members taught in the MCH program at the Maternité Principale, at the CUSS Pavilion, in Pediatrics in the nursing care program, in the family health program at Mvolye and supervised student research.

Since Dr. Chamberlin's final report discusses his and Dr. Naponick's activities (see Appendix III), this report will only discuss those of Ms. Carrière and Ms. Colgate.

Ms. Colgate taught courses each trimester on "The normal evolution of pregnancy," "prenatal care," "newborn examination," "the use of growth cards," and "early infant development" in the third and fourth year medical program, EM3 and EM4. She also gave 15 hours of "Educational Psychology" and 20 hours of "Psychology in Nursing" in the first year CESSI program. During their practical rotations, Ms. Colgate gave clinical supervision and teaching to EM3 and CESSI students in the prenatal and well-baby clinics at Mvolye, and to EM3 nursing and midwifery students at the high risk pregnancy clinic and the post-partum clinic.

Ms. Carrière gave four hours of lecture each trimester on "Studying a family from a health view point," and "Home visiting." Nearly every week she went with the EM3 students in their primary health care rotation when they made home visits to families in Nsimeyong, Ahala I and Ahala II. Despite their heavy work load when they were working on the book, Ms. Carrière and Ms. Colgate struggled to keep up with their teaching. They felt that it was essential to help meet the students' needs, and also that coping with the
daily clinical and educational nursing problems helped them make a more valid contribution to a textbook aimed at the needs of African nursing students.

Dr. Drouin’s Visit: Dr. Pierre Drouin was in Yaoundé from September 5, 1978 to November 28, 1978. During this short period as a consultant, Dr. Drouin contributed to the Ob-Gyn teaching program for EM4 and EM5, worked with Dr. Nasah on writing a textbook on Maternal and Child Health Care in the Tropics, and collaborated on the preparation of audio-visual teaching aids.

2. Nursing Care Course for Second Year Medical Students (EM2)

At Professor Eben-Moussi’s request, Ms. Colgate and Ms. Carrière assisted head nurses J. Douala, B. Bissai and B. Ngongang at the Central Hospital in teaching Fundamentals of Nursing Care to EM2 students. The skills taught included vital signs, injections and dressings.

At the outset, the Harvard team members met with the three head nurses to explain CUSS’s objectives in the nursing course. They then prepared the nurses for their teaching role by helping with lesson plans, observing and participating in their teaching sessions every Saturday morning, and then providing feedback after each class and clinical session.

This kind of teaching proved extremely demanding, but on the other hand, it allowed the head nurses to bring their clinical skills up-to-date while acquiring and putting basic educational skills into practice.

Ms. Colgate and Ms. Carrière felt that their approach was very successful, although time-consuming. They felt it was worth the trouble, and the logical application of their philosophy of technical assistance. They regret however that for some unknown reason, no Cameroonian nursing instructors from CESSI were assigned to work on this project with them. Unfortunately their method of training the head nurses could not be demonstrated to them.

CESSI 2nd Year Research Projects

From October 1977 to October 1979, the Harvard team supervised the following students’ research projects:

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<th>Tutor</th>
<th>Student</th>
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In addition to the textbook survey taken by Ms. Carrière, Ms. Colgate, Ms. Jato and Ms. Mounlom (see p. 2), Ms. Colgate also spent a part of her time doing original research in comparative infant development. This was in view of eventually completing her doctoral dissertation in Nursing at the University of Illinois, where she is now a Ph.D. candidate on leave of absence. Ms. Colgate has been studying midwifery care in three maternities and evaluating the adaptation and development of newborns in their first 24 hours of life. The study explores some possible determinants of African infant "precocity," by comparing the care different groups of mothers receive to see what effects it may have on their babies. This research is not yet completed since Ms. Colgate has had trouble finding time for research because of her heavy teaching load and the writing of the nursing textbook.

ADMINISTRATIVE ACTIVITIES

1. Organization

When Dr. R. Chamberlin left in July 1978, Ms. J. Carrière was appointed team leader by Dr. Janeway. Her job was to administer the project in Yaoundé.

Each month, Ms. Carrière sent Dr. Janeway a report of project expenditures in Yaoundé, as well as a report of current administrative and technical accomplishments and problems.

Ms. Carrière met regularly with Mr. D. Palmer, Mr. R. Thornton and Dr. R. Brown to report on the team's work, solve problems or solicit their advice before committing any project funds.

Since the team had only two members, Ms. Colgate and Ms. Carrière rarely scheduled formal team meetings. Instead they saw each other practically every day to divide up the work and share the problems that cropped up. Daily meetings were necessary because they had no telephones. Telephones would have greatly facilitated the project administration and saved the team a great deal of time.

2. Equipment transfers to CUSS

Early in 1979 the team leader began transferring the project vehicles, books, office supplies, medical equipment, teaching materials and spare parts (for the Jeeps) to CUSS. The equipment was appropriately distributed among the CUSS Director, the CESSI Coordinator, and other CUSS faculty, especially those in the maternal-child health section.
Whenever something was transferred, the person who received it signed a receipt testifying to the transfer. In each case, a copy of the receipt was sent to USAID/Yaoundé.

3. **Equipment ordered for CUSS**

On November 8, 1978 and December 19, 1978, the team leader received notification from the transport companies (Transcap/Cameroun and Cotracomex/Cameroun Transit Import) that medical and office supplies ordered for the project had arrived at their Yaoundé warehouses. The companies requested letters from the CUSS administration (via J. Carrière) to permit releasing the material duty-free before they could deliver it to CUSS.

Upon receiving this information, J. Carrière wrote immediately to the CUSS director asking him to obtain the necessary duty-free letter from the Ministry of Finances. In spite of repeated letters and approaches to the CUSS administration by Ms. Carrièrè and Mr. Brown of USAID/Yaoundé, so far it has proven impossible to get the equipment out of the storage warehouses.

It should be noted here that CUSS has not collected the equipment even though the Minister of Finances did in fact sign the needed tax exemption letter on March 28, 1979. Ms. Carrière received a copy of this letter on June 12, 1979. It is hard to imagine what could be preventing the CUSS administration from claiming the equipment the Harvard Project has bought. Is it because the administrative machinery moves so slowly that now the storage bill is more than the institution can afford to pay? Or has interest in the equipment waned with the approach of the Project's demise? The CUSS General Secretary has repeatedly claimed that the delay was caused by the Finance Ministry's reluctance to give duty exemption for office materials, which can be purchased in Cameroon. Should we accept this explanation even though the Harvard Project agreement with the government stipulates that all externally purchased Project equipment can be brought into the country duty-free?

