PROJECT PAPER (REVISION)

CAMEROON

UNIVERSITY CENTER FOR HEALTH SCIENCES (CUSS)

Project No. 631-0531

Authorized by AA/AFR: September 22, 1978

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SEP 22 1978

ACTION MEMORANDUM FOR THE ASSISTANT ADMINISTRATOR FOR AFRICA

FROM : AFR/~~DR,~~ John W. Koehring

SUBJECT: Cameroon - University Center for Health Science (CUSS); Project No. 631-0531

I. PROBLEM:

Your approval is requested to increase the authorized life-of-project grant funding for the University Center for Health Sciences (CUSS) project (631-0531) from $3,500,000 to $5,126,000, to extend the project completion date through Fiscal Year 1979, and to execute a Project Agreement amendment with the Government of the United Republic of Cameroon (GURC) in the amount of $1,345,000 from Fiscal Year 1978 funds. Funds for the amended Project Agreement will be from FAA Section 104 ($915,000 Health; $430,000 Population).

II. DISCUSSION:

A. Project Background

The University Center for Health Sciences (CUSS) is a Cameroonian institution which trains, in a fashion relevant to the African setting, physicians and other health workers in the biomedical sciences, in public health and in clinical medicine. The training programs, reflecting CUSS philosophy, place considerable emphasis on the integration of preventive medicine, clinical medicine and public health delivery services by means of a health team approach with the aim of extending to all the population low-cost methods of health protection and improvement, especially in rural areas.

The entire CUSS project includes the CUSS complex consisting of the Biomedical Sciences Unit, the Public Health Unit, and the Community Health Unit, the latter of which consists of (1) a 150-bed community teaching hospital, and (2) an outpatient center which includes a pediatric/MCH clinic and one for regular adult care.

AID assistance to CUSS, as approved by the Administrator on October 12, 1971 (attached), consists of the following basic elements:

-- Provision of technical assistance to CUSS by a U.S. university contractor (Harvard University, School of Public Health, was ultimately selected);

-- Financing construction of the hospital's outpatient department, a 30-bed pediatric wing and a 30-bed maternity wing (the AID contribution to construction equalled 25 percent of all construction costs);

-- Participant training of CUSS faculty and staff in public health (including population and family planning, and MCH), and in clinical disciplines with emphasis on community health; and,

-- Scholarships to CUSS for nationals of African countries.

The original goal of the project was to assist and strengthen CUSS and its philosophy, in close cooperation with other donor organizations, and to introduce the concepts of child spacing and family planning as a means of promoting maternal and child health at all three levels of training, research and service.

A multi-donor assisted project, the estimated financial requirements for CUSS at the time of original project approval were as follows:

	Million $US	% Total
USAID	$3.5	38.89
France (FAC)	2.0	22.22
Canada (CIDA)	1.0	11.11
WHO	.5	5.56
GURC	2.0	22.22
TOTAL	$9.0	100%

B. The Current Situation

The original Noncapital Project Paper (PROP) for the CUSS project was prepared in 1971 before the logical framework was in widespread use as a project design and evaluation tool and before the present Project Paper (PP) format was adopted. While the CUSS project is now nearly completed, some changes have occurred since its inception, reflecting the passage of time and the evolving needs of CUSS. Furthermore, a "mid-project" evaluation was conducted by AID in April 1977 and the report was submitted in June 1977. In light of these developments, and considering it advisable to have an updated project document for use in the final project evaluation, USAID/Yaounde submitted a PP Revision (attached) for AID/W review and approval.

C. Recommended Changes

The PP Revision proposes the following changes:

-- Authorize continuation of the CUSS project through Fiscal Year 1978 for obligation purposes and through Fiscal Year 1979 for implementation purposes.

-- Authorize the extension of Harvard University's technical assistance contract through Fiscal Year 1979, with obligation from Fiscal Year 1978 funds of $500,000 to see this contract through to completion.

Provision of four academic years of faculty support to CUSS was called for in the original PROP and confirmed by the mid-project evaluators. The extension of the contract, as proposed, will enable Harvard to complete the originally planned four years of faculty assistance in MCH training (academic years 1974-75 through 1977-78) and, in addition, permit completion of a bilingual (French-English) Public Health Nursing Text by the end of Fiscal Year 1979.

The obligation of $500,000 of Fiscal Year 1978 funds will cover all remaining projected Harvard contract expenses, including the services of a four-person team of faculty advisors to CUSS plus the addition of a technician to develop and edit the nursing text.

-- Authorize the obligation of $845,000 of Fiscal Year 1978 funds to cover 25 percent of the cost overruns incurred in connection with construction of the CUSS hospital. This 25 percent accords with AID's share of the original construction costs.

The proposed $845,000 overrun contribution was determined to be reasonable by USAID/Yaounde and by REDSO/WA engineers following completion of post-construction settlement negotiations between the GURC, their project consulting engineer, and the construction contractor. A REDSO/WA engineer has determined that FAA Section 611(a) requirements have been satisfied.

USAID/Yaounde and REDSO/WA engineers have been concerned over hospital building and equipment maintenance efforts to date. The Project Agreement, as amended, will, therefore, contain provisions for adequate building and equipment maintenance prior to the disbursement of any additional AID funds slated to pay for hospital construction costs.

D. Project Purpose/Goal

The project purpose, as set forth in the PP Revision, is to develop an effective and viable MCH teaching program within CUSS. This project is expected to contribute substantially to the efforts of the GURC to extend the accessibility of the national health care delivery system, emphasizing preventive medicine and maternal and child health, to 80 percent of the population.

E. Financial Summary

Funding requirements for the current project are as follows:

	Alloted/Obligated Thru FY 77	Proposed FY 78 Obligation
Technical Assistance Contract with Harvard (includes most participant training)	$1,534,621	$500,000
Direct Participant Training	50,000	-
CUSS Scholarship to Non-Cameroonians	105,000	-
CUSS Hospital Construction	1,925,000	845,000
Design/Architectural Consultation	85,000	-
Direct Project Management	57,000	-
Project Evaluation	24,000	-
TOTAL	$3,780,621	$1,345,000

Grand Total	$5,125,621
Rounded	$5,126,000

While the amount of funding formally authorized for the project remains $3.5 million, the Africa Bureau has to date alloted to USAID/Yaounde the full amount of $5.126 million as requested in the PP Revision. These allotments have, in each instance, been in full accord with the then current Congressional Presentation, Operational Year Budget and USAID/Yaounde's Annual Budget Submissions.

It is recommended that your authorization of the increase in total AID funding from $3.5 million to $5.126 million be made retroactive to the end of Fiscal Year 1976, at which time the original five-year authorization expired. Furthermore, your approval of this

Action Memorandum will constitute express approval for USAID/Yaounde to obligate $1,345,000 of Fiscal Year 1978 funds which have already been alloted to the field but not obligated. Funding for Fiscal Year 1978 will be from the FAA Section 104 functional account as follows:

Population	$430,000
Health	915,000
TOTAL	$1,345,000

The revised CUSS life-of-project financial requirements for Cameroon and other donors are as follows:

	Million $US	% Total
Cameroon	$23.650	58.86
France (FAC)	6.870	17.10
USAID	5.126	12.76
Canada (CIDA)	2.430	6.05
WHO/UNDP	2.100	5.23
Total*	$40.176	100%

* The major increases in costs since 1971 primarily reflect a much expanded program at CUSS and a greater recognition of GURC's major contribution to this project.

F. Technical, Environmental and Human Rights Considerations

1. FAA Sections 611(a) and 611(e). The CUSS hospital facilities are completed and the costs for the construction overrun are firm. The conditions of Section 611(a) are therefore satisfied. The Acting Director, USAID/Cameroon, has submitted the requisite Section 611(e) certification and it is considered satisfactory.

2. The Initial Environmental Examination resulted in a recommendation for a Negative Determination with no further environmental analysis necessary.

3. There are no adverse human rights implications with respect to Cameroon or the CUSS Project.

G. Conditions Precedent to Disbursement

The amended Project Agreement with the GURC will preclude the disbursement of any funds for, or related to, the hospital construction overrun portion of the project prior to the submission by the GURC to AID, in form and substance satisfactory to AID, of the following:

1. A comprehensive maintenance plan, including proposed staffing therefor , for the newly constructed CUSS hospital including the structure itself and the equipment installed therein.

2. Evidence of an adequate budget allowance to support the maintenance plan.

H. Implementation

The CUSS project is under the overall control of the Ministry of National Education acting through the Director of CUSS.

I. Committee Action and Congressional Apprisement

1. The project was reviewed at a Project Committee meeting on July 25, 1978 and reviewed and approved at an ECPR meeting, chaired by yourself, on August 30, 1978.

2. The Congress was apprised of this project in the Fiscal Year 1978 Congressional Presentation. It has been determined that no further information need be provided to Congress prior to the obligation of $1,345,000 in Fiscal Year 1978 funds.

J. Project Officers

The responsible officer in USAID/Cameroon will be Frederick E. Gilbert, Project Manager/Acting Mission Director. The AID/W backstop officer will be Ted G. Lee, AFR/DR/CAWARAP.

III. RECOMMENDATION:

That you sign below thereby:

A. Approving the PP Revision submitted by USAID/Yaounde;

B. Approving continuation of the project through Fiscal Year 1979, for purposes of implementation;

C. Approving, retroactive to the end of Fiscal Year 1976, an increase in total AID funding for the project from $3,500,000 to $5,126,000; and,

D. Authorizing USAID/Yaounde to obligate, with disbursement of construction funds subject to the conditions set forth in paragraph II.G above, $1,345,000 of Fiscal Year 1978 funds.

It is also recommended that you approve the Negative Determination recommendation in the PP Revision, Annex C-4, the Initial Environmental Examination, by signing in the space provided therein.

APPROVED _____

DISAPPROVED _____

DATE 9/22/78

ATTACHMENTS:

A. Action Memorandum for the Administrator, dated October 8, 1971

B. PP Revision

CLEARANCES:

AFR/DR/CAWARAP	:GThompson	(draft)
AFR/DR/HN	:MKirby	(draft)
AFR/DR/POP	:CBelcher	(draft)
AFR/DR/SDP	:RNixon	(draft)
AFR/DR/ENGR	:WDavies	(draft)
AFR/CAWA	:DGriffith	(draft)
AFR/DP	:EDonoghue	(draft)
DS/H(consultant	ITaylor)	(draft)
GC/AFR	:EDragon	
DAA/AFR	:WHNorth	

DRAFT:AFR/DR/CAWARAP:TGLee:mjb:9/22/78:29066

OCT 3 1971

ACTION MEMORANDUM FOR THE ADMINISTRATOR

THRU: ~~EXSEC~~ OCT 12 01 AM '71

FROM: AA/AFR, Samuel C. Adams, Jr.

Problem: University Center for Health Sciences (CUSS) 625-11-550-531, request for PROP approval is made for this project.

Discussion: In the proposed project AID will actively contribute to helping in the development of a training system in Central Africa for medical services which combine family planning with maternal and child health care. Focusing on child spacing and maternal and child health, the project is part of a larger multi-donor regional program to assist in the establishment of a Center for Health Sciences, to be part of the Federal University of Cameroon. The work of the Center will be supplemented by pilot training projects located initially in Chad and the Central African Republic. All elements of the Center's program are intended to emphasize preventive and community medicine and development of a team approach to medical services which will result in maximum benefits from the limited health personnel and funds available in Central African countries. The Center will include teaching facilities, a small teaching hospital, and a public health institute and outpatient clinic. Doctors, nurses, and medical assistants will be trained.

Staff support will be provided by AID through a contract for the services of an obstetrician/gynecologist, a pediatrician, a nurse/midwife, and a public health nurse or nurse practitioner. The U.S. faculty will be selected with an emphasis on expertise in community medicine and integration of public health and clinical medicine.

The CUSS Project is planned to encompass the following three main groups of buildings: (1) a biomedical sciences unit consisting of a laboratory building and an administration building containing offices, cafeteria and a 300 seat amphitheater, (2) a 150 bed hospital and (3) housing in the form of individual and multi-dwelling units. AID is proposing to finance the following portion of the construction:

A. Outpatient department for adults which will provide consultation offices, examination rooms, conference rooms, laboratory and staff rooms.

B. This outpatient department will make available all pediatric and maternity outpatient services and will also have a dental office, pharmacy, demonstration offices, and movie projection facilities.

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C. Pediatric wing will provide space for 30 beds and all related pediatric ward services.

D. Maternity wing will make available space for 30 beds as well as all other maternity and ward services.

A formal review of the project was held that included representatives from the Africa Bureau and the Technical Assistance Bureau. All issues raised at the meeting have been resolved to the satisfaction of the participants in the meeting.

The requirements of Section 611 of the Foreign Assistance Act of 1961 have been satisfied, (see Appendix E). The West Africa Capital Development Office of the Africa Bureau will have responsibility for assuring successful implementation of construction activities.

Total AID life of project costs for Technical Assistance and construction are estimated at $3.5 million over a five year period. Both TA and construction costs will be grant financed from population, (Title X) funds. Other donor contributions - GFRC $2 million, France $2 million, Canada $1 million and WHO $500 thousand.

Recommendation: It is requested that you indicate your approval of this project by signing the attached Project Authorization.

Approved: John Hamilton

Disapproved: ( )

Date: Oct 12 - 1971

AFR/CWR:JDWilson:kj:8/24/71

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Attachments:
1. Project Authorization
2. PROP for University Center for Health Sciences

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Appendix A	Predictions of the next five years
Appendix B	Some notes on "The Yaounde Curriculum"
Appendix C	The Beginnings of the University Center for Health Sciences
Appendix D	Educational Objectives for Medical Studies
Appendix E	611 Requirements
	Socio-Economic Analysis for University Center for Health Sciences
	Engineering Analysis for University Center for Health Sciences
	Certification Pursuant to Section 611(e)
Appendix F	Preliminary PERT Chart

AID 1025-1 (7-71) (FACE SHEET)
NONCAPITAL PROJECT PAPER (PROP)

Attachment A to M.O. 1025.1
(TL 9:172)

PAGE 1 of __ PAGES

I. PROJECT IDENTIFICATION

P.A. No. 0201

1. PROJECT TITLE: University Center for Health Sciences

APPENDIX ATTACHED: ☐ YES ☒ NO

2. PROJECT NO. (M.O. 1095.2): 625-11-550-531

3. RECIPIENT (specify): ☐ COUNTRY ☒ REGIONAL AFR/CWR ☐ INTERREGIONAL

4. LIFE OF PROJECT: BEGINS FY 72 ENDS FY 76

5. SUBMISSION: ☐ ORIGINAL 8/24/71 DATE ☐ REV. NO. ____ DATE

CONTR./PASA NO.

II. FUNDING ($000) AND MAN MONTHS (MM) REQUIREMENTS

A. FUNDING BY FISCAL YEAR	B. TOTAL $	C. PERSONNEL (1) $	C. PERSONNEL (2) MM	D. PARTICIPANTS (1) $	D. PARTICIPANTS (2) MM	E. COMMODITIES $	F. OTHER COSTS $	G. PASA/CONTR. (1) $	G. PASA/CONTR. (2) MM	H. LOCAL EXCHANGE CURRENCY RATE: $ US ____ (U.S. OWNED) (1) U.S. GRANT LOAN	(2) COOP COUNTRY (A) JOINT	(2) COOP COUNTRY (B) BUDGET
1. PRIOR THRU ACTUAL FY	275	135	17	60	126		80					
2. OPRN FY	1490	310	53	80	147		1100					
3. BUDGET FY	1105	280	50	80	147		745					
4. BUDGET +1 FY	360	280	50	80	147							
5. BUDGET +2 FY	270	270	48									
6. BUDGET +3 FY												
7. ALL SUBS. FY												
8. GRAND TOTAL	3.5	1.275	218	300	567		1.925*					

*Construction Costs

9. OTHER DONOR CONTRIBUTIONS

(A) NAME OF DONOR	(B) KINDS OF GOODS/SERVICES	(C) AMOUNT
France	Construction	$2,000,
Canada	Construction and Faculty Support	$1,000,
WHO	Faculty Support, Training & Equipment	$500,

III. ORIGINATING OFFICE CLEARANCE

1. DRAFTER: James D. Wilson, Jr.	TITLE: Yaounde Area Desk Officer	DATE: 8/24/71
2. CLEARANCE OFFICER: Fermino J. Spencer	TITLE: Director, AFR/CWR	DATE: 8/24/71

IV. PROJECT AUTHORIZATION

1. CONDITIONS OF APPROVAL

None

2. CLEARANCES

BUR/OFF.	SIGNATURE	DATE	BUR/OFF.	SIGNATURE	DATE
TA/POP	WBoynton (Draft)	9/23/71	AFR/CDF	ADisider (draft)	9/10/71
AFR/DP	EHogan		AFR/TAC	AHoward (draft)	9/9/71.
AFR/GC	M. Kistler	9/30/71	PPC		

3. APPROVAL AAs OR OFFICE DIRECTORS

SIGNATURE: Samuel C. Adams, Jr. DATE:

TITLE: Assistant Administrator, Africa Bureau

4. APPROVAL AAID (See M.O. 1025.1 VI C)

SIGNATURE: John A. Hannah DATE: 10-12-71

TITLE: ADMINISTRATOR, AGENCY FOR INTERNATIONAL DEVELOPMENT

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PROJECT PAPER
(Revision)

UNIVERSITY CENTER FOR HEALTH SCIENCES
(C U S S)

631-0531

Drafter: Albert E. Henn, M.D., M.P.H.

Approved by: Frederick E. Gilbert
Acting Director, USAID/Cameroon

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H. Harvard Contract Budget Request July 1, 1977 - June 30, 1978
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AGENCY FOR INTERNATIONAL DEVELOPMENT

A. PROJECT PAPER FACESHEET

1. TRANSACTION CODE: C (A = ADD, C = CHANGE, D = DELETE)

PP

2. DOCUMENT CODE: 3

3. COUNTRY/ENTITY: CAMEROON

4. DOCUMENT REVISION NUMBER: 1

5. PROJECT NUMBER (7 digits): 631-0531

6. BUREAU/OFFICE: A. SYMBOL: AFR; B. CODE: 6

7. PROJECT TITLE (Maximum 40 characters): UNIVERSITY CENTER FOR HEALTH SCIENCES

8. ESTIMATED FY OF PROJECT COMPLETION: FY 79

9. ESTIMATED DATE OF OBLIGATION: A. INITIAL FY 72; B. QUARTER 4 (Enter 1, 2, 3, or 4); C. FINAL FY 78

10. ESTIMATED COSTS ($000 OR EQUIVALENT $1 –)

A. FUNDING SOURCE	FIRST FY B. FX	C. L/C	D. TOTAL	LIFE OF PROJECT E. FX	F. L/C	G. TOTAL
AID APPROPRIATED TOTAL	195	80	275			
(GRANT)	(195)	(80)	(275)	(2,271)	(2,855)	(5,126)
(LOAN)	( )	( )	( )	( )	( )	( )
OTHER U.S. 1.						
OTHER U.S. 2.						
HOST COUNTRY	3,560.0	2,352.5	5,912.5	9,968	13,682	23,650
OTHER DONOR(S)	1,010.75	–	1,010.75	10,227	1,173	11,400
TOTALS	4,765.75	2,432.5	7,198.25	22,466	17,710	40,176

11. PROPOSED BUDGET APPROPRIATED FUNDS ($000)

A. APPROPRIATION	B. PRIMARY PURPOSE CODE	PRIMARY TECH. CODE C. GRANT	D. LOAN	E. 1ST FY 72 F. GRANT	G. LOAN	H. 2ND FY 73 I. GRANT	J. LOAN	K. 3RD FY 74 L. GRANT	M. LOAN
(1) PH		560		275		1,490		1,105	
(2)									
(3)									
(4)									
			TOTALS	275		1,490		1,105	

A. APPROPRIATION	N. 4TH FY 75 O. GRANT	P. LOAN	Q. 5TH FY 76 R. GRANT	S. LOAN	LIFE OF PROJECT T. GRANT	U. LOAN
(1) PH	170		648		5,126	
(2)						
(3)						
(4)						
TOTALS						

12. IN-DEPTH EVALUATION SCHEDULED: MM 12 YY 78

13. DATA CHANGE INDICATOR. WERE CHANGES MADE IN THE PID FACESHEET DATA BLOCKS 12, 13, 14, OR 15 OR IN PRP FACESHEET DATA, BLOCK 12? IF YES, ATTACH CHANGED PID FACESHEET.

1 (1 = NO, 2 = YES)

ENPO AEH
PRM
CONT
MGMT

14. ORIGINATING OFFICE CLEARANCE

SIGNATURE: Frederick E. Gilbert

TITLE: Acting Director, USAID Cameroon

DATE SIGNED: MM DD YY

15. DATE DOCUMENT RECEIVED IN AID/W, OR FOR AID/W DOCUMENTS, DATE OF DISTRIBUTION: MM DD YY

AID 1330-4 (3-78)

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PART I - RECOMMENDATION, DESCRIPTION AND ISSUES

B. INTRODUCTION

The original project paper (PROP) for the University Center for Health Sciences (CUSS) Project was written in 1971 before the widespread use of the logical framework as the basis for program design and before the adoption of the present project paper (PP) format. Although the earlier PROP did not enumerate the assumptions inherent in the design of the project, the intervening period has shown that, while the principal assumptions appear to have been valid, certain others were erroneous.

With the project nearly completed, the rationale for submitting a revised basic project document is to secure authorization for the changes which occurred in the project as experience was gained and the ever-changing needs of CUSS were better understood. The revised Project Paper should also provide a more appropriate reference for final project evaluation than the original 1971 PROP which was drafted several years before the project began.

This document responds specifically to the recommendations made by the "mid-project" evaluation team cited in their report submitted in June 1977. The thrust of these recommendations include:

1. USAID provide a full four years of faculty support to the CUSS MOH teaching program;

2. Harvard team technicians emphasize their advisory contribution to help shape CUSS policy, especially regarding the new CUSS outpatient clinics, instead of simply meeting clinical services requirements.

3. Extension of project through FY1979 (project completion date FY1979; however, final obligation date is FY1978) to permit an expansion of the project activities to include preparation and production of a bilingual Public Health Nursing text for West and Central Africa, and the addition of a contract technician to be primarily responsible for this text production activity.

C. RECOMMENDATIONS

1. This Project Paper provides for the continuation of the CUSS Project as described herein. It calls for total USAID obligations of $5,126,000 in grant funds.

2. It is recommended that the CUSS Project be continued along the lines described in the original PROP as modified herein with an extension of the life of the project through FY1979. (This date pertains to the completion date of the project; however, last year of obligation is still FY1978).

3. It is recommended that USAID contribute to the financing of the cost overruns incurred during hospital construction, and that the USAID pay 25% of the overruns as was the USAID share of the original construction costs. The USAID overrun contribution, which was determined following post-construction settlement negotiations, is $845,000. The construction cost overrun has been subjected to technical analysis and meets 611(A) and 611(E) certification requirements. Supporting documentation is included in Annex C-2.

D. DESCRIPTION OF THE PROJECT

1. This project provides grant assistance to the University Center for Health Sciences (CUSS) in the form of:

a. Eighteen (18) work/years of technical assistance to the CUSS faculty. The project will provide two physicians and two nurses to demonstrate the team approach to the teaching and delivery of maternal and child care, and one public health nurse to edit a bilingual public health nursing text;

b. Support for the training of non-Cameroonian students at CUSS and participant training of CUSS faculty and other health professionals in areas relevant to maternal and child care in Africa;

c. Provision of 25% of the costs of building the new 150-bed University Teaching Community Hospital.

2. The project is managed by the USAID/Cameroon and the activities are carried out as follows:

a. Technical assistance to CUSS is provided through a contract with Harvard University. This contract calls for the provision of the health professionals cited above who are responsible for effecting maternal-child health teaching, service research activities of the project and producing a public health nursing text; the provision of short-term consultants; and the management of selected participant training activities.

b. USAID/Cameroon manages selected participant training activities, and CUSS manages the scholarship program for non-Cameroonian students.

c. The Government of Cameroon (GURC) is responsible for managing the construction activities of this project. These activities are also monitored by the Mission and REDSO/WA. USAID/Cameroon coordinates the use of AID-funded architectural consultation.

3. A brief overview of the Harvard-CUSS technical assistance effort from 1974-1978 follows:

The purpose of the Harvard-CUSS Project is to provide technical assistance in terms of money and manpower to the new medical school (CUSS) which opened its doors in October 1969. The specific goals of the project are to help develop a teaching, research and service program in maternal-child health.

The first team consisted of Dr. Noel Guillozet, Pediatrician and team leader; Dr. Pierre Drouin, Obstetrician; Nancy Garrett, Pediatric Nurse with a public health background; and Lise Cousineau, Nurse-Midwife with family planning experience. This team worked together in Yaounde from October 1974 through June 1976. They helped develop a curriculum in maternal-child health for medical students and initiate a number of clinics held at the CUSS Pavilion at the Central Hospital (a new building designed for ambulatory care and student teaching). These clinics include high-risk pregnancy, postpartum care, well-child care, child spacing, nutrition, immunizations and pediatric consultations. They are used for teaching, service and research. A student laboratory and reference library were also set up in this facility by the first technical assistance team. The faculty team further supported maternal-child health activities in a nearby rural clinic in Mvolyé, opened by a member of the community medicine department, Dr. Gladys Martin. Project funds were provided to allow CUSS faculty members to visit various programs at Harvard for several months and to provide graduate training for selected health professionals in public health, family care and family planning programs in the United States and Lagos. These programs were all well under way in the spring of 1976 when the new maternal-child ambulatory section of the CUSS Community Hospital was completed.

In June of 1976, three of the team members departed leaving Lise Cousineau. She was joined by Dr. Rainer Arnold, the second Pediatrician and team leader, and Susan Colgate, a Nurse-Midwife. An Obstetrician could not be found to replace Dr. Drouin in 1976.

During the academic year 1976-77, these three technicians 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 some loss of momentum and curtailment of the previously established programs (e.g. 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. Arnold was replaced by another Pediatrician, Dr. Robert Chamberlin, Dr. John Naponick, an Obstetrician, also joined the team, and Susan Colgate and Lise Cousineau remained. Again it was hoped that the Harvard team would be able to move and expand the present maternal-child health activities into the new ambulatory setting, but again failure to resolve jurisdictional disputes over who would control the hospital has prevented most of the facility from opening for another year. 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 Obstetrics and Pediatric Departments.

However, in February 1978, after considerable negotiations, it was possible to move the biweekly child-spacing clinic and the monthly immunization clinic to the new Outpatient Department. These clinics were allowed to operate in the new hospital 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.