**Inventory**

In another similar project it might be wise to establish a centralized inventory system from the outset of project activities. This job could be done mainly by some one from AID, as suggested by Dr. Chamberlin in his final report. The lack of an organized inventory system made transferring the equipment, books and supplies to CUSS an incredibly time-consuming job for the team leader.

**Equipment Repairs**

Several hard-to-obtain and expensive pieces of equipment had to be discarded at the end of the project because it was impossible to find a way to get them fixed locally. Ms. Carrière investigated sending them overseas, but the shipping and repair costs were so high that buying new ones would be cheaper. In a future medical project, would it not be worth it to include a medical equipment technician in the team? He could maintain the equipment during his stay while he trained a local person to do this job. The technician could also keep track of the project equipment inventory.

**Recommendations**

On the basis of our experiences reported above, we would like to offer the following recommendations:
1) Host-country nationals should receive further encouragement to publish nursing textbooks to meet African students' needs. Our survey indicated that African nursing students and tutors felt three areas to be high priority: a) community health, b) maternal and child health, and c) basic nursing care. Our textbook addressed the first subject in detail, handled some aspects of the second, and did not touch on the third. We suggest that another project provide the necessary assistance to African nurses so that they can fill in the gaps.

2) We suggest that whenever appropriate, small-scale projects should be encouraged. Small projects allow close personal ties to form between the nationals and the foreign technicians involved, thus favoring real teamwork. The project's objectives are more likely to be achieved, and the technicians are more likely to have a permanent influence on what their counterparts do.

3) Despite the various technical and administrative problems we had with our local printer and publisher, we feel that they are essential in making the book available to African students. It is unrealistic to think that AID staff will have the time or capability to distribute a book. Who among us has not seen boxes of excellent books, printed in Washington for developing country audiences, sent out to missions where they proceed to gather dust in a storeroom. No one has time to distribute them, or contact with the people who really need them.

4) Despite the expense, we feel that at least the team leader should have a telephone, and ideally, all the team members. The time wasted driving around town leaving messages is enormous and very frustrating.

5) Project equipment should be sent out at the start of the project and not near its end. With the long delays between ordering and delivery, often those who place an order are long gone before it arrives, and their replacements may be less interested in those particular items. Delays of up to several years mean that sometimes a particular need no longer exists when the order arrives; or the program may have been modified or eliminated; or the people involved, becoming frustrated in their work, go out and buy what they need out of their own pockets rather than sit idle for years. We strongly suggest that technicians should be permitted to purchase essential equipment locally when they can show an immediate need for it.

6) We suggest that future health assistance projects should focus on nursing and not on the medical profession. Primary health care, for example, is unlikely to be delivered by physicians, and it is nurses who will train and supervise village level health workers. Until now, nursing and midwifery training in these areas has remained largely theoretical. There is a great need for developing a practical program for training nurses for their new role in primary health care. They also need practical manuals and teaching aids that can be used with village level health workers. We suggest that a rural (applied) community health nursing specialty be developed as a new option in the nursing schools.

7) We recommend that a central project inventory system be set up with AID to make keeping track of the equipment easier and more reliable.

8) A medical equipment repair technician should be included in future projects, as well as whatever tools and budget he needs to train local people to do this job.
ACKNOWLEDGEMENTS

Before officially closing the Harvard-CUSS Project, Ms. Colgate and Ms. Carrière would like to thank the Cameroonian Ministry of National Education, the University of Yaoundé, CUSS and particularly its Director, Prof. E. Eben-Moussi, and its Deputy-Director, Prof. D. N. Lantum, for the great pleasure and satisfaction they have enjoyed from working with their Cameroonian colleagues Ms. Jato and Ms. Mounlom on the nursing textbook within CUSS's multidisciplinary framework. They take pride in having been able to create a learning tool to meet the needs of African students.

Despite certain unavoidable problems we had to deal with, many people helped us run our project smoothly. We think especially fondly of Prof. Charles Janeway for his unfailing support and his readiness to do all he could to make our jobs easier.

We are aware of the interest Ambassador Mabel Smythe has taken in the writing of our book and are most grateful for the honor she paid us by hosting a reception to help launch it.

We are extremely grateful to Mr. James E. Williams, Director of the Yaoundé USAID office, for recognizing how important it was for our book to have an editor, and for helping solve the administrative problems this posed, both here and in Washington.

We are likewise grateful to Mr. Frederick Gilbert for his diligence in helping us avoid many administrative faux-pas.

Day after day, as our project developed, Mr. Douglas Palmer followed what was happening, never sparing his time nor his efforts to help us in whatever way he could. The same can be said for Mr. Richard Thornton while he filled in during Mr. Palmer's absence.

We owe a lot to Dr. R. Brown for his wise professional advice in moments of crisis. We would also like to thank Dr. H. Warrack-Goldman for reading through the entire manuscript in AID's name.

We would be remiss not to mention Prof. G. L. Monékosso for his consistent support of our project, especially in its early phases while he was director of CUSS. Likewise, for the support of the Ministry of Health, and the special interest of Dr. Simon Atangana, Director of Health, who kindly agreed to preface our textbook.

The list could go on, but we would like to end by offering heartfelt thanks to all those people who have helped us in large ways and small between October 1977 and December 1979. Many thanks for all they have done to help us do our job.

Jeanne F. Carriere,
Susan H. Colgate
APPENDIX I


FINAL REPORT ON MY EXPERIENCE WITH THE PROJECT
September 1976 to December 1979
Susan Colgate

I. INTRODUCTION

This report is intended to supplement the report submitted jointly by Ms. Jeanne Carriere and myself and which covers our writing, teaching, research and administrative activities during the period from September, 1977 through December 1979. During that time we were primarily engaged in writing a community nursing textbook with our Camerounian colleagues, Ms. Miriam Jato and Ms. Damaris Mounlom. Please refer to that report in conjunction with this one.

Now at the end of my three and a half years of teaching at CUSS as a member of the Harvard team, I would like to briefly summarize my observations and reflections on the role Harvard has been able to play in CUSS's development.

Since its inception, CUSS's objectives have been influenced by its supporting donor agencies, WHO, USAID and CIDA, and have centered on preparing physicians and paramedical personnel to meet the health needs of African communities. Given the realities of African health problems, priority has been awarded to community health and meeting the needs of the two large vulnerable groups, mothers and children. Administratively the CUSS faculty and program are divided into three sections or "unités": The Biomedical Sciences Section, The Public Health Section, and The Mother and Child Health Section. Biomedical Sciences include the basic sciences as well as clinical medicine, surgery and the technician training programs. Public Health includes community health, nutrition, health education and social sciences, while Mother and Child Health includes obstetrics, gynecology and pediatrics. The Harvard team's mandate has been in the Mother and Child Health Section, to provide faculty support and assist in curriculum development. The overall objective was an integrated teaching program of maternal and child health (MCH) with a strong emphasis on prevention and teamwork among the various health professionals. This report will discuss how these objectives have been achieved in part, and frustrated in part.

II. THE MOTHER AND CHILD HEALTH SECTION

The team's working context, the MCH Section, has been plagued by a lack of cooperation between its two elements, pediatrics and obstetrics. There are many causes for this lack of cooperation. Perhaps most significant is a leadership void to unite the conflicting interests in the department. The leadership in obstetrics is English-trained, while pediatrics is French-trained, and the chairman has been unable to foster enough understanding between the two teams to arrange for basic cooperative services (e.g., pediatric coverage for the delivery rooms and premature nursery, tetanus vaccinations in the prenatal clinics to prevent tetanus neonatorum, or child-spacing referrals for mothers of malnourished children). In my three and one-half years of working in this section, meetings were called three times, and were mainly used for dividing up hours in the coveted CUSS pavillion consulting rooms among the competing departments. Inter-specialty cooperation was practically non-existent.
Given this context, the Harvard team, consisting of obstetrician, pediatrician, nurse-midwife and pediatric public health nurse, struggled to find some common ground and to strengthen teaching in the two specialty departments. Setting faculty members from the two specialties to talk to one another proved practically impossible, and a well-integrated teaching curriculum has not yet been achieved despite the persistent efforts of all members of the team. Despite this disappointment, the team has made certain innovations. One is the establishment of the postpartum clinic where medical and midwifery students learn and practice newborn and infant exams, postpartum gynecological and family planning skills and manage mothers establishing lactation. The obstetrics department has been more involved in this clinic than pediatrics, whose participation has been somewhat desultory; their interests being more curative. Nonetheless, with the consistent support and supervision of Dr. Nasah, chief of Ob-Gyn, Camerounian midwives, after working closely with the Harvard team in setting up and running the clinic for two years, are now carrying on very well without us.

The efforts of Drs. Drouin and Guillozet to institute pediatric coverage in the maternity and to assure proper teaching and supervision of newborn resuscitation in the delivery room have not been well supported by either pediatrics or obstetrics. This can be partly explained by the enormity of the task given the volume of deliveries, large percentage of high-risk cases, and extreme shortage of pediatric staff. Certain other innovations in the maternity that were instituted by Dr. Nasah in collaboration with the Harvard team have become routine because of his consistent support. These include the use of Partogrammes (Friedman curves for monitoring labor), Apgar scoring, and warming of newborns under heat lamps immediately after birth until they are dry. We also helped set up a resuscitation area and equipment in the delivery room, but their usefulness is limited by the difficulty of keeping the area supplied with drugs and oxygen, and the staffing problems mentioned above.

The concept of prevention of neonatal tetanus through maternal vaccination in pregnancy is now a part of the curriculum in obstetrics and its practice is demonstrated routinely in the high-risk pregnancy clinics and family health program in Mvolye.

Integrated maternal and child health services are taught and demonstrated as part of the Family Health Program at Mvolye, and all members of the Harvard team have worked in this program at one time or another. We all felt that supporting this program was essential since it was the only rotation in CUSS where students participated in giving integrated family health care to a defined community in a rural or semi-rural setting. My own involvement in this program consisted of three years of theoretical teaching in maternal and child health and clinical teaching in prenatal and well-baby clinics. The Mvolye program has had its ups and downs, but we can say that Harvard's support has at times saved it from collapsing, and that now after several years of struggle, it is firmly established, and no longer dependent on outside help. Many of the problems in the early years were related to the slowness of the process of community organization and the necessity of maintaining a functional teaching program despite the immaturity of the village health committees. Today these committees are organized and effective, and the village clinics and rural experience they provide are ideal for teaching students how to apply some of the theory they learn to reality. I feel the support we have given this program has been well worth the trouble.
Despite the integrated approach to teaching maternal and child health in Mvolye, this program has received little or no other support from the Maternal-Child Health Section. The Mvolye Family Health program falls instead under the Public Health Section, and is frequently criticized by both obstetricians and pediatrics. Petty jealousies and rivalries are probably the basis of these criticisms, but the fact remains that Harvard's support helped keep the Mvolye program going at times, and that it provides an excellent learning experience for the students. Unfortunately, since our project has withdrawn, it has become impossible to provide adequate supervision for nursing students at Mvolye, so now the program is limited to medical students. This is lamentable.

III. CONTRIBUTIONS TO CURRICULUM DEVELOPMENT

A. Focus. The team's contributions to curriculum development fall into two areas: the creation of teaching materials, and the establishment of demonstration clinics to ensure that students receive clinical training and experience in key areas. Throughout, we emphasized prevention as the most effective and appropriate way of handling African maternal and child health problems. We also chose this focus because other faculty members tended to focus on curative medicine and sometimes overlook prevention. Thus, early efforts of the team centered around assuring adequate teaching of subjects such as infant vaccination programs, use of growth cards in preventing malnutrition, health education in MCH, child-spacing, management of normal and high risk pregnancies, and so forth.

B. Teaching Materials. Because of a lack of appropriate teaching materials, a portion of project funds was used to purchase books on MCH for the CUSS library and to buy appropriate reference texts and install them securely (chained in place) in the students' on-call rooms in the Maternité Principale, Pediatrics Ward and CUSS Pavilion at the Central Hospital.

Project members also helped design and develop flipcharts for use in MCH health education programs, which were subsequently produced with project support, at the Mvolye AMA (Atelier de Matériel pour l'Animation) workshop. These materials are now in use at CUSS and throughout Cameroon.

Other teaching materials produced through the project included the community nursing textbooks, The Nurse and Community Health in Africa and L'Infirmier et la Santé Communautaire en Afrique, published in 1979 and described in Ms. Carrière's and my report; a manual on maternal health care and family planning aimed at African paramedical workers written by Ms. Lise Cousineau and now in press; and a text on maternal and child health care in the tropics being jointly written by Dr. B. T. Nasah, Dr. P. Drouin, Dr. J. Prêtre and Dr. G. Martin. This last manuscript is still under revision.