In spite of these setbacks, progress in other areas has been made. The family planning clinic has been taken over completely by Cameroonian Mid-wives and is running well on its own. Plans have also been formulated to write a bilingual textbook in public health nursing, and this is well under way. This activity is being directed by Jeanne Carriere, who joined the project in October 1977. She and Susan Colgate are collaborating on the textbook with Mme. Jato and Mme. Moumlom, 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. Carriere will remain in Cameroon to finish the textbook by June 1979, at which time the Harvard contract will end.

E. PROJECT ISSUES

The basic project issues were addressed during the preparation of the original project document in 1971. These issues concerned, inter alia, the need of the region for trained health workers, the quality of the institutional design, the availability of staff and financial resources, and technical soundness of the construction plans. In the intervening five years, other issues have surfaced which have warranted USAID attention. These include:

1. Source of Funding

The first of these issues concerns whether the CUSS Project should continue to be financed with Title X funds. The project was originally entirely funded with money ear-marked for population programs. The rationale behind this decision was that in Africa family planning would only be accepted as an integral part of the comprehensive maternal and child health program.

In 1974, Dr. Boynton of PHA/POP evaluated this project as a family planning activity and, on the basis of there being no active contraceptive activities in the project, he recommended that Title X funds no longer be used to support the project. It should be noted that Dr. Boynton's evaluation of the project's family planning impact was made just a few months after the arrival of the first project technician and before project activities had been developed. The project now has an active family planning component of its integrated maternal and child health program, and PHA/POP has agreed to continue to finance 25% of project costs.

2. Participant Training

A second issue which developed concerns the inability of CUSS to nominate candidates for the participant training provided for by the project. Project participant training was originally limited to public health degree programs or clinical specialty training. This proved to be inappropriate because there were more qualified clinical specialists

returning to Cameroon than had been expected at the time of project design, and because CUSS could not spare its teaching personnel for such long periods of time. The participant training element of the project is modified herein to include support of short-term training, seminars and workshops, and visits to similar African training programs.

3. Life of Project

The third issue relates to the fact that the contract with Harvard University was not signed until November 1973, and the full team of project technicians was not in Yaounde until the beginning of the 1974-1975 academic year. In order to permit the provision of four academic years of faculty support to CUSS, as called for in the PROP, this PP calls for the extension of project MCH training activities for one additional year through FY1978 and extends the life of project through FY1979 to permit completion of the bilingual public health nursing text.

4. Construction Budget

The main project issue at this time concerns the cost of the construction elements of the project as described in the PROP. Although inflation and dollar devaluation have resulted in some increases in the technical assistance and training aspects of the project, the most remarkable increase in project costs is due to the increase in the cost of building the CUSS hospital.

When the original bids for the construction contract were received, none were accepted because they were all thought to be much too high. In prolonged negotiations with the construction firms, a much lower price of $7,660,000 was finally agreed upon, a contract was signed and construction was begun. Although the hospital itself is being built in accordance with the original design, the combined effects of world-wide inflation, the oil crisis and devaluation of the dollar has led to a total cost-overrun of $3,371,670.

On January 12, 1976, USAID/Cameroon received an official request from the Government of Cameroon to participate in the financing of the cost-overruns. The official USAID/Cameroon response to GURC's request was that all cost-overruns should be considered in post-construction negotiations with the contractors. USAID/Cameroon encouraged GURC in the meantime to pressure contractors to minimize their expenses.

USAID/Cameroon recommends, and has included in the budget projections of this document, that USAID participate in the financing of the cost-overruns to the extent necessary to contribute 25% of the overall cost of the hospital construction. Although previous project documentation clearly places a limit of $1,925 million on the USAID contribution, while holding the Government of Cameroon responsible for all cost overruns, USAID, FAC, and GURC entered into the project in the spirit of providing 25%, 25% and 50% respectively. Since the relevant cost increases exclude all costs related to changes in the original scope of the project, the USAID/Cameroon recommends that USAID provide 25% of the total costs including cost overruns, and, for this purpose, $845 thousand in FY1978 funds has been added to the project budget construction component.

5. Mobile Equipment

Another project issue concerns the financing of mobile equipment for the new CUSS hospital. All previous project documentation limits USAID's equipment financing to certain fixed equipment costs and states that all mobile equipment would be financed by FAC and GURC. These expectations notwithstanding, USAID/Cameroon has received an official GURC request to finance 50% of the mobile equipment costs which are currently projected at a total of over $4 million. The GURC has also requested that FAC contribute the other 50%.

USAID/Cameroon has responded to the GURC request saying that USAID would not participate in the financing of mobile equipment. We understand the Government has been successful in securing other sources of finance to complement the existing FAC commitment.

6. Hospital Maintenance

USAID/Cameroon has been concerned by the fact that GURC delays in defining administrative authority over the hospital have resulted in inadequate building and equipment maintenance to date. It is the USAID/Cameroon intention to make the development of an acceptable maintenance program a prerequisite to disbursement of funds for the construction cost overrun.

PART II - PROJECT BACKGROUND AND DETAILED DESCRIPTION

A. PROJECT BACKGROUND

Prior to the initiation of this project, Cameroon had health problems typical of a low-income, largely agrarian, developing country in tropical Africa. Existing health services had followed the pattern seen in most former French colonies with emphasis on the separation of curative medicine (with fixed facilities, such as dispensaries, health centers and hospitals) from public health and preventive medicine (with mobile facilities such as the Service des Grandes Endémies). Against a background of severe budgetary limitations and scarcely trained health manpower, this approach was costly, reached only a fraction of the population in need of services, and was unable to achieve the synthesis of public health and curative medical activities that is necessary to gain reasonable benefits from resources invested in the health sector. Cameroon, as most other African countries, was also faced with the fact that most of its qualified health professionals were trained in developed countries where the curricula were not appropriate for tropical medical problems or the resources constraints of LDCs.

This was the situation when Cameroon began to consider the establishment of a regional institution for the training of physicians and other health workers in a fashion relevant to the African setting, with emphasis on public health and preventive medicine, and with implications for the extension of low cost methods of health service to the entire population.

In 1963, the Cameroon Government approached the World Health Organization (WHO) for assistance in studying the development of a medical school. That same year WHO published its Report on the Possibility of Establishing a Medical School in Cameroon recommending the creation of a university medical school and an affiliated teaching hospital. At that time, Gabon, Central African Republic (CAE), and Chad expressed their interest in participating in the creation of a regional medical school designed to respond to Central African needs. Chad, however, also noted its inability to contribute financially to the venture. (It should be noted that these expressions of support did not materialize as both Gabon and the CAE subsequently decided to develop their own medical schools rather than support CUSS). Today CUSS functions as a Cameroonian training institution, but it leads the field of Central African health training centers and sets an example which all its neighbors observe with great interest.

In 1965, a planning committee was established which comprised of representatives of the Ministries of Health, Education, Economy, and Finance, as well as WHO, and the following year this committee recommended a project for the establishment of a combined school of medicine and pharmacy. This proposal was then the object of a series of feasibility studies and consultations by WHO, bilateral and international agencies. These culminated in the 1968 report of a joint WHO/UNDP Special Fund Preparatory Assistance Mission which recommended the establishment of the University Center for Health Sciences (CUSS), the objective of which would be the development of a high-level, multiprofessional teaching

program which would combine in one institution the education of all members of the health team with curricula specifically adapted to the health problems of African countries. The WHO/UNDP proposal called for three phases of CUSS development as follows:

Phase 1: January - October 1969: Completion of planning, development of curricula and preparation of architectural plans.

Phase 2: November 1969 - October 1972: Completion of basic sciences buildings, beginning of training and beginning of teaching hospitals construction.

Phase 3: November 1972 - December 1975: Completion of hospital construction evaluation and revision of objectives and curricula.

It was expected that the Government of Cameroon would assume full support of CUSS as of January 1976.

These recommendations were accepted by the Government of Cameroon, which made a formal request for UNDP assistance in the creation of CUSS. The UNDP approved the project in January, 1969; CUSS was created by presidential decree in June, 1969; and the first class of medical students began training in October, 1969. In June 1970, the UNDP also approved the financing of Phase 2, which was then scheduled to run from August 1970 for three years (UNDP has also approved funding of Phase 3, but the time period has changed to November 1975 through August 1977).

French assistance (FAC) pledged support to construction and equipping of the teaching hospital, faculty support, and student scholarships; and, in November 1970, USAID was requested to contribute to the hospital construction, technical assistance and faculty training activities of CUSS.

The latter request led to a project design effort which resulted in the original PROP, approved in October 1971.

The USAID PROP described a project having five basic elements:

1. Construction of the teaching hospital's outpatient department, maternity wing and pediatric wing;

2. Provision of 16 work/years of faculty support to the CUSS maternal and child health program;

3. Provision of 15 study/years of training in public health or clinical specialties related to community medicine for CUSS faculty;

4. Involvement of the USAID Project Manager in the service activities of CUSS;

5. Short-term consultants in community health and medical education.

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The project Grant Agreement providing the first $2.5 million of the projected USAID funding of $3.15 million was signed in December 1971, but contract negotiations and the bidding procedures for construction delayed the signing of the technical assistance contract with Harvard University until November 1973 and the beginning of construction until May 1974.

In the meantime, in 1972, the Canadian International Development Agency (CIDA) provided funds for the construction of the CUSS public health pavilion, technical assistance professionals to the public health division and participant training funds for CUSS faculty to receive public health training. The Public Health Pavilion was built in 1973, and the Canadian technical assistance was phased out in 1978 after the scheduled six years of assistance to the CUSS. The Canadian funds set aside for participant training have been essentially unused.

During the first nine years of CUSS operations, UNDP/WHO,FAC, CIDA, and USAID have assisted GURC by providing construction funds, technicians and training funds as described above. This period has seen the CUSS grow from an institution addressing primarily physician and nurse training to one in which more and more members of the health team are trained. New programs at CUSS include those for several varieties of technicians, medical educators and health educators. CUSS will also play an important role in the training of paramedical clinicians through its participation in the MEDCAM Project to begin in 1979, and in providing primary health care consultation through its involvement with the Strengthening of Health Delivery Systems Project.

Since the arrival of this project's first technician in November 1973, the Harvard team has developed a maternal and child health training program for CUSS students and established itself as a teaching demonstration of the team approach to maternal and child health services and research. Although difficulties in recruiting the project technicians delayed the input of a complete team until academic year 1974-1975, the team, which consists of a Pediatrician, an Obstetrician, a Public Health Nurse and a Nurse/Midwife, has subsequently been active in establishing CUSS-sponsored preventive maternal and child health services at the Central Hospital in Yaounde. In addition, the project has been conducting research to define the baseline data (e.g. normal childhood growth curves for Cameroon) for the communities being served and to demonstrate the impact of the preventive practice of community medicine upon a defined population. The activities of the project team at CUSS are described in the mid-project progress report submitted by the campus coordinator in September 1975 (Annex E). This report and the Campus coordinator's report and the proposed budget of July 1977 (Annex H) recommend further consolidation of the maternal and child health program as it is transferred in 1978 from the Central Hospital to the new CUSS teaching hospital. It has also been recommended that greater use be made of the short-term participant training, short-term consultation and teaching materials purchasing capacities of the project to prepare for the phase-out of project technical assistance by the end of FY1979.

In 1974, UNDP/WHO conducted a mid-project review which found that CUSS had realized most of the objectives of Phase 2, including integrated training of health worker teams, rural training at sites well-removed

from the capital, and the successful involvement of CUSS faculty in development of an African-based integrated training program. However, this report concluded that CUSS would require further financial assistance if it were to become self-sufficient and operated entirely by Cameroonian personnel. Thus, UNDP/WHO has planned to continue its support and give additional attention to two problem areas: management and administration, and transport.

In connection with the mid-project evaluation, the effectiveness of the first two academic years of USAID project support to CUSS was discussed in detail between the CUSS direction, project technicians and USAID/Cameroon. These discussions resulted in agreement that the project should be continued along present lines to provide the four academic years of faculty support originally envisaged and to permit CUSS to take over project activities with Cameroonian technicians.

In 1975, the first class of 29 CUSS-trained physicians graduated and were assigned by the Cameroon Ministry of Health to rural posts. The assignments of subsequent graduates further demonstrated Cameroon's commitment to place a high priority on the development of rural health services. The next few years of CUSS's development promise to be exciting as the institution begins to get feedback from its own graduates and has the opportunity to modify its curriculum accordingly. This project is contributing to this feedback phenomenon by providing funds to support post-graduate seminars.

In 1977, Wolfe and Company and Oudens & Knoop Architects and Planners were employed by USAID to conduct a mid-project evaluation of USAID support to CUSS. Essentially, these evaluation reports stated that project activities had had the desired effects and that emphasis should be placed upon activities which enhanced the institutionalization of project activities by CUSS. The summary of the findings and recommendations of these reports is presented in Annex G.

B. DETAILED DESCRIPTION

The University Center for Health Sciences (CUSS) was planned as an integrated, tripartite institution with training capacities in the biomedical sciences, public health and clinical medicine. The physical structures of this institution were to include an administrative building, basic sciences buildings, a public health pavilion and a 150-bed community teaching hospital. CUSS was to identify a community of approximately 30,000 people in the Yaounde area to serve as a base for research training and service delivery.

The USAID Project described in the original PROP sought to assist and strengthen the CUSS and its philosophy, in close cooperation with other donors, and to introduce child spacing and family planning through the promotion of maternal and child health. This PP is designed to continue the CUSS Project while making certain changes in project design to reflect current CUSS needs and experience gained during the first years of the project. The principal changes include:

1. Extension of the project through FY1979;

2. Retention of two technicians during FY1979 to complete work on production of a bilingual Public Health Nursing text for West and Central Africa;

3. Provision of funds for technician travel;

4. Modification of participant training guidelines to permit some degree of management by USAID/Cameroon and to permit short-term training;

5. Increased funds for research and medical supplies;

6. Provision for conducting annual seminars at which recent CUSS graduates can provide feedback to the institution after working in the field;

7. Provision of funds to permit USAID to participate in the overruns in the cost of constructing the CUSS community teaching hospital up to an amount not to exceed 25% of the total.

The CUSS Project, as revised, is presented in the following narrative synopsis of the logical framework matrix:

Sector Goal

This project is expected to contribute substantially to the efforts of the Government of Cameroon to extend the accessibility of the national health care delivery system, emphasizing preventive medicine in maternal and child health, to 80% of the population by 1980.

Measures of Goals Achievement

1. 80% of the population have access* to the health care system by 1980;

2. 50% of the population are reached by some form of health care by 1980, e.g.:
   a. health education programs;
   b. preventive medicine programs;
   c. curative medical services.

3. Health units benefiting from presence of CUSS graduates are effecting improvements in the health of the communities served, e.g.:

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* Note the distinction between "having access" and "being reached". The former does not guarantee any benefit to the population. The MEDCAM Project will ultimately extend health services to the point where the entire population is actually reached-affected.

a. significantly better maternal and child morbidity and mortality rates than in similar ("control") centers without CUSS graduates;

b. documented downward trend in above statistics where CUSS graduates are working.

4. Non-CUSS graduates adopt new practices as a result of being influenced by CUSS graduates.

5. An increased number of rural clinics are actively involved in community health projects.

Means of Verification of Goal Achievement

1. The 1976 census data coupled with the Ministry of Health statistics.

2. Ministry of Health, Grandes Endémies and clinic or health unit records.

3. A specific impact study will be required using health units without CUSS graduates for comparison.

4. Part of above impact study.

Assumptions Affecting Long Term Benefits

1. Both the government and CUSS will continue to place a priority on improving rural health services.

2. Development in other sectors will proceed correspondingly.

3. Medical technology will keep pace with disease evolution.

4. Related activities:

a. USAID:
   1. MEDCAM Project
   2. Strengthening of Health Delivery Systems Project
   3. Practical Training for Health Education Project
   4. African Health Training Institutions Project
   5. Center for Educational Development for Health Project

b. Others:
   1. CDC Immunization Project
   2. World Fertility Survey
   3. UNFPA Census Project

End of Project Status (EOPS)

Effectiveness:

1. Number of qualified graduates:
   a. Cameroonian medical doctors
   b. Non-Cameroonian medical doctors
   c. Cameroonian public health nurses
   d. Non-Cameroonian public health nurses
   e. Other
2. Number of research reports completed on MCH:
   a. Harvard Team
   b. CUSS faculty
   c. Students advised by Harvard Team inclusive of thesis
3. Family planning:
   a. Change in faculty attitudes towards teaching family planning
   b. Hours in curriculum for teaching family planning
   c. Change in government policy re child spacing
4. Number of new MCH teaching clinics in operation by CUSS:
   a. New CUSS Hospital
   b. Mefou outreach services
   c. Other CUSS training sites

Means of Verifying EOPS

1. CUSS graduation statistics
2. CUSS research records
3. Combination of CUSS and GURC records and survey of Cameroonian health workers
4. CUSS service records

Assumptions Affecting Purpose - Goal Link

1. Any student certified as qualified will have been assessed as such on the basis of examinations testing for knowledge necessary for the management of most common African health problems.

2. Materials and funding are available for research.

3. Government cooperation continues and materials such as contraceptives are made available.

4. Funding continues to be available for remote site demonstrations. CUSS continues to stress MCH in curriculum and makes available commodities and materials.

Outputs

1. CUSS Maternal and Child Health demonstration program developed and functioning as an integral part of the medical training service and research program.

2. Family Health Outpatient and Pediatric facilities built and functioning as integral parts of the CUSS Community Teaching Hospital.

Magnitude of Outputs Necessary to Achieve Purpose

1. MCH clinics organized and operating:

   - Ante-natal clinics
   - Post-partum clinics
   - Child-spacing clinics
   - Well-baby clinics
   - High-risk clinics

2. MCH curriculum and instruction:

   - MCH health needs and health worker functions delineated
   - MCH instructional objectives developed

3. Research project in progress:

   - CUSS Faculty (No., Topics)
   - Harvard Team (No., Topics)
   - Student thesis (No., Topics)

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4. a. Coordinating mechanisms:

- Physician, nurse, para-med team work in MCH teaching, research, service
- Harvard technicians functioning as team
- Clinics organized for service and teaching
- Innovative teaching methods introduced
- Instructional materials, aids and equipment delivered and operational
- Valid and reliable MCH examination mechanisms developed and utilized
- Teaching: courses taught (No., titles)
  lectures given (No., titles)
  bedside teaching (Hrs/wk, No. students)
- Intra-institutional (committees and councils) No. meetings/yr

b. CUSS/MCH faculty on board

c. Community Hospital facilities operational

d. Faculty/staff development (No. of participants sent)

e. Non-Cameroonian scholarships (No./yr)

f. Feedback system operating (No. surveys/yr)

Means of Verifying Outputs

1. a. USAID records, CUSS records, curriculum review

b. Curriculum review

c. WHO tests, CUSS records

d. Clinic records

e. Research review, publications

f. Clinical records, US National Health Statistics

g. CUSS records and CUSS budget review

h. CUSS alumni meeting records

2. a. Construction records, site visit

b. Engineering report

c. Patient flow analysis, quality care review, student records.

Assumptions Affecting Output or Purpose Link

MCH clinics - CUSS/MOH continue to support MCH clinics with supplies, technical staff and administration.

MCH Curriculum and Instruction

1. Textbooks and medical instruments are available at prices which students can afford.

2. Demand for clinical services does not impede MCH teaching and research.

3. Educational planning and development expertise are available to CUSS/Harvard faculty.

4. Salary incentives do not impede utilization of Harvard teaching activities.

5. Student discipline and accountability are enforced.

Research Project in Progress

1. Demand for clinical services does not impede MCH teaching and development.

2. Comparative epidemiological and bio-statistical data are available.

Cooperation of Inter-Governmental agencies (MOH/MOE/CUSS)

1. MOH nurses (ENISFAY) and CUSS students are trained in common trunk courses and/or common facilities. Francophone, Anglophone, and traditional medicine differences are resolved.

2. CUSS Hospital is completed and provided with an adequate operational budget.

3. MOH/CUSS administrations nominate and support faculty participants (decrees and signatures forthcoming).

4. CUSS admission policy is favorable to accepting non-Cameroonians.

5. CUSS/MOH cooperation in planning, conducting, and reporting evaluation information.

Inputs

A. Eighteen work/years of technical assistance to CUSS MCH faculty via Harvard University contract:

1.	Pediatrician	5 work/years
2.	Obstetrician	3 work/years
3.	Nurse/Midwife	5.5 work/years
4.	Public Health Nurse	3 work/years
5.	Nursing Text Editor	1.5 work/years

B. Participant training (long and short-term).

C. Scholarships to non-Cameroonian CUSS students.

D. Financial and design support of construction of family health outpatient center and pediatric and maternity wings of CUSS community teaching hospital.

E. Direct Project Management.

F. Project evaluation.

Level of Expenditure for Each Input

A. USAID

1. Technical Assistance with Harvard University		$2,034,621
a. First Contract		
November 1973 - June 1976	$707,621	
b. Contract Modification No. 7		
Extension:		
June 1976 - June 1977	$489,000	
(Additional extension to Sept. 1977)		
c. Contract Extension:		
September 1977 - June 1978	$338,000	
d. Proposed Final Contract:		
June 1978 - June 1979	$500,000*	

* FY1978 ProAg items = total $1,345,000.

2. Direct Participant Training		$ 50,000**
3. Scholarships to Non-Cameroonian students for training at CUSS		$ 105,000
4. Design and Construction of CUSS hospital		$2,855,000
a. Original Construction Grant	$1,925,000	
b. 25% of projected cost overruns	$ 345,000*	
c. Design and architectural consultants	$ 85,000	
5. Miscellaneous		$ 81,000
a. Direct Project Management-1973	$ 57,000	
b. Project Evaluation (FY1977)	$ 24,000	
Life-of-Project Total Costs to USAID		$5,125,621
B. Other Donors:		
1. World Health Organization/UNDP (including faculty, trainees, equipment)		$2,100,000
2. Canada (CIDA) (Public Health Center and faculty)		$2,430,000
3. France (FAC) (Hospital Construction $3.4 Hospital Equipment $3.3 Technical Assistance $0.1)		$6,870,000
Total Other Donors		$11,400,000
C. Government of Cameroon (GURC)		$23,650,000
GRAND TOTAL		$40,175,621

* FY1978 ProAg items = total $1,345,000.

** Most Project Participants funded under Harvard contract.

Assumptions Affecting Input-Output Link

1. Harvard can recruit and maintain faculty team according to schedule.

2. Faculty team brings expertise required to perform tasks expected.

3. Curative duties of faculty team do not preclude effective teaching, research, and preventive medicine orientation.

4. Candidates are identified and processed for participant training.

5. Trained participants return to work in the health sector in Cameroon.

6. CUSS invites neighboring countries to use project scholarships.

7. Neighboring countries wish to use project scholarships.

8. USAID funding is available as expected.

9. Effects of inflation and dollar-devaluation do not exceed provisions in contract to cover short-falls in construction funds.

10. Architectural design and engineering design are suitable for intended purposes.

11. Construction and equipment installation proceed on schedule.

12. Project manager is available to monitor implementation.

In addition to the description of the project as appears in the logical framework narrative above, the detailed nature of the activities of the team of contract technicians from Harvard University is presented in the mid-project progress report submitted by Dr. Janeway in September 1975 (Annex E).

PART III - PROJECT ANALYSES

Engineering, social and economic analyses were prepared at the time of the original PROP and are included in the annexes of the PP. In general, the success of the CUSS project in meeting the goals of the "CUSS Philosophy", which calls for the training of a wide spectrum of health workers in a way which will prepare them to function as an integrated team in delivering preventive and curative health services to the predominantly rural population of Cameroon, depends upon the support CUSS receives from the Government of Cameroon.

That GURC supports the goal to apply the graduates of CUSS to solving the problems of rural health services was demonstrated clearly in October, 1975 when 100% of the first graduating class of 29 CUSS trained physicians were sent to rural posts. This emphasis on basic rural health services has continued in subsequent years, and now there are CUSS graduates throughout the country. The Government of Cameroon has also contributed 50% of the costs of construction to date, and provided CUSS with an operating budget of approximately $682,000 per year. Further consideration of GURC financial policy appears below as "Financial Analysis and Plan".

This project was initially funded entirely with Title X funds at a time when family planning activities were thought by many to be illegal in Cameroon due to the existence of pre-independence statutes patterned after old French laws. Although the GURC policy has officially been pro-natalist, increasing development of family planning services has been permitted, at times even encouraged, by the government. The CUSS project has been active in this area: exploring the need for family planning services, the prevalence of infertility problems and the sequelae of abortion. The Harvard CUSS team has established an active family planning clinic at the Central Hospital and is working with interested government officials to develop a national population policy which accurately reflects the needs of Cameroon.

Although Title X funding of this project was reduced following the Boynton Report cited in Part I, E., the Project has been effective in forwarding the goals of the Title X program, namely, "the encouragement of other countries to develop a responsible population policy and a full range of related services".

A. TECHNICAL ANALYSIS INCLUDING ENVIRONMENTAL ASSESSMENT

The original PROP presents the Engineering Analysis which is included in this document as Annex C. This analysis is based upon architectural engineering studies and concludes that the construction plans were sound, the cost estimates reasonably given and that the engineering requirements of Section 611 of the Foreign Assistance Act of 1961 has been met. The technical analysis of the cost overrun, including discussion of relevant Section 611 issues, is appended to Annex C. The environmental evaluation of the project is also included in Annex C.

The Government of Cameroon has employed the construction management firm, Société Centrale pour l'Equipement du Territoire (SCET) to insure continued adherence to the proposed design. USAID has employed periodic architect consultation and TDY engineering inspection by REDSO personnel to monitor construction progress to date.

Detailed, itemized cost estimates were submitted with the original PROP. The price revision formula to account for inflation and contingency costs appears in the construction contract between GURC and the construction companies, and was approved by REDSO in 1974. It will be noted that the price revision formula is only operative up to a 25% increase in total price. The cost overruns associated with the hospital as originally planned (there have also been some increases in scope of work) were negotiated at $3,371,670, or approximately a 43% increase. As noted in Part I, E., GURC has requested that USAID participate in meeting these increases in cost which are due primarily to the unforeseen oil crisis and high world-wide inflation rate. The environmental impact of the construction element of the project was a principal concern of the main architect, who designed the other buildings of the University of Yaounde of which CUSS is a part. The architectural style makes wide use of local materials and respects the basic patterns of land contours and trees. Careful attention has been given to the handling of wastes produced by the hospital and to the provision for adequate run-off of rain water from the hospital site.

The training activities engaged in by the project technicians include giving attention to health education and sanitation efforts which are designed to make Cameroonians more aware of their relationship with their environment and better able to intervene when the environment threatens their health.

B. FINANCIAL ANALYSIS AND PLAN

The financial analysis prepared for the initiation of this project is reflected in Tables 1 - 5 of the original PROP. The CUSS project is a non-revenue producing project; hence, its viability is primarily dependent upon the ability of the Government of Cameroon to meet its share of the initial investment costs, as well as all recurrent costs associated with the institution.