Aside from the contributions to the library and the above mentioned publications, all project members devoted considerable energy to writing and reproducing suitable handouts for the students they were teaching. They all wrote for their professional journals to report on research findings and to evaluate and share the results of their experience in the CUSS experiment. For a complete list of publications originating from The Harvard-CUSS Project, please refer to the bibliography at the end of this report.
C. Demonstration Clinics. With the enthusiastic and sustained backing of Prof. Nasah, project members set up and ran demonstrations-teaching clinics for child spacing, high-risk pregnancies and postpartum follow-up of mothers and babies. Camerounian counterpart midwives were trained to run the clinics under our supervision and are now carrying on well with the Camerounian Ob-Gyn faculty backing them up. The high risk and postpartum clinics are now part of all EM5 and EMG's Ob rotation. At present, the child spacing clinic is not used primarily for teaching, since Prof. Nasah is afraid of appearing to push family planning too actively in Cameroun. He also fears that giving CUSS students a little expertise in the field may be dangerous. Therefore, the child spacing clinic is not one of the regular clinical rotations and most students do not yet learn family planning skills. Nonetheless, the clinic is running smoothly and is prepared for teaching when Cameroun is ready to take advantage of it.

On the pediatric side, the team's efforts to set up demonstration clinics have been less successful, perhaps because the CUSS pediatric faculty is less interested in prevention. As a team, we struggled hard for several years to set up and maintain an infant vaccination demonstration clinic so students could get clinical practice in providing vaccination services. Our efforts met constant resistance from the rest of the CUSS faculty. None of the pediatricians would involve themselves enough to visit the clinic, and professors from the other specialties tried to close the clinic, feeling that it was inappropriate in the CUSS setting because the babies and mothers made too much noise, disrupted everyone else's work, and were too dirty. Finally a compromise solution was reached in which the vaccination clinic is allowed to meet once a month on a Saturday morning, when none of the professors are present. Students on their pediatric rotation are no longer sent to participate however, and none of the CUSS faculty takes an interest. The vaccination services and vaccines are provided by the OCEAC-Ministry of Health team.

Another innovation that the team demonstrated was daily availability, on a walk-in basis, of tetanus and DPT-Polio vaccinations at the CUSS Pavillion at the hospital. Students are taught and shown how easy it is to provide these basic vaccinations to all comers. In addition, vaccinating children when they are discharged from pediatrics has become a standard part of the curriculum.

The team's efforts to set up a nutrition rehabilitation clinic for teaching purposes were frustrated by a lack of support from the pediatric staff. Personnel could not be spared for one afternoon a week, and at CUSS malnutrition is preferably treated by hospitalization.

Well-baby clinics and preventive pediatrics in general continue to get short shrift in the pediatrics department and curriculum despite all our efforts. Faced with the pediatrics faculty's disinterest and outright resistance at times, the team focussed instead on supporting their inclusion in the Nwolye family health program.

The well-baby clinic set up and initially run by the team never received any support from the pediatrics department, and eventually folded in favor of pediatric specialty consultations for patients referred from the various peripheral MCH centers.
Another of the team's undertakings was to set up and equip a small student lab in the CUSS Pavilion at the Central Hospital so that students on call could perform their own lab work and practice their laboratory skills. This laboratory gets heavy use from the students. The microscopes and equipment remain constantly available to them, and are particularly convenient to the pediatric ward. Keeping the lab supplies is a constant problem, since it is not budgeted for, nor is there any faculty member responsible for supervising what goes on there now, despite all our efforts to get someone appointed to this task.

Finally the team has taught in the health care team demonstration rotation in Bamenda. Since I personally have not been involved in this program, I have no comments to offer on it.

IV. FACULTY SUPPORT

Faculty support means many things. On the simplest level, it means the hundreds and hundreds of hours of actual teaching we did, both theoretical and clinical, in the obstetrics, pediatrics, family health, community health and nursing programs. This represents students taught by us, teaching methods we demonstrated, and faculty gaps we filled in the early years of the school before there were adequate numbers of qualified Camerounian faculty. It also means a curriculum we demonstrated and helped shape in the formative years of the school. Though difficult to measure, faculty support really in its best sense means how we helped the CUSS faculty itself grow and shape its curriculum, not just the hours of classes we taught.

One way the project contributed to faculty growth and development was through counterpart training, both on the job, and outside CUSS's walls. On-the-job counterpart training had its biggest impact in the nursing sphere. On-the-job training of midwives for the family planning, high risk pregnancy and postpartum clinic was highly successful, likewise nurses for the well-baby and vaccination clinics, though the lack of support in pediatrics made it difficult for them to be used properly.

Ms. Carrière's and my own work to support and develop the skills of our nursing colleagues, Ms. Jato, Ms. Mounlom, and the head nurses teaching in the CUSS nursing program have already been covered in our joint report and need not be repeated here.

Counterpart training in general was more practical when the team did it themselves on the job. On-the-job training meant that people's skills were being upgraded in the jobs they were assigned to, and the overall quality of teaching and patient care improved. On-the-job training guarantees that what is taught is relevant to the trainee's job, and that the trainee will actually be in a position to use what he learns. This is in contrast to trainees sent to special courses or training programs overseas. There is no way of assuring that overseas training will be relevant, nor that on their return the trainees will be assigned to positions where they can use their new skills. Sadly, we frequently watched counterparts sent overseas for training return home with their good common sense warped by inappropriate foreign ideas based on advanced technology unavailable in Cameroun. At other times, returning well-trained people were not placed in positions where they could use their new skills. Thus, it often seemed as though sending people away for special training was not as wise as training them on the job.
It should not be forgotten that CUSS is in a university setting, and that people with on-the-job training will eventually lose their jobs in favor of those with recognized academic credentials as the school develops. Thus, in the long run it seems worth the investment to identify good people and train them in regular academic programs. Otherwise they will never hold positions to influence what goes on in CUSS. This is particularly true in the nursing sphere.

Cameroon- and French-trained nurses do not receive academic degrees. As the advanced nursing program at CESSI struggles to win acceptance from the CUSS doctors and university faculty, it is extremely hard to win recognition if the nursing faculty members do not hold academic degrees. Thus, although some aspects of the training may not appear relevant to African needs, the degree itself is relevant to the development of the nursing profession in Cameroon.

This problem exists likewise for other paramedical professions. For example, a laboratory technician whom we had trained on the job could not be hired at CUSS nor by the Ministry of Health when our project could no longer pay him, whereas another technician, whom we had sponsored for training in a WHO course, was hired at CUSS because he had credentials to prove his qualifications.

V. THE NEW CUSS HOSPITAL

Although the construction, planning and opening of the new CUSS Hospital did not fall under the Harvard team's mandate, as a group, we have been concerned about it from the start. This facility was originally conceived of as a small community hospital serving a geographically limited area where students would learn to practice integrated community medicine with the hospital as a backup secondary care facility. A large ambulatory care section was planned with the MCH out-patient section getting the most space. The MCH section received financing from USAID in the hopes that a good demonstration facility would guarantee a strong teaching program in preventive maternal and child health care. The construction has been finished for several years now, but unfortunately the facility is not yet completely operational.

Shortly before completion of the hospital's construction, the Cameroonian government decreed that all hospitals in the country must come under the Ministry of Health administrative jurisdiction. The purpose of this decree was to gain some control over the various disparate missionary and church-dependent health facilities scattered throughout the country so that their efforts and resources could be coordinated in the overall national health planning. To the dismay of the CUSS administrators, however, the wording of the decree meant that the new university teaching hospital should fall under Ministry of Health administration. To the idealists at CUSS who had hoped to run a small jewel of a demonstration facility dedicated to teaching and unencumbered by Ministry of Health obligations, personnel and bureaucracy, this seemed a disaster. Likewise a disaster for the Ministry of Health whose personnel, equipment and operating budget were all too woefully short.
to run the already-existing facilities, much less open a brand new hospital. Thus, plans to open the hospital came to a prolonged halt while a long jurisdictional dispute ensued. The dispute was finally resolved in the summer of 1978 with the appointment of a joint directing committee from both the Ministry of Health and the Ministry of Education, the appointment of a CUSS Professor as Hospital Director and the naming of a hospital administrator. In the ensuing year and a half, preparations for the hospital's opening have moved steadily forward.

As a team, the Harvard group felt that they wished to have some impact on how the new hospital would be run. The long jurisdictional dispute frustrated them because, until it was resolved, none of their Camerounian counterparts were interested in working on concrete planning. The team watched with dismay as disuse caused the buildings to deteriorate. They finally resolved to move some of their demonstration clinics into the new out-patient wing. This would prevent further deterioration, relieve the cramped working conditions at the Central Hospital, and demonstrate how to run efficient out-patient clinics. They hoped, thus, by their example and by their presence to influence how the new facility would be run.

Maintaining a cautiously low profile to avoid becoming involved in the still-ongoing jurisdictional battle, the team quietly moved the infant vaccination clinic and the family planning clinic to the new site. These two clinics needed larger quarters because they had both become very popular and were functioning in inadequate spaces at the Central Hospital. Thus, both staff and patients were thrilled by the move. Since the move these two clinics continue to function smoothly in their new home. At present, they still provide the only regular clinical services offered at the new CUSS hospital.

The new hospital director is struggling to gradually get the facility operational. The classrooms are all in use for teaching. Secretarial and janitorial staff have been hired and are on the job. The telephone system and central switchboard are in use. Furniture is being moved in, linens and staff uniforms are being made from local fabrics. Patient record forms are being printed and a record-keeping system is being tried in a small trial out-patient clinic which is being run for a few weeks for that purpose. Clerical staff is being hired and professional staff is being recruited. Though problems abound, progress is being made.

The hospital's opening is planned in phases. The first phase, which is opening of the out-patient clinics, will probably occur within the next year. Within CUSS and The Ministries of Health and National Education, administrative events and problems beyond the team's control have determined the timetable. On the technical level, however, the team members have been able to contribute their planning input in clinical and educational matters, and have demonstrated them in their demonstration clinics. This has proved most useful for solving the day-to-day problems impossible to foresee in any other way.

VI. CONCLUSION AND RECOMMENDATIONS

In conclusion, one can review the team's many diverse contributions in teaching, research and service areas. Their influence on students and fellow
faculty members will be lasting, and the teaching materials they created and left behind will be in use and influence curriculum for many years. In retrospect, the greatest problem they encountered was the lack of cooperation between the obstetrics and pediatrics departments. Some problems also arose in the area of counterpart training. The following recommendations are based on the team's experiences coping with these problems.

A. An integrated approach to maternal and child health care teaching required individual team members with experience in both areas. Highly trained American doctors who are super-specialized with mothers but afraid to touch babies, or wonderful with babies but unable to examine a mother, cannot possibly demonstrate or teach an integrated approach. Practitioners need to be specialized in family practice or in both specialities.

B. Primary integrated maternal and child health in Africa is and will continue to be provided by nurses, not doctors. A training program to influence MCH must focus on the clinical training of nurse-practitioners in Africa rather than physicians.

C. Since curriculum development and educational institution-building involve influencing how other faculty members think about and approach their work, technicians must be prepared to make a fairly long-term commitment when they come out. Those who stay for one year or less cannot be expected to do much more than teach students. A one-year stay is not long enough to understand the complexity of problems influencing how an institution in a foreign culture runs.

D. Counterpart training must include both formal courses so these people's training will be recognized, and on-the-job training so they get help transferring what they were taught to the realities they face. One without the other is insufficient.

E. In selecting counterparts to sponsor for formal training programs, priority should be given to nurses and other paramedicals. Physicians sent overseas for training are becoming too over-specialized for the health needs and facilities of their country. This is a waste of resources.

F. Finally, the creation of textbooks and other teaching materials appropriate to the needs of African students remains high priority.
STUDENT ENROLLMENT IN THE UCHS, 1976-1977

**Students in Medicine (accepted from 568 candidates)**

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**Post Graduate Nursing Program (CESSI)**

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**Technical Program**

- Laboratory: 8
- Sanitation: 5
- Pharmacy: 7
- Physiotherapy: 8
- Dental Technician: 8
- Radiology: 8

**Graduates in 1975-1976**

- Physicians: 32
- Nurses: 24
- Technicians: 14
### FACULTY OF THE U.C.H.S.