At the time of approval of the hospital construction contract, REDSO was concerned with the failure of GURC to adequately guarantee its ability to finance its share of basic construction costs. The sum reserved by GURC in 1974 fell slightly short of the GURC share of the contract price. GURC stated that it could not reserve funds three years in advance and that subsequent allocations of funds would cover the contract costs, cost overruns and the cost of mobile equipment.

The contract was approved, construction began and GURC has been paying its share of construction costs, as well as supplying CUSS with an increasing annual operating budget. However, in two 1976 letters from GURC, USAID was asked to contribute additional funds to cover portions of both cost overruns and the cost of mobile equipment. USAID/Cameroon has determined that GURC has been successful in finding additional funding for mobile equipment (notably from FAC) and equipment deliveries have

begun. GURC has budgeted over $650,000 in FY1978 and approximately $1,950,000 in FY1979 for payment of the hospital cost overrun which, together with the proposed $845,000 from USAID, essentially covers the entire cost overrun final settlement.

Both the CUSS institution and SCET have demonstrated their capacity for financial management of the additional funds provided by this project.

Financial tables are presented on the face sheet, in Part II, and in this section. In these tables, GURC and other donor contributions reflect their participation in the CUSS institution-building effort as a whole, whereas project outputs are expressed in the logical framework in terms of desired impact of USAID inputs. Thus, the "Costing of Outputs/Inputs Table" will not reflect all of the other donor activities which appear both on the face sheet and in the "Summary Cost Estimate and Financial Plan Table" and in Table 5 of the original PROP.

SUMMARY COST ESTIMATE AND FINANCIAL PLAN

(US$000)

CUSS PROJECT PAPER REVISION NO. 1

Use / Source	A. I. D.		Host Country		Other		Total
	FX	LC	FX	LC	FX	LC	
1. Technical Assistance	2035			3410	3090		8535
2. Participant Training	50				74		124
3. Scholarships	105			6000	285		6390
4. Construction		2855*	9968*	4272	2735	1173	21003
5. Other	81				4043**		4124
TOTAL	2271	2855*	9968*	13682	10227	1173	40176

* includes share in projected overruns

** mobile equipment

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COSTING OF PROJECT OUTPUTS/INPUTS

(US $ 000)

CUSS Project Paper Revision No. 1

Project: 625-11-550-531

TITLE: University Center for Health Sciences (CUSS)

OUTPUTS / INPUTS	1	2	OTHER	TOTAL
AID :				
1. Technical Assistance	2035			2035
2. Participant Training (direct)	50			50
3. Scholarships			105	105
4. Construction		2855		2855
5. Others	81			81
OTHER U.S. (None)	0	0	0	0
GURC		14240[x]	9410	23650
OTHER DONORS		7951[x]	3449	11400
T O T A L	2166	25046	12964	40176

[x] Includes projected overrun

SUMMARY OF OTHER DONORS CONTRIBUTION

(US $ 000)

DONOR	PERIOD OF CATEGORY	SUM
UNDP/WHO	Phase I	6
	Phase II	1500
	Phase III	594
	TOTAL	2100
CIDA	1968 - 1975	1500
	1975 - 1978	930
	TOTAL	2430
FAC	Technical Assistance	85
	Hospital Construction	3408
	Hospital Equipment	1915
	TOTAL	5408
	TOTAL	9938

C. SOCIAL ANALYSIS

In the original PROP, a combined socio-economic analysis was presented. It is included in this document as Annex B. The social analysis at that time demonstrated that the CUSS, as planned, would be of adequate size to carry out its training objectives, that there would be a sufficient supply of both students and instructors, and that the graduates of CUSS would be needed by the Cameroonian health system. It is important to add to these findings a current analysis in terms of sociocultural feasibility, the diffusion of innovation and benefit distribution. In addition, the role of women in the project will be discussed.

1. Sociocultural Feasibility: Seventy-five percent of the people of Cameroon are rural inhabitants, and most of these people are poor, beset with health problems of poverty and the tropics and without access to a formal health system. The presence of a few functioning rural government and missionary health facilities has demonstrated that the rural poor will avail themselves of available services while, at the same time, not abandoning the traditional medicine system upon which they have had to depend in the past. The CUSS curricula are designed to train health workers to be sensitive to the needs and beliefs of the people of rural Cameroon and to respect the effectiveness of traditional medicine.

An obstacle to the ability of CUSS to maintain its orientation toward the main elements of the population could develop as faculty and students attempt to duplicate medical education and research as it is practiced in industrialized capitals. In 1975, the Ministry of Health reinforced the CUSS philosophy of training appropriate technicians for Cameroon by assigning all of the first graduates to the rural areas. This project provides funds for the regular assembling of CUSS graduates to influence the evolution of the CUSS curricula and to insure that they remain responsive to the needs of the population.

2. Diffusion of Innovation: The spread of the lessons learned at CUSS is taking place in a wide variety of ways. As an innovative, young medical institution, CUSS is invaded by a steady stream of curious observers representing governments, multilateral agencies, and training institutions from all over the world. CUSS also hosts an increasing number of international conferences, workshops and seminars. Within Cameroon, CUSS offers periodic conferences to rural practitioners and has involved a number of rural health facilities in the training of CUSS students. This direct contact with CUSS, enhanced by the rural posting of CUSS graduates, serves to upgrade the practice of both preventive and curative medicine in these facilities.

In addition, CUSS is increasingly participating in the development of other projects with entities such as the Ministry of Health, WHO and numerous donor agencies. One such project includes wide scale organization of village health committees. A small number of CUSS students are from other African countries and will help to give the CUSS philosophy a regional influence. This project provides funds to encourage the attendance of non-Cameroonian students at CUSS.

3. Benefit Distribution: It is an objective of this project to contribute to the Government of Cameroon's goal to bring access to the national health system to over 80% of the population and extend its preventive services to 50% of the population by 1980. Those who will receive new access to the system are largely the rural poor including rural and urban disadvantaged groups which are not currently covered by public health and preventive medicine programs. Certain elements of CUSS's activities, such as its participation in a project to organize village health committees, are directed at increasing the ability of the rural poor to address their own health problems and to utilize the expanding national health services system.

4. Role of Women: The role of women in the CUSS project exceeds that as beneficiaries of improved community medicine services which focus on maternal and child health. The role of women in the execution of the CUSS program is significant, although still not proportionate. Qualified women professionals are active at CUSS as physicians, nurses and administrators, and there are women represented in the CUSS governing bodies, including the 'Conseille de Direction'. CUSS selection procedures encourage the training of women at all levels, and many of the more successful students among the recently graduated have been women.

D. ECONOMIC ANALYSIS

Annex B presents the economic analysis section of the original PROP which cites the apparent ability of the Government of Cameroon to bear both its share of the investment expenses and all of the recurrent costs associated with CUSS. It concluded that, based upon the analysis and the attendant long-range benefits of the project, it appeared that the project was economically sound.

In this PP, being drafted when the project is nearing completion, an economic feasibility analysis cannot serve its usual purpose of aiding the choice between alternative projects or alternative project designs. However, it can contribute to the lessons learned in implementing the CUSS project.

Since the CUSS project is not concerned with production activities, with marketed outputs, a cost benefit analysis employing either benefit cost-ratio, internal rate of return or net present value is not appropriate. Even consideration of different "time profiles" of costs cannot be of much value for a project already underway.

Non-revenue producing projects are usually subjected to cost-effectiveness analysis, but even this method is not particularly suited to the CUSS project, whose primary features are technical assistance and institution building. While there are too few comparable models for comparing alternative forms of production of CUSS products, it can be expected that the costs of beginning an institution from scratch have resulted in an inordinately high cost per student/year to date. The issue of whether the centralized training of health professionals is a more cost-effective way of bringing improvements in health status to rural populations than the organization of village health committees and the peripheral training of paramedical personnel is moot at this point in time with CUSS established and USAID's CUSS Project approaching its end. Future USAID health projects such as MEDCAM will take this issue into account

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PART IV - IMPLEMENTATION ARRANGEMENTS

A. ANALYSIS OF THE RECIPIENTS' AND AID'S ADMINISTRATIVE ARRANGEMENTS

1. GURC

This project is administered primarily by the Ministry of Economy and Plan with significant roles being played by the Ministries of Education and Finance. GURC has contracted with SCET International to manage the construction element of the project. Paradoxically, the Ministry of Public Health does not have administrative responsibilities with respect to the project although it does absorb the CUSS graduates into its services. The administrative support of the technical assistance, participant training and scholarship elements of the project is provided by the CUSS direction itself.

This analysis is facilitated by the fact that the managerial/administrative capacity of GURC vis-a-vis this project can be judged on the basis of several years of project experience.

a. Leadership:

The leadership in the ministries overseeing this project is in a constant state of flux due to frequent personnel changes. Delays in processing documents have caused substantial delay with this project already: it took five months to get five GURC ministerial signatures on the first amendment to the construction contract after the text had been agreed upon by all parties. Fortunately, the leadership found in SCET was able to compensate a great deal and kept construction moving forward with some attention to schedule.

The CUSS direction is strong and has been receiving administrative and managerial assistance from UNDP/WHO as a result of past analysis in these areas. This project has not been particularly adversely affected by CUSS management shortcomings.

b. Structures:

The structure of the institution CUSS is that which most affects this project. The structure was established by Presidential Decree and is a complex organization of training programs and departments under a central director. The project technicians relate directly to their respective departments, Pediatrics and OB/GYN, in the development of the CUSS MCH program. The chief of the project technicians also sits on the CUSS technical committee. The USAID project manager sits on the CUSS Board of Directors (Conseil de Direction).

c. Role of commitment:

CUSS has now demonstrated that it is committed to its role as the leading African health manpower training institution which maintains a curriculum designed to meet Africa's needs and attempts to train a multidisciplinary team of health workers to address the problem of rural Africa

d. Resources:

CUSS does relatively well in competing for the material resources available to Cameroon. Nevertheless, there are often serious shortages in gas and equipment which hamper training. Human resources are becoming available to CUSS at a more rapid rate than expected, which has resulted in the redirection of participant training by this project.

2. USAID

USAID monitors the implementation of this project through the project manager who is a member of the USAID/Cameroon staff in Yaounde. The present project manager is a senior public health physician who evaluates the execution of the project by the contract technicians, meets regularly with the CUSS Director, provides technical assistance to the project and represents USAID on the CUSS Board of Directors.

B. IMPLEMENTATION PLAN

It should be stated that, although critical performance indicators have been time-phased and related to each other in the Project Performance Tracking Chart (Annex F), about three-quarters of the decision-making in the project is in the power of GURC and FAC. While provisions have been written into the Project Agreement for mutual consultation and approval of project issues, experience has shown that this is not always the case. The contract agreement between GURC and the construction companies was supposed to have had prior approval from USAID. In reality, USAID approval of the construction contract and the disbursement of funds came about 1 year later when construction of the CUSS hospital was well underway. On the other hand, bureaucracy within the GURC system is such that it takes months to process documents that have been mutually agreed upon.

It is against this background of experience that the PPT network chart has been developed. As a former USAID project requirement, the PPT network was expected to improve the managing, reporting and monitoring of USAID inputs into the project. But, because the actual implementation of the project is under the control of GURC, the critical performance dates cannot be taken as absolute.

The complexity of the project manifests itself in the fact that GURC was the principal implementing agent of most of the critical performance indicators which served as USAID warning signals. For the ultimate achievement of the USAID purpose of its component of the project, for instance, it was estimated that the latest date for ordering of mobile equipment for the hospital is June 1978. It was also estimated that the latest date for recruiting local core staff for running the hospital was March 1978. USAID does not, however, finance these items and can only use the terms of the Project Agreement to negotiate a timely achievement of the overall project purpose.

The PPT network outlines the implementation plan. For those actions for which USAID was the sole implementing agent, it is noted that they were accomplished before the purpose of the project was threatened. For elements of the project not within USAID's financing, the USAID/Cameroon project manager, with the assistance of consultant services, has applied pressure, using the Project Agreement, to obtain timely and satisfactory achievement.

The importance of evaluation as a feedback mechanism for modifying action towards the project purpose deserves mention here. This can be considered at two levels as far as USAID interests in the project are concerned. An evaluation of USAID inputs/outputs vis-a-vis the stated USAID project purpose can be easily done. The results of such an evaluation (e.g. Boynton's 1974 evaluation) can be used to modify USAID actions in the project.

The second level of evaluation involves the consideration of CUSS as a functioning entity irrespective of specific contributions. USAID must necessarily be interested in this second type of an assessment because it is possible for the USAID-financed MCH unit to be functioning properly while the overall performance of the institution is unsatisfactory. It becomes evident that the recommendations from individual donor evaluations could not only be conflicting but could fail to evaluate CUSS as a functioning unit.

To avoid these kinds of fragmentary evaluations, which would be of limited value, USAID/Cameroon is suggesting to the CUSS directorate that it propose a joint external evaluation of the CUSS project. This evaluation could be coordinated by the CUSS directorate and would allow for individual interests in the evaluation. The advantages of such an evaluation are that it would be wider in scope, would be economical and recommendations derived from it would have a greater impact for implementation.

C. EVALUATION PLAN

The complexity of the CUSS Project is such that a USAID evaluation of the project would be valid only to the extent that such an evaluation addresses itself to the USAID objectives of the CUSS Project. Such an evaluation was performed in 1977 (see Annex G).

In February 1974, Willard H. Boynton participated as an observer in a UNDP commission which was making a UNDP mid-project evaluation at the time. Dr. Boynton was also in Yaounde to evaluate the appropriateness of the use of Title X money in the CUSS project. His trip report, which discouraged the use of Title X money for the CUSS project, notwithstanding his assessment of the project as "...one of the best conceived public health projects which AID has undertaken...", is included in this report as Annex D. It should be recalled that the Boynton report was written only 3 months after the first member of the Harvard team had arrived at CUSS.

The mid-term evaluation of the CUSS project was conducted in April, 1977. This evaluation was at a time when all components of the CUSS project (technical assistance, construction and participant training) had been in operation long enough to produce results. The second team of Harvard technicians had recently arrived to replace the first team which had served in CUSS for two academic years.

The final USAID CUSS evaluation is scheduled for sometime in 1980, as indicated in the Project Performance Tracking Chart (Annex F). This evaluation should be a joint endeavor, involving all previous donors if possible.

The Logical Framework Matrix states the objective and expected outputs of the project. These were the bases for the mid-project evaluation and will be for the final evaluation.

D. CONDITIONS, COVENANTS AND NEGOTIATIONS

At this time, with only the final year of funding to subject to pre-conditions for disbursement, USAID/Cameroon will focus its attention on the problem of insuring adequate maintenance for the new CUSS community teaching hospital. This issue is discussed in PART I, Section E, Project Issue 6 herein.

USAID/Cameroon will include the following clause in the appropriate section of the FY1978 Project Agreement for the CUSS Project:

> The funds included in this agreement for the purpose of contributing to the costs of the construction of the CUSS Hospital will not be disbursed by USAID until the Government of the United Republic of Cameroon submits to USAID/Cameroon:
>
> 1. an acceptable CUSS Hospital maintenance plan, including proposed staff training; and
> 2. evidence of sufficient budgetary support for undertaking CUSS Hospital maintenance.

The final construction contract settlement was negotiated between GURC and the construction consortium for a total of CFAF 798,624,719 ($3,472,281). Of this amount, CFAF 775,484,188 ($3,371,670) is related to the original contract scope of work.

A N N E X E S

A. Logical Framework Matrix

B. Socio-Economic Analysis, 1971

C. 1. Engineering Analysis, 1971

2. Technical Analysis Report, 1978

3. FAA Section 611(e) Certification, 1978

4. Environmental Examination, 1978

D. Boynton Report, 1974

E. CUSS-Harvard Team Progress Report, 1975

F. Project Performance Tracking Chart

G. Mid-Project Evaluation:

1) Wolf and Company, April, 1977

2) Oudens & Knopp, June, 1977

H. Harvard Contract Budget Request

July 1, 1977 - June 30, 1978

I. GURC Request for Financing Hospital Construction Cost Overruns

ANNEX A

AID 1020-28 (1-72)

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

Life of Project:
From FY 1972 to FY 1979
Total U. S. Funding $5,125,621
Date Prepared: August 30, 1977

Project Title & Number: University Center for Health Sciences (CUSS) 631-0531

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Program or Sector Goal: The broader objective to which this project contributes: GOAL: This project is expected to contribute substantially to the efforts of the Government of Cameroon to extend the accessibility of the national health care delivery system, emphasizing preventive medecine in maternal and child health to 80% of the population by 1980.	Measures of Goal Achievement: 1. 80% of the population have access to the health care system by 1980. 2. 50% of the population are reached by some form of health care by 1980, e.g. : a. health education programs b. preventive medicine programs c. curative medical services 3. Health units benefiting from presence of CUSS graduates are effecting improvements in the health of the communities served, e.g.	1. The 1976 census data coupled with the Ministry of Health statistics. 2. Ministry of Health, Grandes Endémies and clinic of health unit records. 3. A specific impact study will be required using health units without CUSS graduates for comparison. 4. Part of above impact study.	Assumptions for achieving goal targets: 1. Both the government and CUSS will continue to place a priority on improving rural health services. 2. Development in other sectors will prodeed correspondingly. 3. Medical technology will keep pace with disease evolution. 4. Related activities : AID: a. African Health Training Institutions Project b. Center for Educational
Project Purpose: Develop an effective and viable MCH teaching program within the University Center for Health Sciences	Conditions that will indicate purpose has been achieved: End of project status. Effectiveness: 1. No of qualified graduates; a) Cameroonian medical doctors b) Non-Cameroonian medical doctors c) Cameroonian publ. health nurses d) Non-Cameroonian P.H. nurses e) Other 2. No. or research reports completed on MCH a) Harvard Team b) CUSS faculty (con't)	1. CUSS graduation statistics 2. CUSS research records 3. Combination of CUSS and GURC records and survey of Cameroonian health workers 4. CUSS service records	Assumptions for achieving purpose: 1. Any student certified as qualified will have been assessed as such on the basis of examinations testing for knowledge necessary for the management of most common African health problems. 2. Materials and funding are available for research 3. Government non-objectionability continues and materials such as contraceptives are made available. (con't)
Outputs: 1. CUSS Maternal and Child Health demonstration program developed and functioning as an integral part of the medical training service and research program. 2. Family Health Outpatient and Pediatric facilities built and functioning as integral parts of the CUSS Community Teaching Hospital.	Magnitude of Outputs: 1. MCH Clinics organized and operating -Ante-natal clinics -Post-partum clinics -Child spacing clinics (see schedule) -Well baby Clinics -High Risk Clinics 2. MCH curriculum and Instruction -MCH health needs and health worker functions delineated -MCH instructional objectives developed	1. a. AID records, CUSS records, curriculum review b. Curriculum review c. WHO tests, CUSS records d. Clinic records e. Research review, publications f. Clinical records, US National Health Statistics g. CUSS records and CUSS budget review h. CUSS alumni meeting records. (con't)	Assumptions for achieving outputs: 1. CUSS/MOH continue to support MCH clinics with supplies, technical staff and administration. 2. Students can afford textbooks and medical instruments. 2-3. Demand for clinical services does not impede MCH teaching and research 2. Educational planning and development expertise available to CUSS/Harvard faculty. (con't)
Inputs:	Implementation Target (Type and Quantity)		Assumptions for providing inputs:

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AID 10.J-28 (1-72)

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

Life of Project:
From FY 1972 to FY 1979
Total U. S. Funding $5,125,621
Date Prepared: August 30, 1977

Project Title & Number: University Center for Health Sciences (CUSS) 631-0531

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Program or Sector Goal: The broader objective to which this project contributes:	Measures of Goal Achievement: a. significantly better maternal and child morbidity and mortality rates than in similar ("control") centers without CUSS graduates; b. documented downward trend in above statistics where CUSS graduates are working. 4. Non-CUSS graduates adopt new practices as a result of being influenced by CUSS graduates. 5. An increased number of rural clinics are actively involved in community health projects.		Assumptions for achieving goal targets: Development for Health Project c. Strengthening of Health Delivery Systems Project d. Practical Training for Health Education Project e. MEDCAM Project Others : a. CDC Immunization Project b. World Fertility Survey c. UNFDA Census Project
Project Purpose:	Conditions that will indicate purpose has been achieved: End of project status. c) students advised by Harvard Team inclusive of thesis. 3.a) Change in faculty attitudes towards teaching family planning b) Hrs. in curriculum for teaching family planning. c) change in government policy re child spacing 4. Number of new MCH teaching clinics set up by CUSS (con't)		Assumptions for achieving purpose: 4. Funding continues to be available for remote site demonstrations. CUSS continues to stress MCH in curriculum and makes commodities and materials available. 7. MinEducation provides adequate operations budget to CUSS. 8. MOH provides personnal and budget for MCH operations.
Outputs:	Magnitude of Outputs: -Innovative teaching methods introduced -Instructional materials, aids and equipment delivered and operational -Valid and reliable MCH examination mechanisms developed and utilized TEACHING -Courses taught (No.Titles) -Lectures given (No.Titles) -Bedsides teaching (Hrs/wk, No.students) (con't)	2. a. Construction records, site visit b. Engineering report c. Patient flow analysis, quality care review, student records.	Assumptions for achieving outputs: 2. Salary incentive will not impede utilization of Harvard teaching activities. 2-3. Student discipline and accountability enforced. 3. Comparative epidemiological and biostatistical data available 4. a. MOH nurses (ENISFAY) and CUSS students trained in common trunk courses and/or common facilities. Francophone and Anglophone trad. medicine difference resolved. (con't)
Inputs:	Implementation Target (Type and Quantity)		Assumptions for providing inputs:

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AID 1020-28 (11-72)

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

Life of Project:
From FY 1972 to FY 1979
Total U.S. Funding $2,125,621
Date Prepared August 30, 1977

Project Title & Number: University Center for Health Sciences (CUSS) 631-0531

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Program or Sector Goal: The broader objective to which this project contributes: SUB-GOAL (Partial Post-Project Timed) Strengthen MCH services and education in selected areas (MCH posts held by CUSS graduates)	Measures of Goal Achievement: 1.Graduates staffing rural hospitals and P.M.Centers(NO)/% of class) M.D.'s CUSS trained Para-Meds 2.Graduates using team approach (No.) 3.Graduates initiating education(No.) a) Para-Meds. b) Patients 4.Clinics being replicated by graduates (No.) a) Child Spacing c) Antenatal b) High Risk d) Well Baby		Assumptions for achieving goal targets: 1.Staff provided by T/A on the average 2.Rural MCH facilities available in 80% of selected div./provinces 3,4,5 Lack of facilities and commodities not thwarting delivery of quality and education. 7.Cooperation between MOH/CUSS/IDO 8. % of rural population have access to rural facilities by 1978 9.Communication, transport provides for implementing refinal.
Project Purpose:	Conditions that will indicate purpose has been achieved: End of project status. a)New CUSS Hospital b)Mofou outreach secvices c)Other CUSS training sites 5.Reduction in perinatal mortality by 10%/yr a)in Central Hospital/Maternity b)Baseline established in new CUSS h. 6.Reduction in maternal mortality by 10%/yr. a)in Central Hospital maternity b)Baseline establ.in new CUSS hospital		Assumptions for achieving purpose:
Outputs:	Magnitude of Outputs: 1. Research Project in Progress -CUSS Faculty (No.,Topics) -Harvard Team (No.,Topics) -Student Thesis (No.,Topics) 1.A.Coordinating Mechanisms -Physician, Nurse, Para-Med team work in MCH teaching, research, service -Harvard Techn.functioning as team -Clinics organized for service and teaching (con't)		Assumptions for achieving outputs: Inter-Governmental agencies cooperating (IDO/MOH/CUSS) 1.c.CUSS Hospital completed and adequate operational budget 1.d.MOH/CUSS Administration nominate (degrees and signatures forhtcoming) 1.e.CUSS admission policy favorable to accepting non-Cameroonians 1.f. CUSS/MOH cooperating in planning conducting, and reporting evaluation information.
Inputs:	Implementation Target (Type and Quantity)		Assumptions for providing inputs:

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AID 1020-28 (1-72)

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

[illegible]
[illegible] FY 197[illegible]
[illegible] $5,815,120
[illegible] 30; 15[illegible]

Project Title & Number: University Center for Health Sciences (CUSS) 631-0531

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Program or Sector Goal: The broader objective to which this project contributes:	Measures of Goal Achievement: 5.Graduates coping with non-medical bottlenecks: %__ (assembling community resources) 6.Statistics and records kept and reported 7.Evaluation of graduates utilization of training and feedback to CUSS (%__ satisfactory)* 8.High risk cases referred to provincial or appropriate hospital 9.Research reports disseminated 10.Other African Univ.replicating CUSS training methods.		Assumptions for achieving goal targets:
Project Purpose:	Conditions that will indicate purpose has been achieved: End of project status.		Assumptions for achieving purpose
Outputs:	Magnitude of Outputs: -Intra-Institutional (committees and councils) No. meetings/yr. 1.CUSS/PCH faculty on board. 2.Community hospital facilities operational 3.Faculty/staff development (no. of participants sent) 4.Non-Cameroonian scholarships (No./yr) 5.Feedback system operating (No. surveys/yr)		Assumptions for achieving outputs.
Inputs:	Implementation Target (Type and Quantity) * Measure outputs in one reporting period and factor for revision of training		Assumptions for providing inputs:

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ANNEX B

SOCIO-ECONOMIC ANALYSIS FOR
UNIVERSITY CENTER FOR HEALTH SCIENCES (CUSS)

The factors to be considered in an economic analysis of revenue-producing projects are not pertinent to this project. As a major component of the social services to be provided in Cameroon and surrounding francophone states, the project may properly be considered in a socio-economic framework.

A. Need for Facility

There are no other medical schools in Cameroon or the surrounding countries of the Central African region. The CUSS will fill a glaring gap in providing in-country training facilities. The CUSS also fills a role beyond the mere provision of trained medical and paramedical personnel by developing an integrated approach to health care in a fashion relevant to the African setting. This is amply set forth in other sections of the PROP.

The facility itself is adequate to handle its stated objectives. The laboratories, amphitheaters, classroom and demonstration space have been designed to provide the needed workspace. The outpatient department is to serve a defined population of from 20,000 - 30,000 people. It is estimated that visits average about 2.5 per person/year.(1) This would produce an average of about 60,000 outpatient visits per year. At 300 operating days/year, the average day would include about 200 visits. The outpatient department has been designed to handle up to twice this amount.

In Yaounde there are currently 800 beds serving a population of approximately 300,000. Hospital occupancy rate is virtually 100% and more than half the beds are taken up with long-term patients. The CUSS will add 150 beds to the Yaounde area. While 80 - 90 beds were considered adequate to handle the defined community for the CUSS, the larger number of beds are needed for several reasons. The hospital facility will provide all categories of service, with emphasis on generalized services. There will be a need for the additional beds for teaching purposes. And, finally, the CUSS hospital will inevitably serve, to a limited extent, as a referral hospital for patients from outside the defined community.

B. Demand for Graduates of CUSS

The number of medical and paramedical personnel currently working in Cameroon or in training do not provide sufficient manpower to meet the stated objectives of the Cameroon in the health field. In addition, a

(1) Medical Care in Developing Countries - King.

high percentage of health personnel currently working in Cameroon, especially doctors, are non-Cameroonians. Graduates from the CUSS will contribute toward meeting the gap and will easily be absorbed into the health sector while at the same time bringing a different concept toward health care as described in other sections of the PROP. A breakdown of the current manpower in the health sector is shown in the following table:

Type	Total	Cameroonians	Foreigners
Medical Doctors(2)	250	87	163
Pharmacists(3)	67	45	22
Dentists(4)	17	5	12
Nurses(5)			
Infirmiers d'Etat	658		
Infirmiers Brevetés	952		
Aides Soignants	580		

In addition to the above, there is one sanitary engineer with four in training, thirteen public health technicians with nine in training and five lab technologists with an additional five in training.

The CUSS will permit training of additional personnel as follows:(6)

	Number of Students				
	1971/72	72/73	73/74	74/75	75/76
Medical Doctors	130	178	226	274	284
Pharmacy	0	12	24	36	36
Advanced Nursing	0	12	24	36	36
Medical Technology	0	12	24	36	36
Public Health	0	12	24	36	36
Total	130	226	322	418	428

(2) There are currently 220 Cameroonians at various stages of medical study in foreign countries. Past experience has been that less than half are likely to return to Cameroon. The creation of CUSS may well attract a higher percentage to return.
(3) 18 are presently in pharmacy study in foreign countries.
(4) 9 are dental students in foreign countries.
(5) These represent the three categories of nurse's skills roughly equivalent to registered nurse (including mid-wives), ordinary nurse training and nurse's aides.
(6) See also Appendix A.

Annual Intake of Students at Full Cycle (72/73)

	Cameroonians	Foreigners
Medical Doctors	36	12
Pharmacy	10	2
Advanced Nursing	6	6
Medical Technology	10	2
Public Health	8	4
Total	70	26

The number of graduates projected over the initial five-year period is as follows: (7)

	1971/72	72/73	73/74	74/75	75/76
Medical Doctors	0	0	0	48	96
Pharmacy	0	0	12	24	36
Advanced Nursing	0	0	12	24	36
Medical Technology	0	0	0	12	24
Health Organizations	0	0	0	12	24
Total	0	0	24	120	216

As indicated in Section A above, there are no other medical schools in Cameroon or the surrounding countries of Central African Republic, Chad, or Gabon which are likely to provide the source of foreign students in the CUSS. Nurse's training is given in several centers throughout the Cameroon, although the output will not meet the stated goals. Nurse's training at the CUSS is limited to advanced training. It is evident from the limited number of trained medical and paramedical personnel in the country that all graduates of the CUSS can be fully and effectively utilized and, more particularly, to carry out the innovative concept of rural health services upon which the philosophy of the CUSS is based.

C. Source of Students

All disciplines require the equivalent of a secondary school degree, known as the "BAC". In 1970, Cameroon produced 491 "BAC" level graduates and anticipates 550 in 1971. This number is expected to continue to grow. The annual intake for the CUSS as indicated in Section B above is projected at 96 with about one-third of these students coming from other francophone West African countries. As the CUSS is a bilingual institution, there is a possibility that

(7) See Appendix A for length of courses.

students could also be admitted from Anglophone areas outside Cameroon. On the basis of the foregoing, it is reasonable to expect that a sufficient number of qualified students will be available for the project.

D. Availability of Staff

Currently, in the pre-clinical disciplines, there are a total of 13 faculty members (5 Cameroonians, 4 WHO, 3 French, 1 Canadian). By 1976 a maximum of 72 faculty members is planned. This will include 30 foreigners (12 WHO, 4 U.S., 7 Canadians, 5 French and 2 others) and 27 to 42 Cameroonians. Section IV Table 5 shows the support of other donors providing funding for the foreign personnel. There will be at least one senior level Cameroonian in each preclinical and clinical discipline, with a second Cameroonian in most areas. A phased withdrawal of foreign faculty is planned after 1976. Training of Cameroonian faculty to permit the phase out is scheduled as follows for the period 1971-76:

USAID - 15 man-years (physicians, clinical disciplines and public health).
WHO - 468 man-months (all MD's).
Canada - Approximately 15 man-years (physicians and others)
Other - 2 MD fellowships/year in U.K.

The faculty/student ratio is as follows:

1971 - 13/130 = 1/10 (all medical students)
1976 - 72/428 = 1/6 (all student disciplines)

This is a high faculty/student ratio reflecting the integrated nature of health care team training and the many varied disciplines involved.

There are a number of Cameroonians currently training abroad (see B above). It is probable that some of these will return to the CUSS. Based on this, the training proposed specifically for the CUSS, the availability of USAID and other foreign personnel, it is reasonable to expect that sufficient qualified staff will be available for the project.

E. Financial Operation

The operating budget of the CUSS will be borne by the Ministry of Education through the University Budget. Of a total University Budget of $1.8 million for current expenditures in 1971, $220,000 was earmarked for the operation of the CUSS, an increase from $150,000 for the previous year.

It is estimated that when the entire CUSS facility is completed, scheduled for 1974, recurrent expenditures will run approximately $2.3 million. Part of this expense will be met by outside donor support. Projections are available for this only up until 1976. Contributions to the recurrent costs from outside donors for this period are as follows:

USAID	$1,225,000
WHO	500,000
Canada	500,000
FAC	25 man-years faculty support
Other	Possible UK faculty support

In addition, the Ministry of Health has committed itself to pay for services rendered by the CUSS personnel outside of the main university campus. The Health budget proposed for 1971/72 is $12.2 or 7.3% of the total Cameroon budget.

Figures are not yet available for the projected University Budget over the next five year period and how much will be allocated to the CUSS. However, support from the Government has been strong for the project as well as large scale external donor support. It appears reasonable to assume that adequate financing will be available to support the recurrent expenses of the CUSS. Based on the foregoing, and the attendant long-range benefits provided by the project, it would appear that the project is economically sound.

A N N E X C

C-1	Engineering Analysis, 1971	pp 1-3
C-2	Technical Analysis Report, 1978	pp 1-5
C-3	FAA Section 611(e) Certification, 1978	pp 1
C-4	Environmental Examination, 1978	pp 1-3

ANNEX C-1

Engineering Analysis

for

University Center for Health Sciences (C.U.S.S.)

1. Description of Project

The CUSS Project is planned to encompass the following three main groups of buildings: (1) a biomedical-sciences unit consisting of a laboratory building and an administration building containing offices, cafeteria and a 300 seat amphitheater; (2) a 150 bed hospital and (3) housing in the form of individual and multi-dwelling units. The several donors who are planning to contribute to this project and their planned contributions are described in detail in Table 5. That portion of construction which AID is proposing to finance consists of the following:

A. Outpatient Department for Adults

This department is planned to provide consultation offices, examination rooms, conference rooms, laboratory and staff rooms. The total floor area is approximately 1440 square meters.

B. Outpatient Department (P.M.I.)

This department is designed to provide all pediatric and maternity outpatient services and will also have a dental office, pharmacy, demonstration offices and movie projection facilities. These services are planned to utilize about 1560 square meters of floor area.

C. Pediatric Wing

This wing shall be approximately 790 square meters in gross area and will provide space for 30 beds and all related pediatric ward services.

D. Maternity Wing

This wing will be on the floor directly above the pediatric wing, will have the same floor area and will provide rooms for 30 beds as well as all other maternity ward services.

2. Engineering Plan

The Chief Architect, Mr. Michel Ecochard of Paris, was commissioned by the Fonds d'Aide et Cooperation (FAC) to do a technical study for the CUSS which includes schematic drawings (esquisse), preliminary studies (Etudes préliminaires) and advanced planning (Avant-projet). The civil and mechanical

engineering is being performed by the Societe Centrale pour l'Equipement du Territoire (SCET), a quasi-government firm of consultants on international construction. At this writing, the planning is in the preliminary study stage. Architectural floor plans at 1:200 scale, sections and elevations and a site plan have been submitted to all interested parties for review and comment. A descriptive analysis and estimated costs on a square meter unit cost basis were also part of the submission. Some of the floor plans have had two revisions, the last one dated 30/3/71. AID/W contracted for architectural consultant services with Mr. Jerold E. Williamson of Bethesda, Maryland to review the CUSS Project and make a feasibility report. The report was completed in May 1971 and was broken down into six general categories covering the CUSS philosophy, project scope, requirements, conflicts, costs, multi-donor problems and recommendations.

Planning and final design including contract documents is being accomplished in four steps which is standard French procedure. In addition to the first three steps mentioned above for which the FAC is paying the fees, there is a fourth step called "Projet définitif". This step covers final design, working drawings, bed documents, bid analysis and supervision of construction.

The Etudes Préliminaires are fairly firm in overall floor area limits. The outpatient department offices and room allocations appear to be satisfactory, although there may be some additional changes in room orientation. The pediatric and maternity wings are firm in total space requirements, but different and more practical room arrangements are being proposed by USAID/Yaounde and AID's architectural consultant.

All new construction will conform to the general design features of existing University buildings. Foundations will be reinforced concrete spread footings, grade beams where needed; reinforced concrete frame construction; most outside walls built of granite stone quarried nearby; interior and some outside walls of concrete block, cement mortar finished; most windows will be jalousie type, aluminum frame, a few will be wood frame and sash, side-hinged; floors and steps will be of precast terrazzo and tile; doors will be flush type of plywood construction with door frames of wood; flat roofs will be sealed with asphalt felt built-up roofing covered with stone chips; lighting will be mostly fluorescent and unit air conditioning and all utility services will be installed where required.

3. Technical Soundness

An inspection of the biomedical sciences buildings, presently under construction and due for completion August 15, 1971 showed that the general design motif is simple and practical and the overall appearance is pleasing. Construction itself is considered good. The exposed concrete is smooth and uniform in color; the buildings appear to be structurally sound and to be functionally well designed. These buildings were estimated to cost about $73 per square meter. Actual cost figures are reported to be within 10% of the estimate.

The cost estimates for CUSS made in 1971 were prepared by the Architect and SCET at the preliminary study stage by using estimated unit costs per square meter of floor area. These unit costs have been projected through calendar year 1973 using an escalation figure of 10% per year since most of the actual construction is programmed for 1973. Construction costs for the OPD Blocks are estimated at $310.00 per square meter or about $28.50 per square foot. The maternity and pediatric wings are estimated at $330.00 per square meter or about $30.45 per square foot. In addition to the above costs AID is expected to finance the cost of fixed equipment for these areas estimated at about $180,000 total; the cost of the A/E services for the fourth step of planning (projet définitif) estimated to cost about $67,000; and the cost of supervising construction estimated at $73,000.

Based upon the experience of the A/E in designing, estimating costs and supervising construction of other university buildings of similar design and unit costs, it is considered that the preliminary plans and studies are technically sound, the cost estimates reasonably firm and that the engineering requirements of Section 611 of the Foreign Assistance Act of 1961 have been met.

ANNEX C-2

Technical Analysis Report 1978

A. Background

The scope of this Technical Analysis Report is limited as the facilities have been completed for over a year and this section deals only with financing a portion of the cost overrun that occurred, 611(A) and 611(E) revisions and the Environmental Examination.

The GURC has submitted to USAID/Cameroon a request to finance a portion of a cost overrun which totals CFAF 798,624,719 (US$3.472 million at 1 US$ equals 230 CFAF), or an increase of 43% in the original contract price. Of this total, CFAF 23,140,531 are not eligible for AID funding because they relate to the maternity wing extension, a change in the original scope of work. The remaining amount reflects escalation in costs of labor, materials and equipment between August 1973 and December 1976.

B. Cost Overrun Analysis

The cost overrun is broken down in three items:

"Actualization" or adjustment in contract price that took place in July 1974	CFAF 590,848,993
"Actualization in Maternity Wing extension price	CFAF 23,140,531
Escalation from August 1974 to December 1976	CFAF 184,635,195
Total	CFAF 798,624,719
Not eligible	CFAF 23,140,531
Total eligible overrun	CFAF 775,484,188

1. "Actualization"

The conditions of the contract permit an adjustment in contract price if the cost of the contract, as calculated from the escalation formulae contained in the contract documents, indicate that the contract cost has been increased by over 25% due to escalation. Although the contract was executed in June 1974, the base date for all prices and indices used in the escalation formulae is August 1973. A rough calculation of escalation up to the date of the signature of the contract indicates that the contract had already increased by 20% by the time it was signed. That is to say, that although the signed contract had a face value of 1.8 billion CFAF (which equaled available financing), the actual amount contracted for was approximately 2.16 billion CFAF due to escalation that took place prior to contract execution, starting the project off with a 360 million CFAF shortfall. As stated above, the contract permits renegotiation of the contract cost at such time the results of the escalation formulae equaled or surpassed

an increase of 25%. This renegotiation took place in July 1974, two months after contract execution. At this point negotiations were carried on between the GURC, the Consultant and the Contractor which resulted in an "actualization" or updating of the contract as of August 1974 in the amount of CFAF 591 million, or 32.8%. The process employed to reach this figure was as follows:

a. In July 1974, the total increase in the contract price reached 28.4%, triggering the possibility of renegotiation.

b. The contractor calculated the "actual" cost increase (not that calculated through the escalation formulae) and determined that the increase was actually 32.8%, and not 28.4% as indicated by the escalation formulae. This was accepted by both the consultant and the GURC, and the escalation formulae were then revised in order that the result would reflect the desired 32.8% increase. This formed a new basic contract price from which all future escalations would be calculated. However, the revised escalation formulae were used only in this one case, and all future escalations reverted to the formulae contained in the original contract.

Due to the length of elapsed time between the "actualization" process and the analysis of such costs, it is not possible to verify the justification of an increase in contract price which exceeded by 4.4% that which would have been obtained from applying the original excalation formulae straight through from commencement to termination of construction. The difference between these two costs is approximately 86 million CFAF ($374,000). Calculations are shown on following pages herein.

2. Escalation from August 1974 to December 1976

This item follows the formulae in the contract and appears to be correct and eligible for AID financing.

3. Summary

Actualizations (including actualization on addition to maternity wing)-(verified)		CFAF 527,926,112
Escalation (verified)		CFAF 184,635,195
	Sub-Total	CFAF 712,561,307
Actualizations (not verified)	on basic hospital	CFAF 79,648,993
	on Maternity addition	CFAF 6,414,419
	Total	CFAF 798,624,719

FINANCIAL STATUS

All Costs in CFA F

	Original Contract Price (Based on August 1973 prices factors)			1,800,000,000
1.	Actualization (July 1974) (Approx. 32.8%)			590,848,993
2.	New Contract Price (August 1974)			2,390,848,993
3.	Addition to Maternity Wing			
	Original Cost	67,444,610		
	Actualization	23,140,531		
4.		TOTAL		2,481,434,134
	(New contract price as of July 1974)			
	Overrun as of July 1974		631,434,134	
5.	Escalation from August 1974 to December 1976			184,635,195
	TOTAL Contract Price (items 4 & 5)			2,666,069,329
6.	Financing:			
	A. Original Contract		(-)	1,800,000,000
	Shortfall Sub-Total			866,069,329
	B. Maternity Wing Addition		(-)	90,585,141
7.	Shortfall eligible for USAID funding			CFAF 775,484,188
8.	Dollar value of 25% of eligible shortfall ($1 US equals CFAF 230)			$842,917
			Rounded	$845,000

All Costs in CFA F

If no adjustment had been made, and the original formula had been used throughout the Contract, the following figures would apply:

1.	Original Contract		1,800,000,000
2.	Actualization (July 1974) (Approx. 28.4%)		511,200,000
3.	Contract Price (July 1974)		2,311,200,000
4.	Addition to Maternity Wing		
	Original	67,444,610	
	Actualization	16,725,112	
	Total		84,170,722
5.	Escalation from August 1974 to December 1976		184,635,195
	Total Contract Price (items 3, 4 & 5)		2,580,005,917
6.	Financed 1,800,000,000 (Original Contract) plus not eligible 84,170,722 (Maternity Wing Addition)		-1,884,170,722
7.	Shortfall eligible for USAID funding		695,835,195
8.	Difference between actual eligible shortfall and that shown on 7 above		79,648,993

C. Consideration of Requirements of Section 611 of the FAA

1. 611(A). The purpose of 611(A) is to assure a reasonably firm estimate of the cost of the project to the U.S. Government. Since the facilities are completed and the costs for the overrun firm, conditions of 611(A) are automatically satisfied.

2. 611(E). This section of the FAA requires certification that the host country has the financial and human capability to effectively maintain and utilize the project. A field visit to the site on April 20, 1978, verified that the only maintenance that has been provided since completion of the project was that performed by the contractor under his guarantee (which actually would fall under the category of repairing faulty construction) and cleaning services provided by three janitors. USAID/Cameroon has no evidence that a satisfactory maintenance plan exists, although the GURC was required to submit such a plan to USAID in Article 5.3 of the original grant agreement. To date very little obvious deterioration has taken place as the facility has only been completed a short time, and only a small section of it is being used. However, the hospital contains a great deal of sophisticated equipment in which latent faults or deterioration may show up when it is put into operation.

For this reason the proposed amended Grant Agreement will contain a clause that will not allow disbursement of funds for the cost overrun portion of the Grant until the GURC: (a) submits for USAID approval a comprehensive maintenance plan, including proposed staffing, and (b) evidence of adequate budget allotment to support the maintenance. Since the CUSS hospital is a large and relatively sophisticated facility, an expert in maintenance of like facilities will be provided by the project to assist GURC in the development of such a plan.

We believe these conditions will satisfy the maintenance requirement of Section 611(E) of the FAA.

AGENCY FOR INTERNATIONAL DEVELOPMENT
REGIONAL DEVELOPMENT OFFICE FOR CENTRAL AFRICA
AMERICAN EMBASSY
B. P. 817 YAOUNDE - CAMEROON

ANNEX C-3

6th September 1978

University Center for Health Sciences (CUSS)
Project Number 631-0531

Certification Pursuant to Section 611(E)
of the Foreign Assistance Act of 1961,
As Amended

I, Frederick E. Gilbert, the Acting Director of the U.S.A.I.D. Mission to Cameroon, having taken into account, inter alia:

A. That the Government of the United Republic of Cameroon (GURC) has recently appointed a Director of the CUSS Hospital who has related to USAID/Cameroon that he will push for development of a maintenance plan for the hospital; and

B. That the Minister of Health has written, informing USAID/Cameroon that he was sending a written recommendation to the Minister of Economic Affairs and Planning to enter into negotiations with an organization to train personnel for maintenance of the CUSS Hospital; and

C. That the Organization for Rehabilitation Training (ORT), of Geneva, has submitted to GURC a proposal to develop a project to provide maintenance for the hospital and train maintenance personnel; and

D. That the disbursement of funds proposed in the CUSS Project Paper Revision for AID participation in the original construction cost over-runs will be contingent upon the GURC's submitting for USAID approval: (a) a comprehensive maintenance plan, including proposed staffing and (b) evidence of adequate budget allotment to support the maintenance of the CUSS Hospital;

do hereby certify that in my judgement the CUSS will have the financial capability and the human resources capability to maintain and utilize effectively the CUSS Hospital provided A.I.D. contributes the proposed amount of $845,000, or thereabouts, to the final settlement of the general construction contract.

Frederick E. Gilbert

Frederick E. Gilbert
Acting Director
USAID/Cameroon

ANNEX C-4

Environmental Examination

Project Location:	Cameroon
Project Title:	University Center for Health Sciences (631-0531)
Funding:	FY1972-FY1978, $5,126,000
Life of Project:	FY1972-FY1979
IEE Prepared by:	Albert E. Henn, M.D., MPH
Date:	23 June 1978
Environmental Action Recommended:	Negative Determination

Concurrence: _____
Frederick E. Gilbert, Acting Director, USAID/Cameroon

Bureau for Africa Decision:

(Approval or Disapproval of Environmental Action Recommended in the IEE)

Approved: _____

Disapproved: _____

Date: _____

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Environmental Examination

Narrative Discussion

Project Description:

The University Center for the Health Sciences (CUSS) project was started in FY1972 and is scheduled for completion in FY1979. All of the project's construction has been completed, and the technical assistance will be completed in one year. The new Project Paper is being submitted at this time to provide for the final commitment of funds to the project.

The environmental impact of the construction element of the project was a principal concern of the main architect, who designed the other buildings of the University of Yaounde of which CUSS is a part. The architectural style makes wide use of local materials and respects the basic patterns of land contours and trees. Careful attention has been given to the handling of wastes produced by the hospital and to the provision for adequate run-off of rain water from the hospital site.

The training activities engaged in by the project technicians include giving attention to health education and sanitation efforts which are designed to make Cameroonians more aware of their relationship with their environment and better able to intervene when the environment threatens their health.

Identification and Evaluation of Environmental Impact

As aforementioned, the facility has been completed so the environmental effects are those as noted rather than predictive effects.

1. Land Use. The CUSS site is in the urban area of Yaounde, and is by far the most attractive facility in the area, perhaps in the entire city. The grounds have been landscaped to prevent erosion, and an inspection one year after completion of construction indicated no adverse effect to the property caused by this construction.

2. Water Quality. The CUSS is connected to the city sewerage system and has no adverse effect on the quality of the water.

3. Atmospheric. The hospital creates no atmospheric pollution.

4. Natural Resources. Not applicable.

5. Socio-economic. No change in basic population patterns were caused by the construction of the facility. There will be a definite change in the employment picture, as the complex will employ a large number of professional and non-professional personnel. This will have a positive effect on the economy of Yaounde, and no adverse side effects are foreseen.

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6. Cultural. There will be no effects on the existing culture or cultural heritage of the people.

7. Health. The beneficial effects on the health of the population through the installation of a new and modern hospital are obvious.

IMPACT IDENTIFICATION AND EVALUATION FORM

Impact Areas and Sub-areas 1/	Impact Identification and Evaluation 2/
A. LAND USE	
1. Changing the character of land through:	
a. Increasing the population	N
b. Extracting natural resources	N
c. Land clearing	N
d. Changing soil character	N
2. Altering natural defenses	N
3. Foreclosing important uses	N
4. Jeopardizing man or his works	N
B. WATER QUALITY	
1. Physical state of water	N
2. Chemical and biological states	N
3. Ecological balance	N
C. ATMOSPHERIC	
1. Air additives	N
2. Air pollution	N
3. Noise pollution	L
D. NATURAL RESOURCES	
1. Diversion, altered use of water	N
2. Irreversible, inefficient commitments	N
E. CULTURAL	
1. Altering physical symbols	N
2. Dilution of cultural traditions	N
F. SOCIOECONOMIC	
1. Changes in economic/employment patterns	M+
2. Changes in population	L
3. Changes in cultural patterns	N
G. HEALTH	
1. Changing a natural environment	N
2. Eliminating an ecosystem element	N
H. GENERAL	
1. International Impacts	N
2. Controversial impacts	N
3. Larger program impacts	L+

1/ See Explanatory Notes for this form.
2/ Use the following symbols: N-No environmental impact
L-Little environmental impact
M-Moderate environmental impact
H-High environmental impact
U-Unknown environmental impact

OPTIONAL FORM NO. 10
MAY 1962 EDITION
GSA FPMR (41 CFR) 101-11.6

ANNEX D

UNITED STATES GOVERNMENT

Memorandum

MAR 27 1974

TO : PHA/POP, R. T. Ravenholt

DATE: March 20, 1974

FROM : PHA/POP, Willard H. Boynton WHB Report

SUBJECT: Report of Field Trip to Cameroun - February 25 - March 2, 1974

Objective

To participate as an observer in the UNDP Commission to make a mid-project evaluation of CUSS (French initials for University Centre for Health Services). A second objective was to evaluate the project as a Title X activity.

Evaluation

The CUSS project is one of the best conceived public health projects which AID has undertaken and therefore deserves high priority of support as an AID project. The concept of training Central and West African doctors to practice outpatient and domiciliary medicine in rural areas of Africa with emphasis on preventive measures, rather than scientific hospital medicine in Paris or New York is an essential step forward in meeting African health needs.

The use of Title X funds for the total cost of AID's contribution to the CUSS project is a gross misapplication of funds. During the first five years of the project there has been no family planning content and a realistic appraisal suggests that at best family planning will be only a very minor part of the CUSS project in the future.

Summary of the CUSS Project

The CUSS project has three major objectives:

1. To train doctors, nurses and other health team members together in a functional manner which will enable them to work as a health team to provide medical services in rural areas adapted to the social, economic and health conditions of the African area.

2. To provide comprehensive health care in selected areas to be used for demonstration purposes.

3. To do operational research that will result in a better understanding of how to provide curative and preventive health services to rural African populations.

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Training

About 40 medical students are in the fifth year of a teaching program oriented to functional field service rather than urban hospital service. Five of these students are from countries other than the Camerouns. About 45 nurses are now receiving graduate training. Some 17 students are taking such technical subjects as pharmacy and laboratory technology. Training as members of a health team has been instituted as has field training at Mvolye and Bamenda.

Comprehensive Health Care

Comprehensive Health Care is now being provided at Bamenda, a well organized first class health center in an essentially rural area in the former British Camerouns. Although this field training center is some distance from Yaounde, it was chosen because the British had established a system of health centers providing both curative and preventive services, whereas, none such existed in the French section of the Camerouns. I was able to visit the Mvolye clinic located near Yaounde. There I met fifth year medical students who had just finished six weeks training at Bamenda and were now participating in the training at Mvolye. The Mvolye Clinic is an MCH Center largely devoted to prenatal care. It is planned to extend the services to the whole district. The students see not only patients in the clinics but also follow some of the cases they see in the homes. The students seem to be intelligent, well-directed and knowledgeable about the program. They seem to have an attitude toward the provision of service and the use of preventive techniques which is unusual amongst medical students in developing countries.

Operational Research

Operational Research has not really been attempted on any scale yet. Now that the Canadian Public Health Center at CUSS has been completed and staffed with nine Canadians, it is expected that more emphasis will be given to preventive medicine and operational research.

Facilities

At the CUSS site an administrative building has been completed with offices, library, cafeteria etc.

A biomedical building has been completed where the students can study such basic medical sciences as pathology, bacteriology, biochemistry, etc.

A very large public health building has just been completed and is not yet fully equipped. This was paid for and staffed by the Canadians.

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Plans have finally been completed for a 150 bed hospital and outpatient facility on the CUSS site. At the time of my visit it was said that the contract for construction was about to be signed. USAID is expected to pay for $1.9 million of the construction cost with the remainder to be paid for by the Camerounian Government and other donors.