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PERINATAL STATISTICS AND CHARACTERISTICS OF PATIENTS SEEN IN MATERNITY UNIT, YAOUNDE, CAMEROUN

Presentation in 27,937 deliveries

97.7% - vertex
1.6% - breech
1.9% - twinning incidence

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<th>Socioeconomic</th>
<th>Average Birth Weight</th>
<th>No. of Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>indigent patient group</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1974 girls</td>
<td>3.061 kg.</td>
<td>500</td>
</tr>
<tr>
<td>boys</td>
<td>3.167 kg.</td>
<td>500</td>
</tr>
<tr>
<td>average</td>
<td>3.114 kg.</td>
<td>1,000</td>
</tr>
<tr>
<td>1975 girls</td>
<td>2.99</td>
<td>3,908</td>
</tr>
<tr>
<td>boys</td>
<td>3.13</td>
<td>4,059</td>
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<tr>
<td>average</td>
<td>3.06</td>
<td>7,967</td>
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<tr>
<td>prosperous patient group</td>
<td></td>
<td></td>
</tr>
<tr>
<td>girls</td>
<td>3.19</td>
<td>728</td>
</tr>
<tr>
<td>boys</td>
<td>3.30</td>
<td>708</td>
</tr>
<tr>
<td>average</td>
<td>3.25</td>
<td>1,436</td>
</tr>
</tbody>
</table>

Perinatal Mortality

A. indigent group with team involvement
- 1973-74 41.3/1000 births 17,665 deliveries
- 1975 31.2/1000 births 9,305 deliveries

B. more prosperous group at separate site without team involvement
- 1975 43/1000 births 2,150 deliveries

Maternal Mortality 1973-1975

1 per 763 deliveries
37 patients

Major Causes of Death

<table>
<thead>
<tr>
<th>Cause</th>
<th>Count</th>
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<tbody>
<tr>
<td>Hemorrhage</td>
<td>15</td>
</tr>
<tr>
<td>Puerperal sepsis</td>
<td>8</td>
</tr>
<tr>
<td>Non-obstetric disease</td>
<td>7</td>
</tr>
<tr>
<td>Anesthesia</td>
<td>4</td>
</tr>
<tr>
<td>Toxemia</td>
<td>1</td>
</tr>
<tr>
<td>Anemia</td>
<td>1</td>
</tr>
<tr>
<td>Post partum hemorrhage</td>
<td>1</td>
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</table>
UNITED REPUBLIC OF CAMEROON
NATIONAL ECONOMIC PLANNING - THIRD PLAN 1971-76 REPORTED IN MILLIONS, U.S. $

<table>
<thead>
<tr>
<th>Year</th>
<th>1971-72</th>
<th>1972-73</th>
<th>1973-74</th>
<th>1974-75</th>
<th>1975-76</th>
<th>TOTAL</th>
<th>% of Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health &amp; Social Welfare</td>
<td>3.75</td>
<td>5.41</td>
<td>5.62</td>
<td>6.04</td>
<td>7.29</td>
<td>28.12*</td>
<td>2.4</td>
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<tr>
<td>(Govt. contribution: $23.12 m. + Private - NGO etx. $5 m.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Education</td>
<td>13.28</td>
<td>13.91</td>
<td>17.68</td>
<td>21.11</td>
<td>24.12</td>
<td>90.14</td>
<td>7.7</td>
</tr>
<tr>
<td>C.U.S.S.</td>
<td>.18</td>
<td>.33</td>
<td>.53</td>
<td></td>
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</tr>
<tr>
<td>C.U.S.S. TOTAL</td>
<td>200.35</td>
<td>234.96</td>
<td>239.17</td>
<td>239.35</td>
<td>252.83</td>
<td>1,166.67</td>
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<tr>
<td>External Aid</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>295.42 m.</td>
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</table>

(49% compared to 65% during 2nd Plan)  
(Based on U.S. $1 = 240 CFA)

THIRD PLAN (1971-76) PROJECTS

<table>
<thead>
<tr>
<th>Project</th>
<th>Total</th>
<th>Bilat.</th>
<th>Missions &amp; Volaqs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medicine (curative)</td>
<td>5,549</td>
<td>1,929</td>
<td>850</td>
</tr>
<tr>
<td>&quot; (preventive)</td>
<td>1,371</td>
<td>374</td>
<td>67</td>
</tr>
<tr>
<td>&quot; (strategic operations)</td>
<td>3,111</td>
<td>575*</td>
<td></td>
</tr>
<tr>
<td>Social Welfare</td>
<td>1,110</td>
<td></td>
<td>660</td>
</tr>
<tr>
<td>Facilities</td>
<td>6,265**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personnel (training)</td>
<td>1,848</td>
<td>458</td>
<td></td>
</tr>
<tr>
<td>Research</td>
<td>300</td>
<td>300</td>
<td></td>
</tr>
<tr>
<td><strong>Total 5-year plan (millions CFA)</strong></td>
<td>17,183</td>
<td>3,957 (23%)</td>
<td>977</td>
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</table>

*also includes some Cameroon Government funds.  
**data undifferentiated as to amount received through external aid.

(thousands CFA)

PER CAPITA GROWTH

<table>
<thead>
<tr>
<th>Year</th>
<th>1970</th>
<th>1972</th>
<th>1973</th>
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</thead>
<tbody>
<tr>
<td>U.S. $</td>
<td>130</td>
<td>150</td>
<td>180</td>
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</tbody>
</table>

GDP GROWTH (CFA)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>m.</td>
<td>168 m.</td>
<td>230 m.</td>
<td>244 m.</td>
<td>269 m.</td>
<td>384 m.</td>
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</table>

THIRD PLAN: HEALTH ALLOCATIONS

<table>
<thead>
<tr>
<th>Project</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medicine (curative)</td>
<td>32%</td>
</tr>
<tr>
<td>Medicine (preventive)</td>
<td>20%</td>
</tr>
<tr>
<td>Social Welfare</td>
<td>.7%</td>
</tr>
<tr>
<td>Facilities</td>
<td>36%</td>
</tr>
<tr>
<td>Formation of personnel</td>
<td>.4%</td>
</tr>
<tr>
<td>Research</td>
<td>.1%</td>
</tr>
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</table>
### THIRD PLAN: Nurses and Nurse Midwives 1971-76

Schools: 4 public and 1 private

<table>
<thead>
<tr>
<th>Objective</th>
<th>1975</th>
<th>Existing</th>
<th>In Training</th>
<th>To be Trained</th>
<th>Cost/Year</th>
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</thead>
<tbody>
<tr>
<td>Nurses-3 year program</td>
<td>1298</td>
<td>656</td>
<td>97</td>
<td>128</td>
<td>154 mill. CFA</td>
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<tr>
<td>Nurses-2 year program</td>
<td>2762</td>
<td>952</td>
<td>130</td>
<td>336</td>
<td>158 mill. CFA</td>
</tr>
<tr>
<td>Aides</td>
<td>4990</td>
<td>580</td>
<td>185</td>
<td>845</td>
<td>80 mill. CFA</td>
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<tr>
<td>Physicians</td>
<td>400</td>
<td>250*</td>
<td>209</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Vaccines</th>
<th>Financed By</th>
<th>1973-74</th>
<th>1974-75</th>
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<tbody>
<tr>
<td>BCG</td>
<td>France</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Measles</td>
<td>U.S.A.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Polio</td>
<td>Canada</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DPT</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tetanus</td>
<td>Cameroon</td>
<td>500,000 CFA</td>
<td>1 mill. CFA</td>
</tr>
</tbody>
</table>

Note: Values of donated vaccines were not available for earlier years and 1976 values were not determined fully by November 1976.

*87 Cameroonian - 1 M.D./26,000 pop.*

163 Foreign (Expatriates)
A. HARVARD-CUSS PROJECT BIBLIOGRAPHY


22. Garrett, N.: Teaching Immunization is not enough: A Survey of Tetanus Vaccination in Health Sciences Students in Cameroon. (Submitted for publication)

B. BACKGROUND READING ON THE PROBLEMS AND OBJECTIVES OF THE UNIVERSITY CENTER FOR THE HEALTH SCIENCES


<table>
<thead>
<tr>
<th>Quantity</th>
<th>Description</th>
<th>Cost</th>
<th>Freight</th>
<th>Total</th>
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<tbody>
<tr>
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<td>1974 Jeep Wagoneers</td>
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<td></td>
<td>Ser. #J4F144 CA66062</td>
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<tr>
<td>1</td>
<td>1974 Ford Club Wagon</td>
<td>4,328.30</td>
<td>1,921.26</td>
<td>6,249.56</td>
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<td>Ser. #E319H16835</td>
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<td>#78-0113-2006-3</td>
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<td>IBM Selectric Typewriter</td>
<td>450.00</td>
<td>198.97</td>
<td>648.97</td>
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<td></td>
<td>#9669153</td>
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<td><strong>Dictating Equipment</strong></td>
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<td>Lanier Edisette Combination #358101</td>
<td>409.00</td>
<td>182.04</td>
<td>786.04</td>
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<tr>
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<td>195.00</td>
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<td><strong>Medical Equipment</strong></td>
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<td>Micro-hematocrit (220 volt)</td>
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<td>Centrifuge</td>
<td>165.50</td>
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<td>2</td>
<td>Blood Pressure Gauge @ $52.50</td>
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<td>Sigmoideoscope</td>
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<td>Shubert Biopsy Punch Forceps</td>
<td>56.70</td>
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<td>Wall Mounted Transformers (220 AC) @ $103.25</td>
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<td>4</td>
<td>Angiocath. @ $68.50</td>
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<tr>
<td>1</td>
<td>Pediatric Aneroid Sphygmomanometer</td>
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<td>Welch Allyn Diagnostic Set #99500</td>
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<td>Sklar Perforator @ $53.20</td>
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<td>Ophthal Head @ $57.60</td>
<td>115.20</td>
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<td>2</td>
<td>Centrifuge C/A @ $366.70</td>
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<td>2</td>
<td>#305-0072-970 Ohio @ $65.00</td>
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<td>2</td>
<td>C/A A2970 Reader @ $65.80</td>
<td>131.60</td>
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<td>Pathfinder Pelvic Model</td>
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<tr>
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<td>Airshields Baby Ambu</td>
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<tr>
<td>4</td>
<td>Angiocath. @ $57.50</td>
<td>230.00</td>
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<td>Allen Hanbury Modified Blair's Skin Grafting Knife</td>
<td>110.00</td>
<td>1.51</td>
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<td><strong>Household Effects</strong></td>
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<tr>
<td>2</td>
<td>Westinghouse Refrigerators 2-door</td>
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<tr>
<td></td>
<td>Model RT-120RPN2 @ $365.15</td>
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<td>GE Automatic Washer</td>
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<td></td>
<td>Model #549 @ $270.00</td>
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<td>3</td>
<td>Clothes Dryer, Westinghouse Automatic</td>
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<td></td>
<td>Model DTX-152 @ $242.60</td>
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<tr>
<td>4</td>
<td>Westinghouse Airconditioners</td>
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<td>12,000 BTU @ $167.60</td>
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<td>Dock Surcharge</td>
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<tr>
<td>Quantity</td>
<td>Description</td>
<td>Cost</td>
<td>Freight</td>
<td>Total</td>
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<td>Dining Table</td>
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<td>4</td>
<td>Bedroom Chests @ $108.75</td>
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<tr>
<td>2</td>
<td>Desks @ $165.50</td>
<td>331.00</td>
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<td>2</td>
<td>Bookcases @ $68.50</td>
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<tr>
<td>1</td>
<td>Settee</td>
<td>112.75</td>
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</tr>
</tbody>
</table>

Amount on freight hard to estimate since bill includes shipment of items under $50 and expendable, so amount of full shipment is listed. Also, some items delivered personally by people going to Yaoundé.
PARTICIPANT TRAINEES

1. Dr. Joseph Mbede (7/8/77-8/30/77)

Received training at the Children's Hospital Medical Center to provide him with advanced knowledge in child development, assessment of behavior of newborn, pediatric neurology and general pediatrics. (An evaluation is attached which covers Dr. Mbede's work on assessment of newborn.) As professor of pediatrics, he returned to the University Center for Health Sciences to pass on his new training to medical students at CUSS. In August 1978, he was named Director of the CUSS Hospital.

2. Dr. Boniface T. Nasah (5/15/75-8/15/75)

Chief of Obstetrics and Gynaecology at CUSS, Dr. Nasah came here for training in the use of the laparoscope under Dr. Donald P. Goldstein (letter of evaluation attached), and received training in immunological research techniques under Dr. John David at the RBBH. Held HMS appointment while here as Visiting Lecturer in Obstetrics and Gynecology.

3. Mrs. Dorothy M. Nasah (1/1/77-12/31/79)

Originally here under the sponsorship of WHO to obtain her masters degree in nursing education at BU (received 1/77), Project took over sponsorship as of 1/77 to support her doctoral studies at BU in nursing education, specializing in health education. This will enable her to assume advanced position to strengthen health education component of nursing program at CUSS. Will become full time member of the University of Yaounde. Took intensive French course at Middlebury College to aid her in teaching francophone and anglophone students. Upon completion of dissertation proposal, Mrs. Nasah will return to Cameroon to carry out the field work on her dissertation.

4. Njifutie Njikam (9/1/75-7/31/76)

Having already obtained his Ph.D., Dr. Njikam enrolled in the Harvard School of Public Health, working in tropical public health, to receive an MPH degree to prepare him for teaching basic medical science at CUSS.