A student pavilion has been completed at the central hospital in another part of town. This building has not yet been put into operation but the necessary equipment is nearly complete. This will serve as a headquarters for medical students assigned to clinical training at the hospital and will give them adequate outpatient facilities.

There is a small clinic building at Mvolye where field training is done on a limited scale at this time. The training is expected to be expanded to include the whole district and to provide comprehensive health services with emphasis on preventive medicine, outpatient and domiciliary treatment.

There is a large field training center at Bamenda where CUSS students spend six weeks getting field experience in a health unit designed for outpatient medical service, and preventive services in the field.

AID's Contribution

The PROP proposes that AID will contribute $3.5 million toward a total of $9 million for the CUSS project. The remainder will be provided by the Government of France, the Government of Canada, WHO and the Government of the Federal Republic of Cameroun. AID obligated up to $2.5 million in a 1971 project agreement with the Government of the Federal Republic of Camerouns (GSRC). Of the $2.5 million already obligated by AID, $700,000 has been awarded for a contract with Harvard University to supply four technical advisers, two physicians and two nurses. Dr. Noel Guillozet and nurse Nancy Garrett are in the Camerouns. An obstetrician-gynecologist and a nurse-midwife are yet to be recruited. Since the doctor and nurse on board have a total of only five man months of service, the $700,000 in the contract should last for a considerable period. The remaining $1.8 million is to be used to pay for AID's share of the construction cost. Since the construction contract has not yet been signed and the construction is estimated to take three years, it would seem that new funds will not be needed in the near future. The cost of the 150 bed hospital and outpatient facility is now estimated to cost $800,000 more than has been provided. The African Bureau has suggested that Title X funds for this purpose should be increased. The Mission Director informed me that the Camerounian Government has agreed to pay for the increased cost of the building above the original planned cost. In view of the lack of relevance of this project to Title X, the planned Title X contribution should certainly not be increased. As a matter of fact the original $2.5 million contribution and the planned

AID

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future $1 million contribution constitute questionable use of Title X funds and should be reviewed before any future obligations are made.

Grant Agreement

Grant agreement with the GFRC was signed December 8, 1971. This provided for funds not to exceed $2.5 million, with auditing and inspection rights and a condition that in extraordinary situations, which would make it improbable that the purposes of the grant should be obtained, the grant could be terminated. Under the agreement, AID will support the cost of the construction of the outpatient center and of the second floor hospital ward areas for maternity and pediatrics, which will consist of 30 beds for each subject. In addition, scholarships, short-term consultants and temporary US faculty support would be provided. The agreement discusses the proposal to construct the hospital and specifically limits the hospital facility to 150 beds, because the purpose of the project is to develop a new type of medical service not dependent upon large scale hospitals, but rather upon outpatient and domiciliary practice.

On December 8, 1971, when the project agreement was signed, the Minister of Plan wrote a letter to the US Ambassador taking exception to the one mention of family planning in the project agreement, which is about a six or eight page document. One of the last paragraphs of the project agreement, which seems to be an afterthought, mentions that as regards the program for the protection of mothers and infants, the activities of the American personnel will include the teaching of the spacing of births considered as a means of improving the health and protection of mothers and infants. The Minister of Plan replied, indeed the Government of the Republic of Cameroons hasn't proposed, in consideration of the population figures for the Republic of Cameroons, to put in effect either the policy of family planning nor that of the voluntary spacing of births. The exact French wording of these two is as follows:

> "En ce qui concerne le programme pour la protection maternelle et infantile, les activites Américain comprendrant un enseignement sur l'Espacement des Naissances, considéré comme nogen d'ameliorer la sante et la protection de la mére et de l'enfant."

The Minister of Plan takes exception to the above in a letter to the U. S. Ambassador dated December 8, 1971.

> "En effet, le Gouvernment de la République Fédérale ne s'ect pas proposé, compte tenu du chiffre de la population de la Republique Fédérale du Comeroun, a mettre en oeuvre ni la politique de planning familial ni celle de l'Espacement Voluntaire des Naissances. Il va sans dire qu'a moins quedes

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considerations d'ordre purement technique n'interviennent pur justifier la poursuite de ces activities, non Gouvennment nele jugera pas opportun de se prononcer sur les intention des techniciens mis a sa disposition et qui serant appeles a exercer ces activities."

Family Planning at CUSS

There is considerable evidence that the CUSS project does not include family planning.

1. In 1971 the Minister of Plan of the GFRE clearly stated the Government does not have a policy of family planning or voluntary birth control.

2. In December 1973 the President of the GFRC stated that the Camerouns need 10 not 5 million people.

3. Dr. Emu, Director of Internal Medicine at the Central Hospital, told me the GFRC would not permit family planning until the present population of 6 million increases to 15 million.

4. The Camerounians seem to be very religious with a prominent Catholic segment.

5. Dr. McBean of OCEAC thinks Cameroun would not be a good area for a CDC disease control and family planning project because the Camerounians are not ready for family planning.

6. Dr. Martin of the Mvolye Clinic was harrassed by the policy for doing family planning before joinging CUSS.

7. The Harvard Team beliefs family planning can be done only as a health measure and must be introduced very, very slowly with many restrictive measures.

8. The objectives of CUSS do not include family planning.

9. Dr. Henn, the person proposed for the post of population officer at Yaounde, attended the "Journees Medicales" held at CUSS in December 1973. He reported that the afternoon devoted to fertility and sterility dealt with the management of problems which threatened to reduce the birth rate. Population growth was clearly an expressed priority. He further states in his report that:

"It will serve AID/POP well to capitalize on President Ahidjo's stated goal of doubling the population to 10 million. This may be attempted by presenting basic components of family planning, such as health education concerning human sexuality and child

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spacing, as integral parts of maternal-child health curriculums designed to safeguard the health and productivity of the mothers and the future generations of Cameroun. The French term, 'naissance diserable,' coined in Niger and Zaire expressed the emphasis that seems indicated."

10. Most important of all no family planning has been done in the CUSS project during the first five year's of its existence.

On the other hand there is some evidence that a minimal amount of family planning may be introduced into the CUSS project in the future.

1. The French laws against family planning are held to be invalid.

2. The Deputy Minister of Health is said to be very pro family planning.

3. USAID/Yaounde would like to do family planning but admits the government's reluctance and the necessity for extreme caution.

4. Dr. Monekosso, Director of the CUSS project, states flatly that he will introduce family planning into CUSS.

5. Dr. Martin, Director of Mvolye Clinic, recognizes the need for family planning, has experimented with it, finds a big spontaneous demand for it, and wants family planning supplies. However, Mvolye Clinic is beside the Archbishop's home in a Catholic area and there is some question as to whether family planning can be done in this area. Moreover, Dr. Martin and Nancy Garrett want to charge two to three hundred francs ($1.40) for a cycle of pills to get funds to buy medical equipment. This will put the provision of pills on an ethical basis, i.e. only those who demand them vigorously will get them and, therefore, the clinic will not be responsible for promoting promiscuity. They seem to believe that it would be unethical to provide oral contraceptives to anyone who wants them without providing a severe financial penalty.

6. Carl Hemmer was able to arouse some interest in GETEMPO when he visited Yaounde and discussed the subject with a regional planning office.

UNDP Mission

Although the UNDP Mission was in the field at Bamenda, when I arrived in the Camerouns, I was able to attend the final debriefing session with the Chancelor of the University, the Deputy Chancelor, the Dean of Sciences, the Director of CUSS, Representative of the Donors and several other Camerounians. The UNDP Team consisted of Dr. Kessler, a German citizen and private medical consultant as the Chairman,

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Dr. Bannerman of WHO's MCH section, and Dr. Deeke, a Togolese doctor. Dr. Deeke opened the meeting with a few of the usual nice generalities. Dr. Bannerman made one of the frankest presentations I have ever heard come from a WHO representative. He stated that the central hospital at Yaounde was dirty and poorly operated. He was very negative on the possibility of the construction of a 1,000 bed hospital. He pointed out that it was not needed, that it would absorb too much manpower, and that the existing central hospital was perfectly adequate if it were properly operated and cleaned up with some soap and water. Since 80% of the Camerounians are rural they need basis medical services, not an elaborate central hospital. It is better to operate the existing hospital, which could be put in good shape, rather than to build a new one which would be much more complex to operate then the existing one. He admitted that a reference hospital would be useful but stated that a hospital should be built only after 80% of preventable diseases have been eradicated. He noted that the faculty of CUSS was one-half Camerounians and one-half expatriate, and urged that more Camerounians be put on the staff. He concluded that the projects should continue despite of the problems which are essentially national problems rather than project problems.

Dr. Kessler stated that the project had the correct philosophy and a correct approach to teaching medicine to meet African conditions. He noted three major problems.

1. Administration. He stated that Dr. Monekosso had too many duties. He was supposed to be the philosophical director, developer of the curriculum and chief administrative officer. He stated that the teaching staff did not know how they relate to each other and did not know what budget is available. He thought there is a great lack of communication among the various components of CUSS.

2. Transport. He noted that field services were dependent upon a transportation system which was not operative. There were inadequate vehicles and those available were not functioning. He admitted that maintainence of vehicles is difficult and expensive, but felt that it was a must if the project was to be successful.

3. Facilities. Dr. Kessler admitted that buildings were well constructed but felt they were not functional. Specifically, he felt there was inadequate storage space and several classrooms were too small for their purposes.

The UNDP group seemed to conclude:

1. The present evaluation was a mid-stream evaluation and could not be considered a final judgment. The students would have to be working in the field before a final judgment could be made. This

evaluation was useful to correct course rather than to make a final decision.

2. They recommended a strengthening of the administration, particularly, as regards faculty communication. They specifically recommended that job descriptions be clarified and that the director of the project share more administration with his staff.

3. They felt that the project could not be successful without an increased emphasis on providing adequate transport with adequate maintenance.

Conversation at the meeting was largely in French. I was able to get the gist of most of the conversation but not all. I checked my interpretation with others after the meeting. The Camerounians seemed to accept the criticism of the UNDP team reasonably well. Dr. Monekosso was somewhat upset by the specific allegation of poor administration and did his best to refute it.

There was considerable discussion about the possibility and feasibility of building a 1,000 bed hospital. The UNDP and AID are very opposed and it would be contrary to the PROAG. Some Camerounians were pro and some con on this issue. AID must continue to be alert to this issue as such a hospital would be very detrimental to the philosophy of the project.

A Dean of Sciences at the University spent considerable time criticising the curriculum for being weak in the sciences and training doctors who are not competent scientists. The Deputy Chancelor responded in clear French which I could completely understand. He stated very clearly and succinctly that the purpose of the project was not to train scientific physicians to practice scientific medicine for the elite urban people in a large central hospital. He correctly understood the purpose of the project to be to train doctors to function in rural areas of Africa where they would provide outpatient and domiciliary care with emphasis on preventive services. For this purpose, it is more important to understand the common diseases that afflict the populace and to understand the social conditions which permit those diseases to be transmitted then it is to be thoroughly grounded in science. The emphasis of this project is community medicine not science.

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OPTIONAL FORM NO. 10
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GSA FPMR (41 CFR) 101-11.6

UNITED STATES GOVERNMENT

Memorandum

TO : PHA/POP, R. T. Ravenholt

DATE: March 21, 1974

FROM : PHA/POP, Willard H. Boynton WHB

SUBJECT: Report of Field Trip to Togo - February 28, 1974

During the recent review of the Danfa Project, Clay Miracle, Morric Blumberg and I played hooky for one day to travel to Togo by car to discuss the proposal of the American Embassy of Togo to assist the Togolese Government in a population program.

The proposal started two or three years ago very modestly and has expanded very rapidly. Originally, it was planned to use $10,000 of Ambassador's discretionary population fund to construct a $10,000 family planning building. Over the years the proposal has escalated to a $200,000 MCH and family planning facility. During the last three months, Ms. Watts, an ex-Peace Corps volunteer, fluent in French and knowledgeable about Togo, has been working with the Embassy and the Togolese Government to develop the proposal.

The Ambassador was preoccupied with what he considered to be urgent matters and we spent a couple of hours discussing the subject with the DCM and Ms. Watts. It seems that when the project was first considered a couple of years ago, the Embassies were urged to develop population programs. The Ambassador feels he was following AID guidance by promoting a family planning proposal and he believes he was encouraged to do this by our Regional Population Office.

I explained the AID PHA/POP position as follows:

Two years ago we were urging Embassies to initiate population program actions. Since that time a reduction of available program funds, and the prioritization exercise resulting therefrom, has changed the picture somewhat. We never did favor using a high percentage of program funds for construction nor for MCH purposes, but always had the policy guideline that Title X funds would be used to pay for the incremental cost of adding family planning services to health services rather than to pay for the development of a health infrastructure. Experience has demonstrated that in general, construction of facilities delays rather than expedites the operation of a family planning program. The Ambassador's special population fund or SPF is limited to $50,000 per year and must be confined to Title X eligible activities. One can expect that GAO will audit it on that basis.

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As diplomatically as possible, we tried to convince the DCM that it would not be realistic to expect to receive approval for $200,000 for an MCH/Family Planning building in Togo. Since the Embassy felt they had made commitments to the Togolese Government at the behest of AID, I suggested the following:

The Embassy and Ms. Watts should notify the Togolese Government as soon as possible that the original $10,000 construction could not be expanded beyond the $50,000 limit for the Ambassador's SPF allowance. In addition to that, PHA/POP would be prepared to provide any necessary contraceptives and perhaps limited family planning equipment such as medical kits. We would also consider providing family planning training for a limited number of participants out of world wide training funds.

I tried to make it clear that that was the best we could do to permit the Ambassador to be forthcoming in the matter of his commitment. I pointed out that the Ambassador's commitment could only be considered conditional without any written agreement and that I could not promise the resources I had mentioned, but would be an advocate for them at AID/W. The discussion led to the proposal that a $100,000 building might be funded by $50,000 in FY 74 and $50,000 in FY 75 from the Ambassador's SPF. I pointed out that this would probably be considered a subterfuge to get around the $50,000 limitation. It would provide for more construction then we would like to see and it might very well lead to no funds available in the SPF for FY 75.

I believe AID/W should provide the assistance I mentioned even though Togo is a low priority country. The Embassy and Ms. Watts convinced me that Togo wants to get started in family planning. Togo has more health resources than most African countries and exports doctors and administrators to other countries. Thus they could play a role out of proportion to their size in popularizing family planning in Africa.

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ANNEX E

PROGRESS REPORT TO U.S. AGENCY FOR
INTERNATIONAL DEVELOPMENT UNDER
Contract AID/afr-1049
in support of the
Harvard University Project at the University
Center for the Health Sciences (C.U.S.S.), University
of Cameroon, Yaounde, Cameroon

prepared by

Charles A. Janeway, M.D.
Campus Coordinator,
with assistance from
Noel Guillozet, M.D.
Project Director
and
Pierre Drouin, M.D.

September 10, 1975

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I. GOALS OF THE PROJECT

In providing preliminary information for prospective contractors concerning "U.S.A.I.D. Technical Assistance to the University Center for the Health Sciences (C.U.S.S.)/Yaounde," Dr. Stephen Joseph, as C.U.S.S. Project Manager, U.S.A.I.D., described C.U.S.S. "as a model project to demonstrate solutions to some of the fundamental needs in the development of health services in the context of African countries." These needs included:

"(a) the production of appropriate health manpower to staff a health infrastructure;

(b) the development of basic health services by which, under conditions of extreme scarcity, optimum health care for the mass of population can be disseminated;

(c) an emphasis on public health, preventive medicine, and primary health care services, rather than on more expensive and over-sophisticated specialized facilities and techniques, and

(d) the attempt to link child-spacing and family-planning services to the provision of generalized maternal and child health services and family health care."

Originally planned by the Government of Cameroon and WHO, with support from both these sources and the technical assistance agencies of France, Canada and the U.S.A., CUSS was "conceived as a regional institution for training physicians and other health workers in a fashion relevant to the African setting, with much greater emphasis on integration of public health, preventive medicine and clinical medicine and implications for extending to all the population low-cost methods of health protection and improvement."

It was this challenging conception of education for the health professions that led Harvard University to apply in 1973 for a contract with U.S.A.I.D. to permit the recruitment and support of a faculty team for technical assistance to the CUSS over a four year period in the broad field of maternal and child health. The purposes of the contract were stated as follows:

"(1) to provide a home office at Harvard," headed by the Project or Campus Coordinator, "who will be responsible, on behalf of Harvard University, for implementation of the contract and for liaison with the faculty team in the field;

(2) to provide a well-qualified faculty team in Yaounde whose mission it will be to provide and develop teaching in pediatrics, child health and community medicine, and in obstetrics, gynecology and family planning for students in the health sciences, with strong emphasis upon the development of personnel who can enter community-oriented programs of health service, adapted to the needs of the predominantly rural, developing, but economically poor region of Africa, surrounding and including Cameroon;

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(2) to develop relationships between CUSS and institutions in the U.S.A., particularly Harvard, which will permit continuing contacts when the four year period of the contract has expired, so that, through exchanges of students and teachers, U.S. institutions will be enabled to assist the faculty of CUSS and to provide opportunities for their own faculties to learn at first hand about health problems in this region of Africa."

A contract, covering a period from the summer of 1973 through provision for precontract expenses, was signed by Harvard University and USAID on November 29, 1973, to support the first phase of this proposal through September 30, 1975. This Progress Report, with its recommendations for future development of the Harvard-CUSS Project, is intended to serve both as a report on activities carried on under the current contract and as the basis for renewal of the contract for an additional three years, in other words, to terminate in September 1978.

II. DEVELOPMENT OF THE PROJECT

A. The home office at Harvard University, was established at the Children's Hospital Medical Center, 300 Longwood Avenue, Boston, MA 02115, which serves as a major teaching facility for pediatrics at the Harvard Medical School, and which is located in close proximity to the Harvard Medical School, School of Dental Medicine and School of Public Health. In addition, it is very near to the Boston Hospital for Women and Beth Israel Hospital, where teaching in obstetrics and gynecology is centered, as well as to the Peter Bent Brigham and Robert Breck Brigham Hospitals, which, with the neighboring Beth Israel Hospital, provide about one-half of the Medical School's clinical teaching in medicine and surgery.

Dr. Charles A. Janeway was appointed Campus Coordinator while he was still Head of Harvard's Department of Pediatrics at the Children's Hospital, a position from which he retired in May, 1974, with the arrival of the new Head, Dr. Mary Ellen Avery. He now remains an active Professor of Pediatrics at Harvard Medical School, and has moved his office to the 9th floor of the Research Building of the Children's Hospital Medical Center (telephone number: 617-734-6000, extension 3491). Experience of the last two years has shown that the duties of Campus Coordinator occupy approximately one-third of his full time. His principal qualifications are long experience in teaching and research in pediatrics, child health and community medicine, first hand knowledge of the Harvard Medical School, its faculty and affiliated institutions, considerable experience in child health and medical education in developing countries, and valuable international contacts through service as a member of the Administrative Board of the International Children's Center in Paris.

His secretary, Mrs. Nancy Hurst, has worked with him for six years and serves the Project half-time in the home office, filling both secretarial and administrative functions, with invaluable support

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from the University's administrative services, particularly its Office for Research Contracts, where Mr. Stephen Atkinson has worked closely on this contract.

B. The Field Director, or Chief of Party in Yaounde, Dr. Noel Guillozet, was recruited in the summer of 1973 with the assistance of Dr. Emanuel Suter, head of the Division of International Medical Education of the Association of American Medical Colleges. Dr. Guillozet had served overseas as a medical student in Latin America and as a Peace Corps doctor in India and had a background of very practical experience in running a community health and medical care program in rural California. This program not only integrated the services of private practitioners, the local hospital, and a government sponsored and supported health program for indigent agricultural workers, so as to provide comprehensive care to the whole population, but also utilized the services of para-professional health personnel, and provided teaching for medical students from Stanford University.

His combination of knowledge and experience in clinical pediatrics and the organization of rural health services, together with fluency in French and his willingness to work hard and to find ways around obstacles and frustrations, has been invaluable in the organization of the program in Yaounde. His wife and four children have adapted well to life there and have made their home a place where visiting Americans, as well as Cameroonian and other foreign colleagues, have been made to feel at ease.

C. Recruitment of the Rest of the Team. Dr. Guillozet actually joined the Project in August, 1973, and worked closely with the home office on recruitment of the rest of the team. It turned out to be much more difficult than we had expected to find suitable candidates in the U.S.A. with the necessary qualifications, experience and linguistic ability, and it was not until about a year after signing the contract that the task was completed, in the fall of 1974. The final composition of the present field team, which has been in place since October, 1974, is as follows:

1. Pediatrician and Chief of Party - Noel Guillozet, M.D., Hahneman Medical College 1964. Trained in pediatrics at Cleveland Clinic, 1967-69, assigned as USPHS physician to Peace Corps in India 1965-67, Physician with King City, California, Rural Health Project from 1969-73 and its Director from 1971 to 1973. Clinical Assistant Professor of Community and Preventive Medicine, Stanford University, he was appointed Lecturer on Pediatrics and Director of the Harvard-CUSS Project, Yaounde, Harvard Medical School and Lecturer in Maternal and Child Health, Harvard School of Public Health, for the period of his services in this Project. Appointed at Harvard from September 1, 1973, he arrived in Yaounde in November 1973. Married, with four children.

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2. Obstetrician-Gynecologist with interest in public health and family planning - Pierre Drouin, M.D., University of Ottawa 1968. Trained in surgery at the Montreal General Hospital 1968-70, in obstetrics and gynecology at Ottawa 1970-73, serving as Chief Resident in Gynecology and Obstetrics from 1972-73, and in Gynecologic Pathology at Ottawa in 1973, he had an experience in active practice of his specialty before joining the Project. He was appointed Instructor in Obstetrics and Gynecology at the Harvard Medical School from October 1, 1974 and arrived in Yaounde during that month. His wife and four children joined him there in December, 1974.

3. Pediatric Nurse, with Public Health Experience - Ms. Nancy Ruth Garrett received her nursing diploma from St. Paul's Hospital, Vancouver, B.C. in 1958, her B.Sc. in Nursing Education from Teacher's College, Columbia University, in 1967 and an MPH with a major in population planning from the University of Michigan in 1971. Besides nursing experience in the United States, Canada, France, and Australia, she had served from 1967-69 as Public Health Nurse Instructor in the Regional Family Planning Centre, Medical College and Hospital at Robtak, Haryana, India, during which she planned and evaluated field training for health personnel and lectured to both nursing and medical students. She joined our Project after two years as Joint Medical Director of Canadian University Services Overseas and two years as Research Officer for the Canadian Nurses Association.

4. Nurse-Midwife with Family Planning Experience - Ms. Lise Cousineau received her B.S. in Medical Technology from the University of Montreal, nursing training at Epsom District Hospital in England, with a B.A. in nursing from McGill University in 1970. She received her British Certificate in Midwifery from Simpson Memorial Maternity Pavilion in Edinburgh in 1964. She has had extensive overseas experience in Algeria 1956-58, in Tunisia 1966-67, and as a consultant in Senegal, Ecuador and Colombia and in Zaire. She joined our team after three years as Assistant Professor in the Family Planning Course of the Department of Obstetrics-Gynecology, Downstate Medical Center, State University of New York, where she was engaged in training foreign midwives in family planning.

D. Development of Work Plan. The major tasks of the Team Leader, Dr. Guillozet, during his first winter in Yaounde were: (1) Finding housing, first, for himself and his family, and then later for the other members of the team; (2) the estimation of needs for supplies and equipment and the often very difficult job of getting them through customs and off the dock at Douala; (3) the establishment of working relationships with the Director, administration, and faculty of the CUSS, particularly in Pediatrics and Obstetrics and Gynecology, and with U.S. officials in the Embassy and AID Mission;

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(4) the development of an appropriate work plan for the Project within 90 days of his arrival, as specified in the Contract.

These tasks are enormously time-consuming, and suitable allowance of time should be given every team leader in advance of the arrival of his team for these purposes in any new project initiated in a developing country. Suffice it to say that leases for houses for all the team members have been obtained and should serve for the duration of the Project. In addition, the major items of equipment--three vehicles, furniture for the houses, supplies and equipment for simple laboratory procedures, as well as basic medical and surgical supplies and books--have been ordered, shipped and finally delivered in Yaounde. Nevertheless, serious difficulties are created and long delays engendered by policies which specify the purchase of only American made equipment and its shipment in American carriers in a region where all the natural lines of communication are to France and the standard equipment with which technicians and mechanics are most familiar is French. U.S. officials, the Ambassador and his staff, and the members of the USAID Mission in Yaounde under Mr. Koehring, have been tremendously helpful in assisting communication and in smoothing out difficulties, particularly those encountered in the shipment and delivery of supplies and equipment.

The work plan was developed by the Chief of Party during his first 90 days in Yaounde and submitted on January 31, 1974 to the Technical Committee of CUSS through its Director, Dr. G. L. Monekosso. This was an essential first step, since the Plan had important implications for the curricula affecting both medical and nursing students. The broad outlines of the program envisaged by the Work Plan were unanimously approved by the Technical Committee of CUSS on 15 April 1974, and, after some revisions in light of their discussion, the final Work Plan was submitted by Dr. Guillozet to Mr. Koehring, Director of the Regional Development Office, USAID, Yaounde, on 24 April, 1974.

The purpose of the Harvard-CUSS Project was stated as follows:

"...to assist the University Center of the Health Sciences in a threefold 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. Curricula 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."

In order to accomplish this purpose, a CUSS sponsored and operated maternal and child health program based at the Central Hospital, the main focus of clinical teaching for CUSS, was proposed with these features:

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(1) to be kept small and manageable to permit it to function primarily as a teaching and demonstration unit;

(2) its services, to mothers and infants before and after delivery and in interpregnancy periods, to include nutritional advice, immunization on a fixed sequence during the baby's first year, and family planning and child spacing advice as requested by mothers and fathers;

(3) its educational role to demonstrate to students the efficacy of well-organized, systematic and continuing health maintenance services provided by a team in improving child health and diminishing the overwhelming burden of preventable disease;

(4) to provide opportunities for simple, relevant research upon maternal and child health, including the development of a normal growth curve for Cameroonian children.

III. IMPLEMENTATION OF WORK PLAN

A. The CUSS Pavilion. It was fortunate that CUSS had constructed a Pavilion for teaching at the Central Hospital, Yaounde, where students spend the major portion of their time during their 3 1/2 years of clinical experience. The Pavilion contains clinic space and facilities, a large room for group teaching sessions, used by various clinical departments for lectures, seminars and demonstrations, offices, a laboratory for students and living quarters upstairs for those on night duty.

Dr. Guillozet and Ms. Garrett have their offices in this building, which adjoins Pavilion Beaudeloque of the Central Hospital, housing its pediatric service. The team has created and stocked a modest 24 hour a day reference and general library for students, and has had much to do with supervision of the equipment and functioning of night duty facilities, including the student laboratory. Thus, this building, which was mostly unfurnished at the start of the Project is "now in use for the first outpatient care-directed programs at Central Hospital, student laboratory and as a hub for clinical academic activities."

B. Establishment of Maternal and Child Health Program at CUSS Pavilion.

1. The first prenatal and maternal and child health teaching clinic at Central Hospital was opened in October, 1974. A limited number of expectant mothers are being enrolled from the heavily overpopulated P.M.I. (Protection Mère et Enfant) run by the Ministry of Health which is next door to, but totally separate from the Hospital. "The goal is a demonstration to students of medicine in years 2 and 3, and nursing students of different stages who participate in the effort,

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of the value of systematic services and their execution to prevent marasmus, kwashiorkor, anemias, diarrhoeas and often lethal infectious diseases of childhood seen so frequently in Yaounde." This is the "only clinic in the city where mothers are regularly followed and their children assured of all basic immunization services and nutritional counselling. Family spacing assistance is also regularly available for mothers and fathers."

By April, 1975, some 90 mothers had been enrolled in the program, some babies had already been born, and were being systematically vaccinated and followed for height, weight and minor health problems. It is assumed that by the end of a year or more, there should be enough infants followed to project a well-child growth curve, and a "well-nourished and protected control group of children will have been established for future studies," which may be of interest to the pediatric staff or to other members of the CUSS staff.

Mothers enrolled are those who live near enough to the Hospital to be able to attend clinic regularly, who are motivated, often by having lost children through preventable disease, and whose interest is sustained by the services they and their infants receive, and by the payment of a small fee to defray the cost of vaccine. Numbers in the clinic are growing at a slow steady rate. It is held two mornings a week. Expectant mothers are given tetanus toxoid, if not previously immunized, in order to prevent neonatal tetanus in their babies and are given simple pre-natal care, nutritional advice for themselves and for the health of their expected baby.

Once the baby is born, at the Central Hospital, mother and infant are seen together, the mother being given follow-up obstetrical care and child-spacing contraceptives and advice if she desires it. She is given a colorful growth and vaccination card, on which are recorded the child's growth and his immunizations, which will be valuable at the time of school entry (Appendix A). The infant receives the standard DPT/oral polio/measles series of immunizations, is weighed and measured at his regular visits with his mother. A great deal of attention is given to nutritional advice--to maintain breast feeding throughout the first year, but to supplement it with readily available, low cost, good quality protein food during the latter part of the first year. Two native women--one a mother, the other a grandmother, illiterate but highly intelligent--are being employed to teach the mothers about nutrition in a culturally acceptable and understandable manner under the direction of the nurses and nutritionist assigned to the Pavilion by CUSS.

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The Clinic is run and staffed by nurses and their aides, but with overall supervision by the members of the Harvard team. It represents an overall team effort, which should continue on its own momentum provided it has consistent backing from someone in the CUSS faculty, for its basic purpose is demonstration of a simple model health service to students. Medical students participate in their third year, weighing, measuring and examining infants and hopefully gaining some concept early in their clinical careers of team organization in the systematic delivery of basic health services. In addition to the two regular weekly sessions of this Maternal and Infant Health Clinic, the team pediatrician is available every morning to see infants who are being cared for in this Program, for any minor illness or problem.

2. Immunization Clinic. Noting that "no vaccines or provisions for immunization" had ever been available at the Central Hospital as the major inpatient and emergency outpatient facility in Yaounde, Dr. Guillozet and his Cameroonian colleagues on the pediatric staff of the Hospital "opened up an immunization program for discharged (post-hospitalization) children in February 1975 to demonstrate to students the importance of both outpatient follow-up of vulnerable children and their future protection." This program, carried out every Friday, has now been in operation for six months without a break, and is the one working regular immunization clinic in town. Since measles accounts for one quarter of all pediatric hospital admissions and one-half of the deaths of hospitalized children, the importance of effective routine immunization is underscored.

   An interesting sidelight is the finding, as a result of a questionnaire survey, that less than half of the responding medical students in the fifth year had ever been immunized against tetanus, a figure no different from the percentage in the first year class. As further evidence that preventive medical teaching had not yet had a great impact upon the students, it was found that, in a number of cases, their own children had very incomplete immunization records. Therefore, immunization services have also been made available to students and their children.

3. Didactic Teaching in Maternal and Child Health. In addition to practical clinical instruction in the Maternal and Child Health Clinic, planned for an 8 weeks period of 15 sessions for the third year students, a series of lectures and practical exercises was organized by the team to provide a background of knowledge and understanding of this field (schedule below):

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Maternal and Child Health Teaching Schedule for EM 3
1974-75 (see Appendix B)

1. Health of Mother and Child: objectives and approach for EM 3

2. Normal Pregnancy and desirable prenatal care

3. Common Problems of Pregnancy

4. Fundamental Laboratory Practice for MCH Care

5. Postpartum Care

6. Child Spacing: its importance and practice

7. Fetal Development and Influencing Factors

8. Normal Newborn and His Care

9. Mature and Premature: expectations for the First Year

10. Principles and Practice of Immunization

11. Feeding the Baby: the first two years

12. Environmental Protection of the Infant

13. Health Pitfalls for the First Year and Their Prevention

14. Organizing Medical Records and Their Use for MCH Services

15. Maternal and Child Health Worldwide: Causes of illness and death and the cost of non-prevention.

Unfortunately, because of frequent curriculum changes during the academic year 1974-75, it was not possible to give the complete course for all students, but advance planning during this past summer, with naming of the coordinators for teaching in each of the six years of the medical course, should make instruction run more smoothly during 1975-76.

4. Integration of EM 3 MCH Teaching with the total teaching program in community health. Since emphasis upon community health activities is a common thread running through the whole CUSS curriculum, it is important that whatever is done by our team fit effectively into the total CUSS teaching program. Through the above lectures and participation in the Maternal and Child Health Clinics third year students get their basic introduction to the clinical practice of public health, which is to be an important aspect of their function as doctors in the government's service upon graduation.

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In the fourth year, students gain practical experience in a health center operated by CUSS at Mvolye, at the edge of the city, where a Cameroonian pediatrician, who is a graduate of the Harvard School of Public Health, runs an excellent Maternal and Child Health Center, and where there is a maternity center and a Catholic Dispensary as well. They are also assigned to Mefou, a town about 100 miles from Yaounde where demonstration health services are provided for the surrounding region.

During the fifth year, students go to Bamenda in western Cameroon, where there is a network of health centers in the surrounding countryside supported by the Rural Health Services, which had been well organized by a Canadian technical assistance group. Bamenda is more than 200 miles from Yaounde, and, although it has been difficult to maintain adequate faculty supervision of students there, the health services are well developed, there is an excellent district hospital, and it seemed to provide a very good experience in rural community health work for students before their final intern year, of which one-third is spent in a rural area.

Thus, there are a series of graded clinical experiences of two months each for students in each of the clinical years in the delivery of basic health services--mother and child health protection, maternity services, emergency and ambulatory care for all ages, as well as opportunity to see the functioning of a team of physician (when available), nurse, midwife, pharmacist, sanitarian and aides to deliver these services. The activities of the Harvard Project are concentrated on providing a solid introduction to health service targeted on mothers and children in the third year, which fits in very well with the students' experiences in community health activities during the succeeding years. In addition, teaching of medical students is integrated as much as possible with the training of nursing students in health work. In the Bamenda rotation, for example, medical students, nursing students, and nurses from West Africa in a post-graduate training program (CESSI) run for WHO by the Canadian public health team at CUSS, live and work together for an 8 week period.

In Cameroon, as in most developing countries, women in the child-bearing years and children comprise two-thirds of thepopulation and have the highest morbidity and mortality. Because these can be markedly reduced by preventive and simple curative measures, an ad hoc committee was established at CUSS on 8 January 1974 in order to develop a Section of Mother and Child (particularly from conception to school entry) to integrate teaching and service programs which would recognize the close interdependence of mothers and children under six. This committee, consisting of

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Dr. Nkoulou H., Chief of the Pediatric Service, Dr. Mbede J., a senior pediatrician, Dr. B. T. Nasah, Chief of the Obstetrical and Gynecological Service, and two members of the Harvard team, Dr. Guillozet as Project Director, but representing child health and preventive and community medicine, and Dr. Drouin, as obstetrician and gynecologist. Their report is an impressive document, and proposes a structure for such a section which should lead to better coordination of research and teaching concerning the mother and child in CUSS and to closer collaboration between CUSS and the Ministry of Health in the provision of maternal and child health services to the community.

C. Maternal Health and Family Planning Activities. Because the maternity and gynecological service of the Central Hospital is located about 200 yards from the CUSS Pavilion and the pediatric service (Pavillons Beaudeloque, LaGarde) and is tremendously busy, most of the maternal health activities go on in that unit, where Dr. Pierre Drouin, our obstetrician-gynecologist, and Ms. Cousineau, the team's nurse-midwife, are located. Dr. Drouin arrived in early October, 1974, Ms. Cousineau a little earlier, and Mrs. Drouin and their four children in December, 1974. Dr. Drouin has turned out, as his references predicted, to be a dynamic and tremendously conscientious physician and teacher. He has formed an excellent working relationship with Dr. Boniface Nasah, Chief of the obstetric and gynecologic service and, as a result of their close collaboration, there has been a complete reorganization of La Maternité Principale (the obstetric part of the Central Hospital). Using available statistics, they have analyzed the problems faced by the maternity service as follows:

	1973	1974
Total Deliveries	7,824x	9,526x
Total Admissions (Total Admissions to the rest of the Hospital in 1973 were 6,893, except for pediatric service, which had about 3,500 in addition)	ca.12,000*	ca.14,000*
Still Births	112	105
Prematurity (all deliveries)	982 (12.5%)	794 (8.3%)
Teen-age Mothers (16 yrs. or less)	345	372
Prematurity Rate (teen-age)	9.8%	12.6%
Grand Multipara (5 previous viable babies)	1,141	1,345
Caesarean Sections	112 (1.43%)	198 (2%)
Forceps Deliveries	31	49
Maternal Mortality	8	13

x Of 99 available beds, only 48 were used for mothers entering for delivery, giving an average stay of about 12 hours, while 21 were assigned for gynecologic cases and 30 for mothers of premature infants.

* Prenatal admissions, gynecological, post-natal follow-up, etc. included.

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These statistics, taken with the obvious shortage of personnel--midwives, nurses, anesthetists, and well qualified doctors--of equipment, essential drugs and supplies, and of space, led to the presentation by Drs. Nasah and Drouin of a "Memorandum on Reorganization of Maternité Principale (Yaounde)" to the Ministry of Health on February 15, 1975.

This was taken very seriously and a considerable number of improvements including the creation of additional space for offices, laboratory, clinics, and teaching activities have been effected, and more are underway.

Again with Dr. Nasah's collaboration, Dr. Drouin has reorganized the teaching program in the clinical years for CUSS students (see Appendix C) and has introduced improvements in record keeping (see Appendix D) and recording of statistics, including use of the "Partogram" (D-1) in following the course of labor by graphic means, so as to permit intervention in time to prevent complications.

Research has been initiated through special clinics, run by Ms. Cousineau under Dr. Drouin's supervision on anemia in pregnancy and family planning. The latter is aimed at establishing the socio-cultural and socio-economic profile, as well as post-partum indications for child spacing and limitation of family size (see Appendix E). In addition, a high risk clinic has been initiated in an attempt to select those mothers at special risk for closer observation and more intensive prenatal care than seems to be necessary for most mothers. Students have been attracted to the research activities of the service and are working on various projects with Drs. Drouin and Nasah for their final year thesis. The establishment and equipment of a laboratory in "La Maternité" by the Project has assisted this excellent development.

D. Relation of the Project Team Members to Service Obligations of the CUSS Faculty. It soon became clear that, with the tremendous clinical load at the Central Hospital, those engaged in teaching could not and should not be isolated from the realities and heavy demands of the obstetric and pediatric services of the Hospital. Dr. Drouin has carried a particularly heavy load of clinical responsibility, especially during this past summer when the Chief, Dr. Nasah, was on study leave for three months. With the numerous emergencies and night calls, and the huge volume of deliveries, most of which, fortunately, are normal, he has been tremendously busy, but has set a splendid example of conscientious and humane as well as skilled clinical care for patients. Ms. Cousineau has set a similar example for midwives and nurses, who, like the medical staff, are seriously handicapped by shortages of personnel and equipment in the face of enormous demands on their energy and patience.

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In Dr. Guillozet's case, a considerable time was required before Dr. Nkoulou, as Chief of the pediatric service, gave him clinical responsibility in the Hospital. However, he has been placed in charge of an 8-12 bed ward in the central part of Pavillon Beaudeloque, very close to the CUSS Pavillon, for the care of children (infants under 5). Here he is responsible for a steady succession of tremendously sick infants with diarrhea, malnutrition, meningitis, pneumonia and post-measles complications. This is important, in that demonstration of clinical competence in the care of sick children reinforces his authority in the promotion of preventive services and health care. Furthermore, it gives him important teaching contacts with students in the fifth and sixth years who are assigned to the hospital services. For them, he is able to provide practical teaching of a sort which could be applied in a rural health center or small hospital, as shown in the direction for preparation of an oral replacement fluid to combat diarrhoeal dehydration (see Appendix F) or the card giving basic data on the calculation of fluid and electrolyte needs or drug dosage (see Appendix G). Finally, it has brought about closer coordination between in-patient and ambulatory services for children and between pediatrics and other activities in preventive and community medicine, such as the ad hoc committee on Mother and Child. Two important developments have been the establishment of the immunization clinic for patients discharged from the hospital and the setting up of a pediatric consultation clinic at CUSS Pavilion, to which children may come or be referred. This is staffed one afternoon a week by one of the members of the pediatric staff, including Dr. Guillozet, and operates five days a week. These are busy clinics and the work load is heavy, but they provide a service to the community which was not available before as well as an opportunity for proper follow-up of hospitalized patients and better health maintenance after discharge. The pediatric nurse, Ms. Garrett, is not only busy supervising the operation of the various mother and child clinics, but has really served in the pediatric section of the Hospital like a senior resident teaching students how to carry out various procedures such as lumbar punctures safely. She helps students throughout the pediatric wards and has been very important in the improvement of care. Further, she has made contacts with those nurses teaching nursing students who are isolated from CUSS and need contacts, help and stimulation.

IV. COUNTERPART TRAINING AND STAFF DEVELOPMENT

A. Counterpart Training. In the original allocation of funds for support of CUSS, $150,000 was supposed to be held by AID for use in financing counterpart training in this or other countries, but in actual fact these funds have not been available and the limited training expenses this year have been born by our Project budget.

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Several Cameroonians have had advanced training and research experience here at Harvard and its affiliated institutions as follows:

1. Dr. Victor Ngu - Professor of Surgery, worked at the Children's Cancer Research Foundation during the summer of 1973. He is now Vice-Chancellor of the University of Yaounde.

2. Dr. Kaptue - Hematologist. While working in Boston in 1974, he held discussions with Dr. David Nathan, Professor of Pediatrics at Harvard, Chief of Hematology and Oncology at Children's Hospital Medical Center and Pediatrician-in-Chief at the Sidney Farber Cancer Center, concerning potential areas of research collaboration.

3. Dr. Boniface Nasah - Chief of Obstetrics and Gynecology. Came to the Harvard Medical School with Mission approval from May 15 to August 15, 1975, on funds from our Project. He was appointed Visiting Lecturer on Obstetrics and Gynecology, and gave two talks, the first on "Maternal Health Problems in Cameroon" at a reception in his honor attended by interested faculty from the Medical School and School of Public Health; the second, given to the residents and staff of the Boston Hospital for Women, summarized research he had been doing while here and also went on to a lively discussion of differences in obstetrical problems and the course of labor in Boston and Yaounde. We are very grateful to Dr. Kenneth Ryan, Head of Harvard's Department of Gynecology and Obstetrics and to Dr. Fred Frigoletto of that Department for their interest in Dr. Nasah and his work.

   Dr. Nasah's main concern was to train himself in the use of certain immunological techniques to determine the extent to which autoantibodies and auto immunity may play a role in certain cases of male sterility, using sera which he had collected in Yaounde. Thanks to Dr. John David, Associate Professor of Medicine, he was given a laboratory and support in this work at the Robert Breck Brigham Hospital, and was assisted by a number of people there, particularly Dr. Ross Rocklin. This work should result in at least one scientific publication.

   At the end of his stay on August 8, Dr. Nasah visited the Family Planning Center at Downstate Medical Center of SUNY and AID officials in Washington on August 11. I believe his time in Boston had certain very positive aspects, as follows:

   (1) Furtherance of Dr. Nasah's own research interests, which relate to fertility and the whole area of family planning;

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(2) Establishment of contacts of future importance with colleagues at the Harvard Medical School, including

a. Those with allied research interests in immunology and autoimmunity;

b. Those with research interests in hematology, who plan to collaborate in studies on sickle cell anemia and the severe anemias seen in pregnancy and being studied clinically in Yaounde by Drs. Nasah and Drouin;

c. The leaders in the Department of Obstetrics and Gynecology at the Boston Hospital for Women and Beth Israel Hospital.

(3) With the assistance of Dr. Donald Goldstein, he was able to obtain a fairly extensive experience in the use of the laparoscope in diagnostic work and in such therapeutic procedures as tubal ligation, a procedure of importance as part of a comprehensive family planning program. Steps are now being taken to obtain a laparoscope for CUSS for his use at the Central Hospital.

B. Staff Development. When the original budget proposal for this project was submitted, we had not fully anticipated the sense of professional isolation that might arise, nor the importance of being able to keep up with medical progress. For this reason, permission was requested and obtained from AID for the support of conference travel for each staff member to permit each of them to attend one professional meeting during the year.

The following meetings have been attended, with great profit, I believe under this permission, with specific approval from the Regional Director.

1. Ms. Nancy Garrett. She made a visit to East Africa this summer where she was able to see the work in maternal and child health at the Medical Schools in Dar es Salaam, Tanzania, and in Nairobi, Kenya, and was particularly impressed by the teaching at the former, which is much less traditional than in Nairobi.

2. Ms. Lise Cousineau attended the International Congress of Midwives held in Lousanne from June 21 to 27, 1975. It gave her a chance to compare notes with those working in other developing countries, among them students whom she had helped train at the Downstate Medical Center of SUNY. Their experiences served to emphasize the real shortage of instruments and basic supplies for work in Yaounde. We shall try to rectify some of these shortages.

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Another important aspect of staff development is the opportunity to visit other African medical schools and health programs to compare notes on how similar problems are being met in other countries and to see what facilities may be available for special training of African personnel (nurses, technicians, etc.). Drs. Guillozet and Drouin plan to make a series of visits to Lagos, Coutinho and Accra in late September for this purpose.

V. PLANS AND RECOMMENDATIONS

The purposes of the first phase of the Harvard/CUSS Project, covered by the current contract for the period November 29, 1973 and September 30, 1975, could be summarized as follows:

1. To provide a Harvard faculty team of four persons to strengthen teaching about the health and medical care of mothers and children at CUSS, so as to develop personnel to enter community-oriented programs of service in the predominantly rural and poor region of Cameroon;

2. To build relationships between CUSS and U.S. institutions, particularly Harvard, which will encourage continuing, mutually advantageous contacts, such as collaboration in research and faculty exchanges after the proposed four year contract has terminated.

The first phase of the Project has certainly greatly stimulated and aided the achievement of the first of these purposes, and has made a small beginning on the second. It has helped to establish a program for the health of mothers and children, involving service, teaching and research in coordination with the overall objectives of CUSS. The details of the activities encompassed by this program have been described in the preceding sections of this report.

The goals of the second phase of the Project come within its broad purposes as outlined at the beginning of the report but, with the experience of the past two years, may be put very specifically.

1. Consolidation and further development of the program for the health of mothers and children;

2. Organization and establishment of this program at the Community Hospital, which is due to open during the coming year;

3. Preparation for phasing out the Harvard/CUSS Project so as to encourage continuing relationships between the two institutions.

A. <u>Consolidation of the Program for Mothers and Children</u>. Most of the achievements listed in this report in implementing the Work Plan and in related activities for the health of mothers and children have taken place within the current academic year of

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October 1974 through September 1975. It is very essential that these important beginnings be carefully nurtured and supported until they become fixed in the patterns of operation of the CUSS curriculum, which has been subject to frequent changes, and of the hospital services (pediatrics and obstetrics and gynecology) and health centers used by CUSS for student teaching and training. A period of several years will be required for this alone, but, as Cameroonian personnel become increasingly responsible for these activities, they should persist as improved services and as facilities for teaching and research. The current Harvard team has agreed to remain in Yaounde for two full academic years, i.e. till the summer of 1976; this should guarantee program continuity for another year.

Further elaboration of this program should see at least two important developments; first, the construction of a growth curve for healthy Cameroonian children during the first year; second, further development of family planning activities, as data becomes available from the research clinic being operated by Dr. Drouin, Ms. Cousineau and the sociologist who is working with them.

B. Organization of the Program for Mother and Child at the Community Hospital. Work upon the Community Hospital building, immediately adjacent to the Administration, Library, Laboratories and Pre-clinical Teaching Facilities of CUSS is progressing rapidly. This Hospital is supposed to provide primary and secondary health and medical care to a population of 17,000 people in the surrounding area and thus to serve a specific community. Presumably it will become an important teaching facility particularly in relation to mothers and children. Dr. Drouin, working with Dr. Nasah, has put a lot of effort into study and improvement of the plans for the maternity section and Dr. Guillozet has been concerned about preparation for the opening of ambulatory services for a large number of mothers and children. The ambulatory services will probably open during the current academic year, and in-patient services somewhat later. It is anticipated that the integration of this new service and teaching responsibility for CUSS with existing teaching activities at Central Hospital will occupy much of the attention of the Harvard team and of those concerned with the program for Mothers and Children during the current and the following academic year.

C. Preparation for the Phase-Out of the Harvard-CUSS Project. Since our second goal is to build a lasting relationship between Harvard and CUSS for the mutual benefit of both institutions, greatly increased emphasis must be placed during the second phase upon counterpart training, particularly in research, and upon the development of collaboration between members of the two faculties

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in research activities. This implies much greater use of counterpart training funds and consultant travel to Yaounde than during the first phase of the Project.

D. Recommendations

1. Extension of the time to complete the Harvard-CUSS Project from the original target date of September 30, 1977, to a new target date of September 30, 1978.

Justification:

(a) The full team was not in Yaounde until October, 1974, and will not complete two academic years at CUSS until the summer of 1976.

(b) The first year of the Project from October, 1973, to September, 1974, was required for planning, recruiting and settling the team.

(c) A new field team must now be recruited for the second phase of the Project, and to be effective should have two academic years in Yaounde (October 1976 to September 1978) with provision for a short period of overlap with the current team to effect a smooth transition.

2. Provision of more funds than the $565,305 originally estimated for the second phase of the Harvard-CUSS Project.

Justification:

(a) The longer time required for completion than originally anticipated;

(b) The effect of inflation upon travel and shipping costs, supplies, equipment and salaries paid in USA, and the fall in exchange rate (from 284 CFA per dollar to 195 CFA per dollar) and rise in cost of living in Yaounde.

(c) Desirability of including certain unanticipated expenses in the budget, as a result of experience and development of the program. These are funds for

(1) More supplies and equipment to make it possible to demonstrate good care.

(2) Research assistance from students.

(3) Counterpart training of Cameroonian personnel in the USA.

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(4) Increased travel for consultants (Harvard Faculty members) for collaboration in and planning of research activities.*

(5) Travel for staff development.

(d) Greater activity in operation of the home office than originally anticipated.

Detailed budget proposals are being submitted with supporting data.

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* Specific plans are now being made with Dr. David Nathan, Professor of Pediatrics and Head of the Division of Hematology and Oncology at the Children's Hospital Medical Center, for a member of his staff to visit Yaounde in the late fall of 1975 for the purpose of the development of collaborative research upon sickle cell disease with Dr. Kaptue of the CUSS staff and severe anemia in pregnancy with Dr. Nasah and Dr. Drouin at CUSS. The visitor will assess the problem with them, plus samples will be collected and material brought back to Boston for those laboratory procedures which cannot be carried out in Yaounde.