5. Mrs. Grace Walla (9/76-9/79)

Attended Teacher's College at Columbia University and Hunter College to meet necessary requirements to be accepted into MPH training program to get her MPH which would enable her to teach public health nursing courses to Cameroonian and other African students. She received her MPH at the University of Pittsburgh School of Public Health (letter attached).
To: Charles A. Janeway, M.D.
From: T. Berry Brazelton, M.D.
Date: September 7, 1977
cc:

Subject: EVALUATION FOR DR. MBEDE

We have found that only skilled examiners who really understand neonates -­ the interaction between their physiological and psychological mechanisms, can be trained to reliability on the Brazelton Neonatal Behavioral Assessment, so we are very proud that Dr. Mbede was able to achieve this. I would predict that he will maintain reliability for at least two years and could use it both clinically and for research purposes. He is such an intelligent, kind man in addition. It was a pleasure to have him here.

T. Berry Brazelton, M.D.
Chief, Child Development Unit
Associate Professor of Pediatrica
Harvard Medical School

Dr. Mbede was trained on the administration and scoring of the Brazelton Neonatal Behavioral Assessment. This exam looks at the total behavioral repertoire of the newborn in the context of an interaction with a sensitive examiner. The process of becoming trained on the exam is largely a task left to the trainee. He must sensitize himself to becoming a keen observer of behaviors in the newborn, while providing for the infant optimal environment to elicit those behaviors. In order to be aware of the range of behaviors possible, he must use the scale to examine a good number of infants so that he can reliably score a given infant's performance.

Dr. Mbede was shown how to administer and score the scale in July and then was provided with access to newborns so that he could practice on his own. Despite the language difficulty, which might be considered by some to be a handicap, especially when asking nurses' and mothers' permission to handle their babies, Dr. Mbede clearly had done his homework. He was checked for reliability in August, and he proved to be a sensitive and thorough examiner. He was relaxed and smooth in his handling of the infant, he took the time to work for the best performance he could get from the baby and he was comfortable and accurate with the scoring system. I was pleased to work with him.

Susan Palmer
Child Development Unit
BNBAS Trainer
July 23, 1975

Charlene A. Janeway, M.D., Campus Coordinator
Harvard-CUSS Project
Children's Hospital Medical Center
300 Longwood Avenue
Boston, Massachusetts 02115

Re: Dr. Boniface Nasah

Dear Dr. Janeway:

Dr. Boniface Nasah, Chief of Obstetrics and Gynecology at CUSS, Yaounde, has been working with me for approximately one month in the use of the laparoscope at the Boston Hospital for Women, Children's Hospital Medical Center and the New England Baptist Hospital. He has performed a number of laparoscopic procedures under my direct supervision and he will continue to work with me during the next few weeks until his departure.

In my opinion, Dr. Nasah already understands quite thoroughly the use of the laparoscope and he is ready to undertake this procedure in his own country when he returns. I would recommend that his Department be given the opportunity to purchase a laparoscope for his use.

I feel that he has received equivalent training over the past two months to that at one of the teaching courses that are held for a week in some large medical centers.

I hope this arrangement is satisfactory with you and trust that Dr. Nasah has enjoyed his experience with us.

Cordially,

Donald P. Goldstein, M.D.

DPG/pjs
Boston University

School of Education
Department of Movement, Health & Leisure
704 Commonwealth Avenue
Boston, Massachusetts 02215

May 3, 1979

Ms. Elvira Settler
Population and Health Branch
Department of State
Agency for International Development
Washington, D.C. 20523

Dear Ms. Settler:

I would like to take this opportunity to recommend further financial funding for Ms. Dorothy Nsah who is looking toward the doctoral degree at this institution.

Dorothy needs to remain here in July and August, for which she requires financial assistance. Her work is well along, and in those two months she will take her examinations and have a hearing on her dissertation proposal. This will permit her to leave for her homeland shortly thereafter, where she will conduct her research pertaining to infant and maternal nutrition programs. She will be working on a valuable project of significant benefit to her people. I certainly hope she will be able to continue along the road to her advanced degree as planned.

Dorothy is a conscientious person with a fine sense of purpose. I hope everything necessary can be done to encourage and help her.

Sincerely,

Carl E. Willgoose
Professor of Education

cc: Dr. Charles A. Janeway
 Mr. Douglas Palmer
March 22, 1979

Dear Dr. Janeway:

Upon receipt of your letter I arranged for an appointment with Mrs. Walla to discuss with her the progress she has been making towards her M.P.H. degree. I am happy to inform you that she appears to be moving along very nicely and that she fully expects to complete all the requirements, including the essay, for the degree sometime in mid-August.

I am enclosing a copy of her transcript which shows the grades she has earned thus far, all of which are certainly commendable. I am also enclosing a copy of the Course Election Record of those courses which she is taking this term. I see no reason why she should not complete her program as expected.

As you may know, Mrs. Walla has her four children with her here in Pittsburgh, who range in age from 5 to 14, and her husband has remained in the Cameroons with a brief visit to Pittsburgh last November. As you can see, she certainly has a tremendous incentive to return to her home country, from which she has been absent for three years. She is aware that her support will end in September, although I do not believe she has heard this directly from A.I.D.

One thing she did mention to me is that she would very much like to meet you in person because of your past kindnesses to her, although all of it was done through mail or telephone. We too appreciate your interest in her and I am pleased to see that she has turned out to be a very good student. Should you require any further information, please feel free to contact me.

Sincerely,

Gerald C. St. Denis, Ph.D.
Asst. Dean for Student & Alumni Affairs

GCS/n1
Encs.
cc: Dr. Cutler

PITTSBURGH, PA 15261
September 5, 1979

Charles A. Janeway, M.D.,
Campus Coordinator
Harvard-CUSS Project
Harvard Med. School, Dept. of
Pediatrics
Children's Hospital
300 Longwood Avenue
Boston, MA 02115

Dear Dr. Janeway:

It was good to talk with you via telephone this morning and to give you the "official" word that Grace Walla had completed her course work and essay requirements and was awarded the M.P.H. degree on August 10.

I am enclosing an unofficial copy of her transcript to show you the course work she has taken and the highly satisfactory grades she has received. I believe Mrs. Walla has benefited from her education here and I feel she has done very well. We are happy to have had her as a student.

Sincerely,

Gerald C. St. Denis, Ph.D.
Asst. Dean for Student & Alumni Affairs

GCS/n1
Enc.