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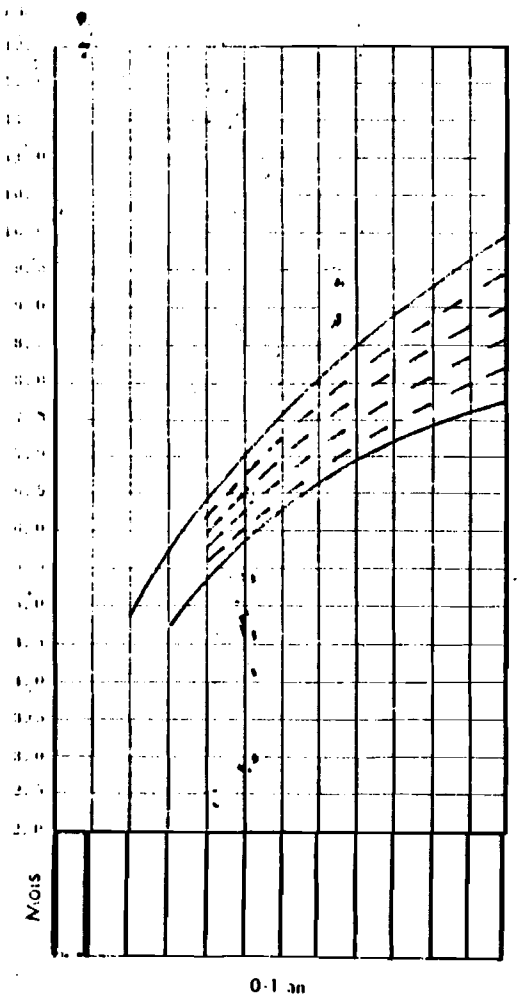
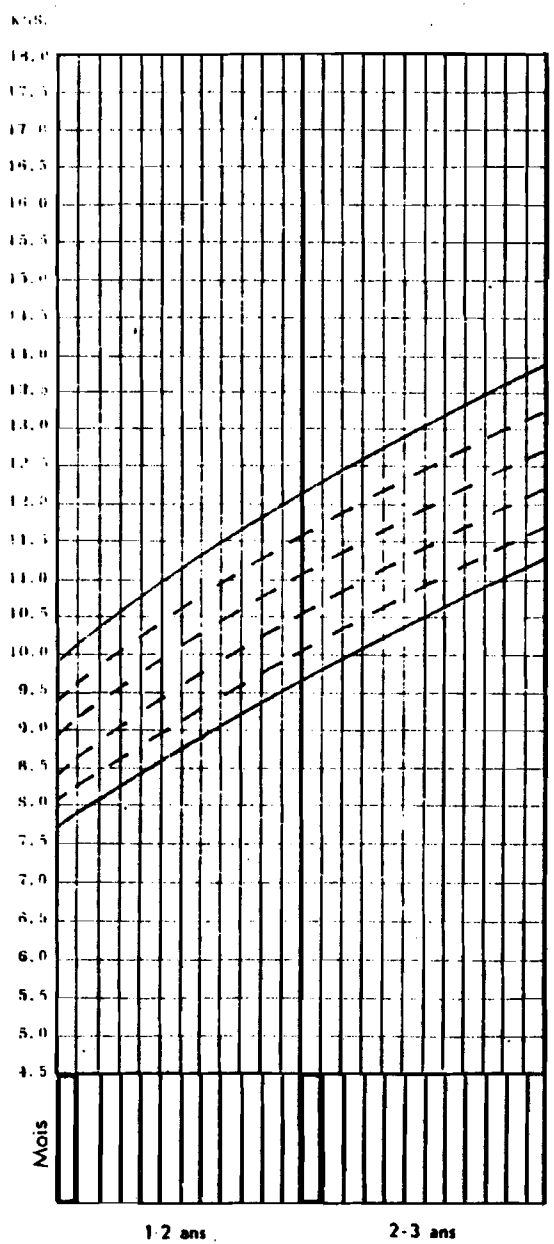
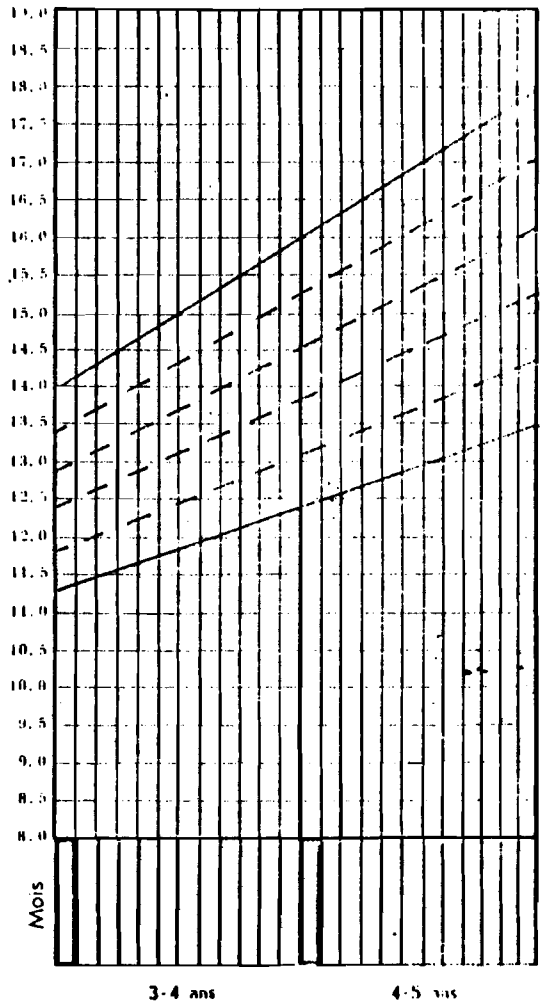
GRAPHIQUE DU POIDS DE L'ENFANT DURANT SES CINQ PREMIÈRES ANNÉES

TOUTE MALADIE GRAVE DOIT ÊTRE INSCRITE SUR LE GRAPHIQUE

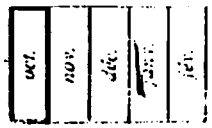






INSTRUCTIONS POUR L'INFIRMIÈRE OU L'EMPLOYÉ QUI ETABLIT LE GRAPHIQUE.

Notez le mois de naissance de l'enfant dans chaque case entourée d'un trait gras et complétez les autres cases en y inscrivant les mois suivants dans l'ordre chronologique comme indiqué ci-dessous.



Après la pesée de l'enfant, indiquez le poids sur le graphique par un gros point noir, à hauteur du chiffre correspondant de l'échelle des poids à gauche et dans la colonne du mois appropriée. Reliez ce dernier point par une ligne droite au point précédent.

Annex E, Appendix A

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NOTES

Fournit Par
L'Agence pour le Developpement
International

SUPPRESSION DU PALUDISME

Année

JAN	FEV	MAR	AVR	MAI	JUIN
JUIL	AOU	SEP	OCT	NOV	DEC

JAN	FEV	MAR	AVR	MAI	JUIN
JUIL	AOU	SEP	OCT	NOV	DEC

JAN	FEV	MAR	AVR	MAI	JUIN
JUIL	AOU	SEP	OCT	NOV	DEC

JAN	FEV	MAR	AVR	MAI	JUIN
JUIL	AOU	SEP	OCT	NOV	DEC

JAN	FEV	MAR	AVR	MAI	JUIN
JUIL	AOU	SEP	OCT	NOV	DEC

VACCINATION ANTI-VARIOLIQUE

DATE DE VACCINATION _____
(dès que possible après l'âge de 3 mois)

DATE DE VERIFICATION _____

DATE DE REVACCINATION _____
(entre 4 et 5 ans)

VACCINATION CONTRE LA COQUELUCHE LE TETANOS ET LA DIPHTERIE

DATE DE LA 1re INJECTION _____
(à l'âge d'un mois ou plus tard)

DATE DE LA 2e INJECTION _____
(un mois après la 1re injection)

DATE DE LA 3e INJECTION _____

VACCINATION CONTRE LE TUBERCULOSE (BCG)

DATE DE LA VACCINATION BCG
(La vaccination peut être faite immédiatement après la naissance).

DATE DU TEST DE LA TUBERCULINE AVANT BCG
(où la date de l'apparition d'une rougeur consecutive au vaccin BCG)

1. POLIO - DATE _____
2. POLIO - DATE _____
3. POLIO - DATE _____

VACCIN CONTRE LA ROUGEOLE
DATE _____

CENTRE SOCIAL	N° DE L'ENFANT
NOM DE L'ENFANT	M ou F
NOM DU PERE	
NOM DE LA MERE	

DATE DE NAISSANCE	DATE DE LA 1re VISITE
ADRESSE (Colline - Préfecture)	

FRERES ET SOEURS

ANNEE DE NAISSANCE	SEXE	OBSERVATIONS

Annex E, Appendix A

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COURS PRATIQUES EN SANTE MATERNELLE ET INFANTILE.-

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- EB 1974/75 -

Annex E, Appendix B

Les activités suivantes seront enseignées aux étudiants en groupes de trois ou quatre. Donc les différentes expériences ne suivront pas toujours dans l'ordre de la liste ci-dessous. Mais à la fin du programme l'étudiant doit avoir observé et participer dans le fonctionnement de chaque partie du programme.

1) - Observation des services routiniers de conservation et promotion de la santé maternelle et infantile.

2) - SOINS PRENATAUX

Accueil d'une femme enceinte y compris :
l'explication de soins prénataux, les examens et vaccinations fait et leur signification
Pesée, tension aterielle, inspection, palpation, auscultation, mensuration.

Examens de laboratoire : Sang - hémoglobine
- hématies falciformes
Urine - sucre
- albumine
- globules
*Selles- parasites
*Secrétions vaginales

Vaccination - principes
techniques
entretien des vaccins et l'asepsie pratique .

Enseignement aux mères :

- hygiène pendant la grossesse et après l'accouchement
- nutrition pendant la grossesse et l'allaitement
- signes de travail, processus de l'accouchement et de la délivrance
- préparation pour l'hôpital
- préparation et soins des seins pour l'allaitement

3) - SOINS DES FEMMES POSTNATALES ET ALLAITANTES

-
- examen physique
- discussion sur l'espacement des naissances
- enseignement aux mères :
  - l'hygiène corporel
  - soins des seins
  - signification de l'espacement des enfants, et les moyens de réaliser un espacement convenable à chaque couple qui le désire.

4) - SOINS DU NOUVEAU-NE

- examen physique
- soins du cordon
- évolution quotidienne du nouveau-né
- utilisation de la carte de croissance
- enseignement aux mères :
  - l'hygiène et soins du bébé, démonstration du bain de l'enfant

* Si nécessaire

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- la signification et utilisation de la carte de croissance et immunisation

5) - CROISSANCE ET DEVELOPPEMENT

- examen de l'enfant en vue de suivre son développement psychomoteur, anthropométrique et dentaire
- identification de l'âge et stade de développement de l'enfant

6) - IMMUNISATION

- l'utilisation du matériel de vaccination, stérilisation maniement et entretien
- vaccination des enfants :
  BCG, D.T coq, Polio, Rougeole, Variole
- enseignement aux mères de :
  - la signification de l'immunisation
  - l'horaire d'immunisation

7) - L'ALIMENTATION DE L'ENFANT

- démonstration de la préparation des bouillies
- enseignement aux mères de la préparation des plats riches en protéines, vitamines, variété et le sevrage progressif
- discussion sur l'économie de préparation des plats et l'hygiène nécessaire.

8) - PROTECTION DE L'ENVIRONNEMENT DE L'ENFANT

- enquête des connaissances des mères sur la latrine sanitaire et son usage.

9) - PREVENTION ET TRAITEMENT DES MALADIES COMMUNES

- enseignement aux mères des précautions à prendre pour prévenir les maladies communes comme la diarrhée, les vommissements, la fièvre, les vers intestinaux, certaines maladies de la peau et les démarches à faire s'ils surviennent.
- préparation des soupes de carottes, du citron
- comment faire un bain tiède.

10) - L'UTILISATION DES DONNEES ET STATISTIQUES MEDICALES

- récolte des données des cartes de croissance et des données de base des dosciers des mères
- interprétation et évaluation des données pour recommander le programme réaliste pour conserver la santé maternelle et infantile.-

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Annex E, Appendix C

GENERAL RULES FOR PROTECTION OF MOTHER AND CHILD AT THE TIME OF LABOUR AND DELIVERY

DO

Preparation of the room:

1. Prepare equipment and supplies for admission examination - Example: gloves, stéthoscope, blood pressure apparatus.
2. Prepare, in advance, the suction equipment for several deliveries.

Admission of the Woman:

1. Record the hour of arrival, the progress of labour, the condition of the foetus and of the woman.
2. Wash and shave the vulva.
3. If labour is not advanced, give an enema and if the woman is distended and cannot void, catheterize her.

3. **During Labour:**

1. Take the foetal heart rate regularly and note the progress of labour.
2. If labour does not progress or there is foetal distress, identify the cause and immediately take the necessary measures.
3. Permit women fluids and light nourishment unless in hard labour.

At the time of Delivery:

1. Before cutting the cord, suction the mucus and amniotic fluid from the mouth and pharynx unless the child is in distress and the cord should be cut immediately.
2. Ensure good ligation of the cord.
3. Put drops in the baby's eyes (silver nitrate).

The third Stage:

1. Examine and ensure that the placenta is complete.
2. Examine the perineum carefully while washing the woman and repare any tears.

DO NOT

During Labour:

1. Leave a woman in labour too long:
   Primapara- not more than 24 hours
   Multipara- not more than 12 hours
2. Leave a woman indefinitely on the bedpan.
3. Do more than 4 vaginal exams during labour except in complicated cases to exclude cord prolapse.

At the time of Delivery:

1. Allow the baby to get cold.
   - hit or handle the baby roughly
   - or splash him with cold water or alcohol.

The third Stage:

1. Try to hasten delivery of the placenta.
2. Abandon the woman until the uterus is firm and she has been cleaned up.

Yaoundé, May 1974.
HAR/CUSS

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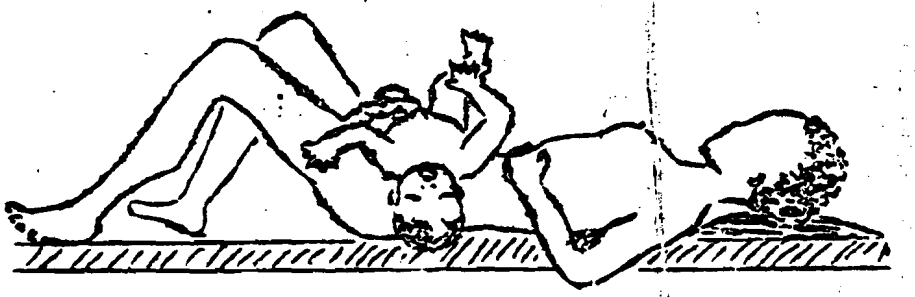
Annex E, Appendix C

CARE OF THE NEWBORN AT THE TIME OF DELIVERY

1. Place the child, face up across the mother's abdomen.



2. Clear the airways by suctioning the mucous and amniotic fluid from the nose and throat.
3. When the cord has stopped pulsating clamp and cut it 2-3 cm. long unless the child has been in distress before birth, in which case the cord should be cut at 5 cm. immediately and stimulation of respirations begun.
4. Maintain body heat (wrap the child in a towel).
5. Clean the cord with alcohol to aid the drying process and apply a clean dressing.

Yaoundé, May 1974.
HAR/CUSS

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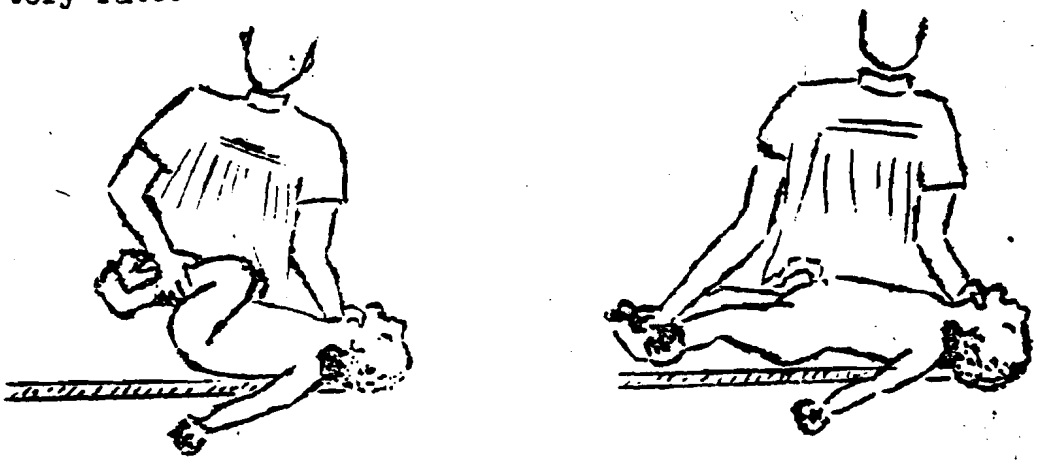
RESUSCITATION OF THE NEWBORN

1. Maintain body heat.
2. Insure that airways are open.
3. Lift the chin and extend the head back.
4. Grasp both legs in one hand and flex the knees, pressing the thighs against the abdomen and thorax rythmically at respiratory rate.



5. If this activity does not stimulate regular breathing, initiate mouth to mouth respirations immediately:
   - cover the baby's mouth and nose with a piece of gauze
   - blow only the amount of air that one has in his mouth in short sharp, puffs into the child's lungs and allow the child to exhale naturally, aided by flexing its knees on the thorax.

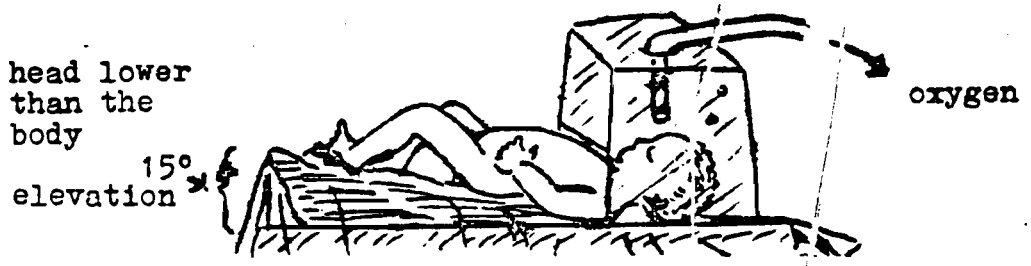
NEVER BLOW MORE THAN THE AIR CONTAINED IN THE MOUTH TO AVOID EXPLODING THE PULMONARY ALVEOLI.

6. If the child does not respond after 5 minutes, mouth to mouth respirations should continue for at least ½ hr. or until respirations are established.
   - if available, Sodium Bicarbonate (4-10 Gm/100cc) should be given by a second person directly into the vein of the cord:
     dilute 2cc-3cc of the 7,5 Gm/100cc strength in the same amount of Glucose 10%, or sterile water if Glucose is not available.
   - the same dose may be repeated in ten minutes if the child is not maintaining unaided respirations.

Yaoundé, May 1974.
HAR/CUSS

CARE OF THE NEWBORN AFTER RESUSCITATION

1. Warm the child with any warm object covered with cloth if his temperature has dropped (below 37°) or if his legs feel cold. (Regulate the incubator and if necessary place the child on a hot water bottle covered with cloth or place a bottle of warm water against the baby).
   If the child weighs less than 1 500 Gm heat must be maintained 24 hours per day and whenever body heat is not being maintained.
2. Place the child on his abdomen with his hand inclined lower than his body (15°) to encourage drainage of mucus.
3. Make sure that airways are always open. If the child is still cyanotic and tachypnoeic (breathing very rapidly with blue nails and lips, flaring nostrils and laboring respiratory muscles), place the child on his back or side and give him oxygen.
4. To improve the efficiency of the oxygen place the oxygen hose through a hole in a box covering only the baby's head.



5. To prevent hemorrhage give an injection of Vitamin K :
   For babies weighing over 2 Kg.....0.1cc (1/10ml)
   For premature infants .....0.05cc(1/20ml)
6. Protect against infection with an injection of Penicillin G 50.000 I.U./Kg. of body weight, once a day for 4 days.
7. Re-evaluate the child's condition often each day.

Yaoundé, May 1974.

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MORPHINE ANTAGONISTS AND RESPIRATORY STIMULANTS

If the mother has received morphine-like analgesia **shortly** e.g. one hour or less, before delivery and this is believed to have depressed the infant, then NALORPHINE 0.I mg/kg. I.M. or I.V. may be given and repeated in 15 minutes if necessary. It is not a respiratory stimulant and is useful only as an antagonist to excess analgesia.

Respiratory stimulants

NIKETHAMIDE 25 mg/kg/dose (0.75 gm/M^2/dose)
(CORAMINE OR NICETHAMIDE) I.M. or I.V. well-diluted with saline
May be repeated in 15 minutes.

MICORENE 20 mg/kg I.M. only, well-diluted with saline.

Example: For a 3 kg baby give approximately 0.4 ml Micorène in 2 ml of saline (from an ampule of Micorène 225 ml/1.5 ml.).

Yaoundé, May 1974.

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Annex E, Appendix C

Fiche d'accouchement : Bébé accouché :
Delivery Record: Baby delivered:

Accouchement : Durée de la 1ère Phase Placenta
Delivery : Duration of 1st Stage Placenta
Bref résumé de l'accouchement 14 12 24
Brief Summary of delivery
Lacérations, épisiotimie, sutures
Lacerations, episiotomy, suturing

3ème Phase :
Third Stage:

Durée :
Duration:
Mode de sortie du placenta
Method of delivery of placenta
Examen du placenta
Examination of placenta
Quantité de sang perdu
Amount of blood loss
Médicaments administrés
Drugs used

Enfant : Poids à la naissance Sexe :
Infant:: Birth weight Sex :
Etat à la naissance
Condition at birth-Apgar
Méthodes de réanimation employées
Methods of resuscitation used
Déformités
Deformities

Signature de l'accoucheur :
Signature of Attendant :

Etat (de la patiente) à la sortie.
Condition on Discharge.

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Annex E,
Appendix D

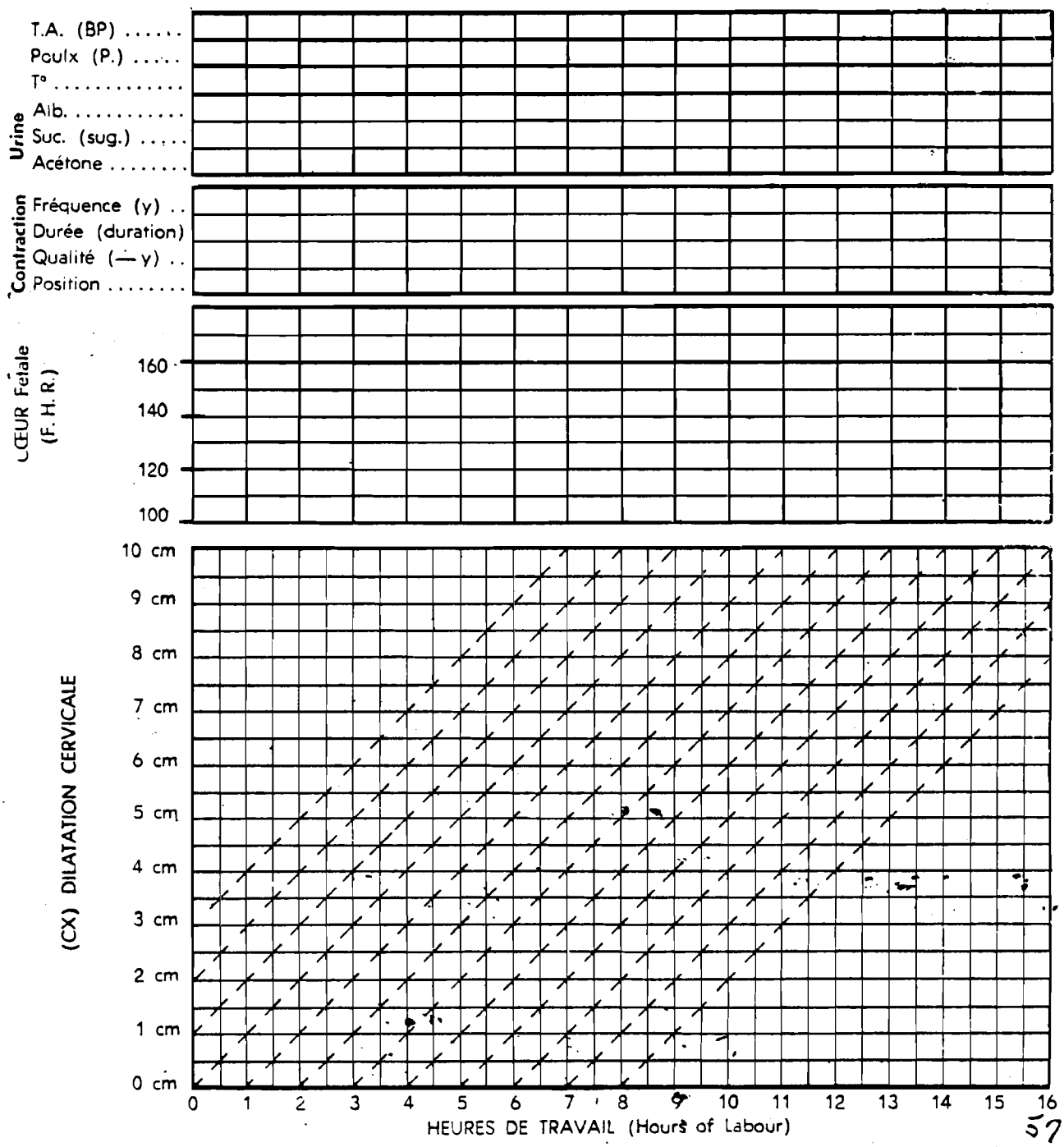
C. U. S. S.
Obstétrical Service obstétrique

PARTOGRAMME

Date .....
No. .....
Hct (Hb) ..... Génotype .....
Groupe ..... Rh. .....

NOM (name) ..... Age ..... Gravida ..... Para. .....
Adresse (address) ..... Taille (Ht) ..... Poids (Wt) .....
Histoire (Hx) médicale .....
chirurgicale (surgery) .....
Hx Obstétricale
- Ant. (previous) .....
- Présente (present) ..... D.D.M. (LMP) ..... DPA (EDC) ..... Sem. (wk) .....
- Problème (c/o) .....

Raison d'entrée (main c/o) ..... Début du travail (beginning of labor) ..... hres (hrs) ..... jour (day)
Membranes : Intactes ☐ Rupturées (.....tured) ☐ Spont. ☐ ..... hres R.A.M. (ARM) ..... hres
Liquide amniotique (Liquor) claire (clear) ☐ jaune (yellow) ☐ verdâtre (green) ☐ sang (blood) ☐
Bassin (pelvis) Adéquat (.....e) ☐ Limit ☐ Césarienne (re) (C-Section) .....



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Enfant né le (born) ..... à (at) ..... Hres (hrs) Sexe (sex) ..... Poids (Wt) ..... kgs
Délivrance (placenta) ..... à (at) ..... Hres (hrs) APGAR 1 min. .....
5 min. .....

TRAVAIL (Labour)
(latent) phase latente ..... Hres (hrs) Aspect normal ☐ Abnormal ☐
» active ..... » » Expl. : .....
(2nd) stage 2e ..... min. .....
(3rd) » ..... » .....
Total ..... hres (hrs)

Accouchement (Delivery)
Normal ☐ Difficile (difficult) ☐ Traumatique (c) ☐
Déchirure (tear) ☐ 1er (1st) ☐ 2e (2nd) ☐ 3e (3rd) ☐
Episiotomie (...y) médiane ☐ medio-lat. ☐ D. (R) ☐ G. (L) ☐
Forceps ..... Electif Indication .....
Bas (low) ☐ Moyen (mid) ☐ Haut (high) ☐
Ventouse (vacuum extractor) .....
Césarienne (C-Section) - re .....
Type bas (low) transverse ☐ Class. (C) ☐ Autre (other) ☐ .....
Complication .....

Post-Partum
Utérus ..... Episiotomie (...y) ..... T. A. (BP) ..... Hct (Hg) .....
Jour (day) .....

Observations :

JOURS (days)						
MERE (mother)	T°					
	P.					
Mamelons (nipples)	• normal	☐	☐	☐	☐	☐
	• fissuré (cracked)	☐	☐	☐	☐	☐
	• inversé (ted)	☐	☐	☐	☐	☐
Seins (breasts)	• normal	☐	☐	☐	☐	☐
	• douloureux (pain)	☐	☐	☐	☐	☐
Utérus						
Lochies (lochia)	• aucune (none)	☐	☐	☐	☐	☐
	• normales	☐	☐	☐	☐	☐
	• anormales					
Périnée (perineum)						
Jambes	• normales	☐	☐	☐	☐	☐
	• anormales	☐	☐	☐	☐	☐
Traitement (Rx)						

JOURS (days)						
ENFANT (Infant)						
Fontanelle	• tendue (tense)	☐	☐	☐	☐	☐
	• enfoncée (depressed)	☐	☐	☐	☐	☐
	• normale	☐	☐	☐	☐	☐
Yeux (eyes)	• jaunes (yellow)	☐	☐	☐	☐	☐
	• blancs (white)	☐	☐	☐	☐	☐
	• rouges (red)	☐	☐	☐	☐	☐
Peau (skin)	• cyanose	☐	☐	☐	☐	☐
	• sèche (drye)	☐	☐	☐	☐	☐
	• normale	☐	☐	☐	☐	☐
nombril (ombilic)	• normal	☐	☐	☐	☐	☐
	• infecté	☐	☐	☐	☐	☐
Poids (wt)						
Respiration	• normale	☐	☐	☐	☐	☐
	• accélérée	☐	☐	☐	☐	☐
	• irrégulière	☐	☐	☐	☐	☐
Selles (stool)	• No.					
	• Couleur					
Téter (suckling)	• bien (well)	☐	☐	☐	☐	☐
	• mal (bad)	☐	☐	☐	☐	☐

SOMMAIRE DE L'ACCOUCHEMENT
(DELIVERY SUMMARY)

- **TRAVAIL** (labor)

Grossesse (pregnancy) ..... sem. (wks)
Stage 1 phase latente ..... hres (hrs)
» active ..... hres (hrs)
Stage 2 ..... min.
Stage 3 ..... min.
Total ..... hres (hrs)

- **Normal** ☐ - **Anormal** ☐

Déchirures (tears) 1er ☐ (1st) 2e ☐ (2nd) 3e ☐ (3rd)
Episiotomie (.....y) mediane ☐ M.-L. ☐
D (R) ☐ G (L) ☐
Ventouse (vacuum extractor) ☐
Forceps ☐ Haut (high) ☐ Moyen (mid) ☐ Bas (low) ☐
Césarienne - re .....
(C-section) .....

- **Complication**

Bébé (baby)
Sexe (sex) ..... Apgar
1 min. .....
5 min. .....
Poids (wt) .....
Evolution
normal ☐ anormal ☐

Observation :

VISITE POST-NATALE - VISIT

Date .....
No. sem. (weeks) .....
Problèmes (c/o) .....

Ex. Phys. (ex.)

T. A. (B.P.) Poulx (P) Poids (wt)

ORL (HEENT) Seins (breast) Abdomen

Ex. pelvine (pelvis)
cx

Hct (Hb) Urines
Alb. .....
Sucre (sug.) .....

Planning familial
- Méthode .....
- Indication .....

Rx

Enfant (Infant)
- Poids (wt) .....
- Problèmes (c/o) .....
- Nutrition .....
- Vaccination .....

Plan :

C. U. S. S. ANTENATAL - SERVICE

Date .....

NOM (name) .....
Adresse (address) .....
Age ..... Mariée ..... ans (years) cel. (s.) .....
Occupation ..... Mari (husband) .....

Hx — médicale .....
— chirurgicale (surgery) .....
— personnelle .....
— médicament (drug) .....
— allergie ..... transfusion .....
— jumeaux (twin) .....

Menarche ..... Cycle ...../..... DDM (LMP) .....
DPA (EDC) .....

Hx Obstétricale
G ..... P .....

Année (Year)	Endroit (Place)	Evolution	Sexe	Poids (Weight)	Complication
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					

Tests spéciaux (Bl.) Gr. sang ..... Rh. .....
V. D. R. L. ..... Hb Genotype .....

Instructions .....

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Annex 5
Appendix D

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Annex E, Appendix D

EXAMEN PHYSIQUE (Physical examination) Date .....

Taille (Ht) ..... Poids (Wt) ..... Mari (husband) T. (Ht) ..... Poids (Wt) .....

Apparence générale (gen. app.) .....

Nutrition ..... Pâleur (pale) .....

ORL (HEENT) ..... Thyroïde .....

Abdomen

Thorax

Seins (breasts) .....

Mamelons (nipples) .....

Poumons (lung) .....

Cœur (heart) .....

Foie (liver) Rate (spleen)

Bassin (pelvis)
Perineum

Col. (cervix)

Utérus (ann.)

Mesure (measure)

- Pubis .....
- Inter-tuberosite .....
- Détroit moyen (mid) .....
- Conj. interne .....
- Type .....
- Adequate ☐ Inadequate ☐

1er mouvement (quickening)	Observations
Saignement (bleeding) 1er (1st) trim. ☐ 2e (2nd) trim. ☐ 3e (3rd) trim. ☐	

Date	Sem. (Week)	ABDOMEN		C. F. (FHR)	Présentation	T. A. (B P)	Œdème	Poids (Wt)	Hct (Hg)	URINE		PROBLEMES (c/o)	Rx - Sig. - Retour (R.B.)
		utérus	circ. (girth)							Alb.	Sucre (sug.)		

IMP. COULOUMA - YAOUNDE

Annex E, Appendix E 34

JUN 9 1975

UNIVERSITY OF YAOUNDE

Centre Universitaire Des Sciences De La Sante

Yaounde, le 2 Juin 1975

Dr. Albert Henn, M. D., M. P. H.
Regional Medical Officer
Agency for International Development

Re: Family Planning

Dear Al,

As requested by your secretary, here is the situation on family planning in Cameroun.

First I would like to refer you to my letter of May 28, 1975.

There is only one clinic existing with full service regarding family planning in Cameroon. That clinic is run by the Harvard/CUSS Project team. The staff includes one doctor (obstetrician-gynecologist), one mid-wife, and one sociologist (Part-time). We have been functioning since January 17, 1975 seeing patients every Friday morning. The purpose of the clinic is to study the need of the Cameroonian (Yaounde) people. for family planning without any publicity. From January 17 to June 1, 1975, we have seen 190 new patients:

Female sterilisation	35	
Birth control pills	20	
Abortions: done	2	(medical reasons)
refused	4	
IUDs	127	
Others	2	
Condoms	100	small boxes

During the next six months we are planning to have only 10 new patients per week. Our immediate plans are: (1) working with the Deputy Minister

of Health, we are planning to have official permission from the Government to proceed with family planning in Cameroon by the end of the year (2) after 500 new cases we will produce a report illustrating the needs in Yaounde for family planning (3)National investigation of what is done presently in Cameroon during the next three months; we realise that some missions and private doctors are giving some services. I would appreciate the help of AID in planning and computing such a questionnaire.

In my last letter, I mentioned to you the immediate need in supply for our own clinic.

Hoping these informations would be useful to you.

Sincerely yours,

P. Drouin, (FRCS (C)
Harvard/CUES Project

N. B.: Included photocopy of the Cameroonian law of abortion, etc...

cc: Dr. N. Guilloset
Mr. Janeway

AU DÉBUT DE LA DIARRHEE.....

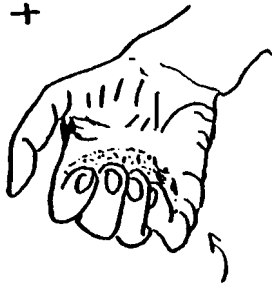
(afficher)

DONNER CA A VOTRE ENFANT

SEL 1.5 gm

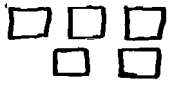
1 PINCÉE DE TROIS DOIGTS du SEL

+



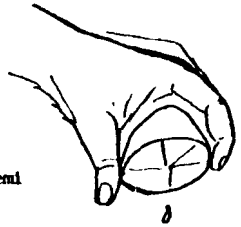
1 POIGNÉE (PETIT) du SUCRE

SUCRE



ou

JUS d'un demi CITRON



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EAU BOUILLIE

MELANGER TOUS DANS UN ½ LITER d'EAU BOUILLIE ET UN FLACON PROPRE

USAGE CLINIQUE - SOLUTION EQUILIBRÉE POUR REHYDRATION PAR VOIE ORALE

1.5 gm NaCL (sel de la table "La Pincée de trois doigts"

0.5 gm KCL (comprimé de 500 mg.)

15-25 gm de sucre (3-5 carreaux ou 2 cuillerées à soupe combles)

Mélanger le tout dans un demi-litre (500 ml) d'eau bouillie

PROCEDEZ TRES GRADUELLEMENT

Donnez d'abord une ou deux cuillerées à soupe de ce liquide. Dans le cas de gastro-entérite où l'enfant risque de vomir, donnez de petites quantités toutes les 30 minutes jusqu'à ce que vous soyez sûr qu'il tolère la boisson. Il doit prendre 30 ml par kilo toutes les trois heures pour retrouver son état normal. On ajoutera peu à peu à la diète les autres liquides et solides quand on sera assuré que l'enfant peut les supporter. Habituellement, il faut compter de 24 à 48 heures de ce régime avant le rétablissement d'une diète normale.

HAR/CUSS/75

Annex E Appendix F

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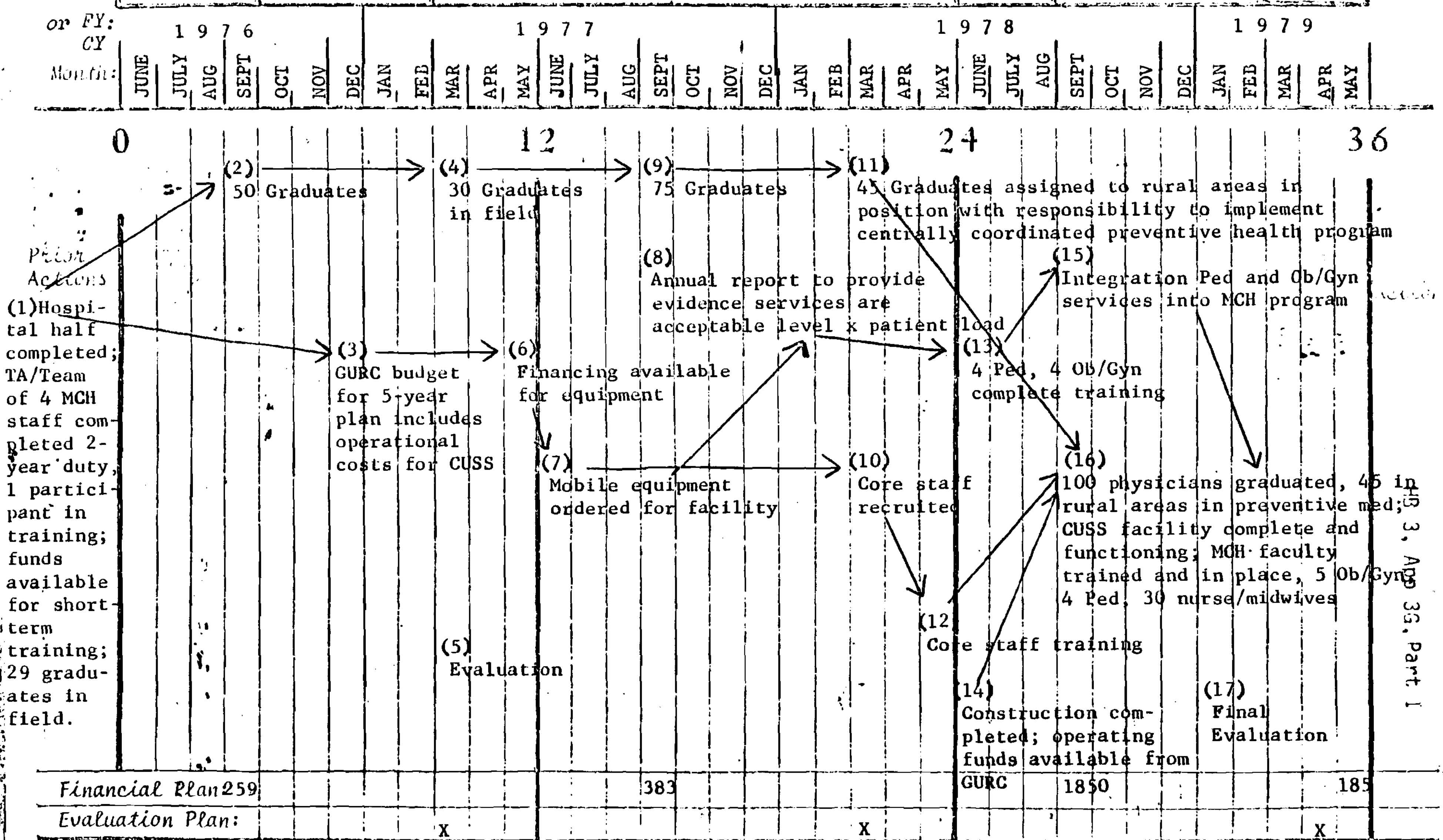
ANNEX F

p. 1

PP FORM
(May be Expanded as Appropriate)

Country: CAMEROON	Project No: 631-0531	Project Title: CUSS PROJECT	Date:	/ / Original / / Revision # __	PPT appr



TRACKING

PROJECT PERFORMANCE / NETWORK

CRITICAL PERFORMANCE NETWORK

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HB 3, App 3G, Part I

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PPT FORM

Country: CAMEROON	Project No: 631-0531	Project Title: CUSS PROJECT	Date:	/ / Original / / Revised	Approval:

CPI DESCRIPTION

(1) June 1976, Midlife of Project: Hospital construction half finished. 4 MCH staff to CUSS institution recently finished 2-year contract, 2nd team of MCH staff currently being recruited for another two years. 1 participant in long-term training, funds available for short-term training. 29 medical graduates in field.
(2) Sept. 1976: At least 50 medical students graduated.
(3) Dec. 1976: Assurance that GURC fifth 5-year plan budget includes operational costs for completed and fully functioning hospital.
(4) March 1977: At least 30 of graduate physicians posted to rural areas and actively implementing centrally coordinated preventive health program.
(5) March 1977: Mid-project evaluation.
(6) April 1977: Financing for mobile equipment assured.
(7) June 1977: Mobile equipment for hospital ordered.
(8) Sept. 1977: Annual MCH reports should provide evidence of acceptable patient load in MCH section.
(9) Sept. 1977: At least 75 total graduate physicians turned out from CUSS.
(10) March 1978: Core staff for running hospital and using equipment recruited.
(11) March 1978: At least 45 of all graduated physicians assigned to rural areas in position with responsibility to implement centrally coordinated preventive health programs.
(12) May 1978: Core staff for running hospital to be trained in using equipment.
(13) June 1978: 4 Pediatricians, 4 Obstetricians/Gynocologists, all Cameroonian replacement staff for MCH program have completed training.
(14) June 1978: Construction of hospital completed. Operating funds for entire institution on hand.
(15) Sept. 1978: Integration of Pediatric, Obstetrical and Gynocological services into a coherent MCH program. Action will require physical proximity of said units in new facility.
(16) Sept. 1978: At least 100 physicians graduated, at least 45 practicing preventive medicine in rural areas. CUSS facility completed and equipped. MCH faculty trained and in place: 4 Ob/Gyn, 4 Ped, 30 nurse/midwives. Institution functioning optimally.
(17) March 1979: Final evaluation

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ONE PENN PLAZA
NEW YORK, NY 10001
OFFICES IN PRINCIPAL CITIES
212 · 594-6100

EVALUATION OF CUSS

The University Center for Health Sciences, Yaoundé, Cameroon

Herman L. Myers, M.P.A.
Evaluation - Team Leader

Charles W. Dohner, Ph.D.
Medical Education

John L. Lucas, M.D.
Public Health

Work Order No. 4, Contract No. AID/otr-C-1381

April 1977

1. INTRODUCTION

On March 20, 1977, AID contracted with Wolf and Co. to conduct an evaluation of the Harvard/CUSS (University Center for Health Sciences) project in the United Republic of Cameroon (Project No. 625-11-550-531). The evaluation was limited to Harvard University technical assistance in maternal and child health activities. A separate evaluation of the construction aspects of the project is being undertaken simultaneously by Mr. Gerald F. Oudens, Washington, D.C.

The scope of work of the evaluation, as set forth in the contract, was to determine:

1. Whether the CUSS design is still valid or should be modified.

2. Whether the delivery of inputs (resources) and project outputs has brought progress toward the achievement of its purpose and is making planned significant contributions to the project goal.

3. The impact on existing patterns of health services delivery and the contributions to problem solving in methods of medical education, the development of health delivery systems, and applied health care research.

4. How CUSS, as an institution, is responding to the needs of Africa and the degree to which the project is integrated into and is contributing to the overall CUSS program.

The evaluation was undertaken four years after inception of the project, but due to interruptions was equivalent to only about three years of planned assistance. Harvard University had already recruited personnel for a last year of technical assistance and the CUSS Community Hospital was on the verge of completion, although much remained before it was equipped and organized. Its opening date is still uncertain, although long overdue, but outpatient services are expected to be initiated by September or October 1977.

The Evaluation Team was briefed on March 21, 1977, and field work in Yaounde, Cameroon and environs was conducted from March 22 - April 15, 1977, a total of 8 manweeks. An evaluation of overall CUSS progress by the Canadian Government immediately preceded the team's arrival, but the results of its investigation were not available. The Harvard Campus Coordinator was visited on June 2, 1977, and this report has been changed to reflect information gained from that visit. The RDO, Harvard, CUSS, Government, and University officials and technicians interviewed were fully cooperative and made their records fully available to the team.

2. SUMMARY OF MAJOR FINDINGS AND RECOMMENDATIONS

Findings

CUSS is capable of and is training physicians, paramedical technicians, and senior level post-graduate public health nurses in MCH techniques and research. The AID-financed, Harvard-executed, technical assistance was instrumental in shortening the time necessary to reach this capability and, especially, to initiate and implement ambulatory training and care facilities, including child spacing, in government-supported facilities.

The continued emphasis on, and quality of MCH training, research, and service is uncertain. Time slippages in completion of the new Community Hospital, uncertainty of financing, lack of inter-ministerial cooperation (outside of AID/Harvard control), and paucity of middle level counterparts already allocated to the MCH clinics are existing bottlenecks.

Project support of stated MCH goals is realizable, though measurement of the overall effect on maternal and child mortality and morbidity depend on improved reporting procedures and several more years of lead time for the utilization of graduates and research.

Conclusions and Recommendations

Until the new Community Hospital is ready for installation of MCH outpatient clinics, we do not believe that continued AID technical assistance will do more than substitute for available Cameroon resources; indeed it may become counterproductive as dependency on "extra hands" delays counterpart training and utilization.

The maximization of AID assistance in the new Hospital and potential outreach facilities will depend, furthermore, on (1) prior explicit agreement between CUSS and RDO on the role and utilization of the Harvard Technicians in the final phase, (2) orientation, and (3) project management implementation.

We recommend, on balance, if these prior major conditions are fulfilled, that AID provide the equivalent of a full four years of technical assistance as originally planned. If unused funding permits, AID may wish to extend the project to finance the preparation of a nursing handbook and an extra year's availability of nurse-midwife supervisory assistance.

We recommend further that priority in utilizing AID assistance be on institutionalizing the efforts to date. This will require:

1. First priority be given to installation of MCH facilities in the outpatient department of the new hospital.

2. Deemphasis on use of Harvard technicians in delivery services and adoption of a planning and implementation role by them supporting a CUSS program in improved training and research, using to the extent possible short-term consultants and participant training.

3. By joint agreement between RDO, CUSS, and Harvard, priority be given to assisting CUSS in the following, among others:

a) Extension of MCH services and outreach programs to the Mefou area.

b) Improved patient record keeping and laboratory services training in the new hospital.

c) Manpower survey to provide a basis for planning the number and type of future CUSS graduates.

d) Self-instruction, instructional materials, and other innovative teaching and evaluation methods into CUSS-MCH training and curriculum.

e) Long-term research priorities.

The foregoing is a logical follow-up of project achievement to date. It reflects recruitment of staff with competent medical and coordinating ability, including substantial academic background and standing. Given the short time period left in the project, U.S. support consultants must be utilized early in the final phase to leave adequate time for development and implementation by the Yaounde staff.

Additional Findings and Recommendations

Throughout this Report, the evaluation team has recorded conclusions relating to particular problem areas. A few of the most important of these are repeated here. These additional findings and recommendations appear to us to offer opportunities to the interacting agencies concerned with improvement of MCH in the Cameroon to maximize their effectiveness.

The AID-financed Harvard/CUSS Project has supported and relieved overworked CUSS OB/GYN faculty to permit the development of demonstration MCH training programs, MCH clinics, and an emerging liberalized attitude toward a program of child spacing. CUSS graduates appear to be trained as well, if not better, in MCH than in other clinical areas. Students rated the MCH as their highest field of interest.

Project objectives to develop team training, become a regional center for Central West Africa, and develop a CUSS/Harvard counterpart relationship are for the most part unrealized.

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The following non-direct project support requirements refer to back-up responsibilities of the MOH and/or CUSS. The degree of effectiveness of the project depends on these non-contractor activities (see Logframe assumptions).

The MOH should be encouraged to:

1. Provide at least minimum logistic support of MCH public health activities. These include supplies of medicines and drugs, refrigeration equipment,and housing for graduates where not available. This may ultimately involve rehabilitation of the drug delivery system with less costly methods of drug purchases, decentralization of warehousing, and the establishment of pro-pharmacies.

2. Rehabilitate MOH planning, statistical, and evaluative services; establish baseline health statistics; feedback for evaluating the relevance and impact of CUSS training programs.

3. Coordinate joint training of student nurses and midwives with CUSS medical students, and provide for team training in MOH regional facilities.

CUSS should be encouraged to:

1. Initiate staff training in management and other backstopping in the new hospital (CUSS is assumed to run the hospital under either MOH or MOE auspices).

2. Implement more stringent student accountability and discipline (e.g. attendance).

3. Gradually seek to simplify organization structure and delegate decision making.

4. Develop a system for evaluating the performance of its graduates.

RDO, in addition to taking the lead in actions implied in the foregoing should:

1. Undertake an initial independent, informal survey of CUSS graduates to provide feedback for planning by last-stage Harvard technicians (see questionnaire, pgs. 45-46).

2. Limit participant training to non-U.S. institutions except for highly specialized medical skills and supporting management.

3. Together with CUSS/Harvard, jointly agree on the objectives set forth in Logframe and determine reasonable targets for the remainder of the project.

7. SELECTED EVALUATION RESULTS

A. Four areas of investigation are set forth in the Scope of Work of the Evaluation Team (see Introduction of report). The following summarizes our conclusions for each area:

1. The CUSS design for training and research in preventive MCH is working reasonably well and is turning out graduate physicians prepared to cope with African health needs. Training of nurses is primarily in administration and supervision and consists mostly of other African nationals. Training in para-medical subjects has been neglected and is just beginning to enroll students and turn out graduates.

2. Harvard-recruited technicians (inputs) have played a catalytic role and have assisted CUSS to reduce the time of maturation by years in training, research and MCH delivery service. The organization and management of outpatient clinics (outputs) have provided a working laboratory for training in preventive MCH. The child spacing clinic has supported the emerging liberalization of Government policy toward preventive family planning, though abortion is still illegal. The training in MCH received high, if not the highest, ratings of interest by students in the first two graduating classes.

Failure to complete the hospital, to fully implement a team approach, and to conduct evaluation for feedback were outputs which did not support the original timetable. Other purpose indicators - trained medical graduates, research reports, and improved attitudes toward child spacing - were targets which are on schedule. Viability is still weak, as evidenced in uncertain budgets, lack of trained middle-level counterparts, and incomplete coordination between Ministries and within CUSS itself.

3. Graduates are being posted to rural posts and a system of rotation speaks well for subgoal achievement. It is too early, at this time impossible, to measure the effect on maternal and child mortality and morbidity. The assumptions of improved statistical reporting and logistic support are not in evidence and our recommendations for redirection include more emphasis on these. The initiation of outreach programs and clinics continued at the Central Hospital will be measures of increased institutionalization and viability.

Reports on graduates to date attest to their ability to cope with clinical problems, Cameroonian health problems, and to enlist local support as required. This reflects the benefit of on-the-job training in village sites and clinics. Applied health care research has not been systematized and ambulatory health delivery systems in the countryside depend in great part on changes in traditional services being offered by the MOH. The latter is beginning to be adopted. There are many examples, however, of applied problem-solving techniques

which have resulted from Harvard/CUSS Training and Service: the use of the partogramme for tracking labor in birth, the joint timing of vaccination for measles and smallpox to provide a physical record, the "no-touch" packaging of IUD's in formol to prevent infection--to mention a few. In general, when compared with classical clinical medical training, CUSS graduates appear to be prepared to manage health problems in rural Africa.

4. Because of the establishment of other African country medical centers since the inception of CUSS, it is not the regional training center it was planned to be. It has trained six foreign medical graduates out of the first two classes of 70. Other African country students make up from two-thirds to three-fourths of the graduates in supervisory nursing (CESSI) from 1973 to 1976 (53 of a total of 73).

The CUSS model appears to have influenced the type of training and the emphasis on public health of the new Central African Universities--partly because of the familiarity of donor agencies with CUSS experience.

The Harvard Team has had an unmistakably beneficial effect on the growth and development of MCH training, research, and service within CUSS. It was directly responsible for the organization and management of ambulatory facilities and the increased availability of child spacing services and interest.

B. This evaluation responds directly to AID/W's request for recommendations on the continuation of the project. We recommend affirmatively. To RDO's request for redirection, we point to a revised Logframe, suggestions for new emphasis on institutionalization, deemphasis of service, and recommendations for project management. For newly posted AID personnel in RDO and AID/W we provide background and statistical evidence of the progress to date.

If joint RDO/CUSS/Harvard targets for the Logframe indicators are subsequently determined, the report will have helped to set the stage for an organized final evaluation - perhaps in 1979 or 1980 - when subgoal effects should be measurable and effects on goal objectives are possible of attribution by case studies or sample surveys.

Report to

Agency for International Development
AFR / DR

From

Oudens + Knoop, Architects and Planners

Project Review
University Center for Health Sciences
Yaounde, Cameroon

June 15, 1977

Order No: AID/afr-147-32

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Judens + Knoop Architects and Planners
1320 Nineteenth Street NW
Washington DC 20036
202 | 223-9064

June 14, 1977

Director, Office of Development Resources
Bureau for Africa
Agency for International Development
Washington, D. C. 20523

Attention: Ted G. Lee

Subject: University Center for Health Sciences
Yaounde, Cameroon

Gentlemen:

In accordance with Item No. 1 of Order No. AID/afr-147-32, forwarded herewith is an original and twelve copies of a report covering a review of the current status of the University Center for Health Sciences in Yaounde, Cameroon.

Prior to departing Yaounde I reported orally my findings and conclusions to RDO staff and these are summarized as follows:

1. Construction was completed on May 16, 1977 five months beyond the scheduled completion date of December 11, 1976.

2. Construction is in accordance with planning as previously agreed to be supportive of project objectives except as follows:

   a) Pediatric and maternity unit support facilities were not revised as required for phased construction and occupancy. Modifications are necessary on each of these levels to permit proper function.

   b) The delivery suite has been constructed as originally planned and revisions requested by Dr. Drouin in 1975 have not been implemented. While the department will function as constructed, the program basis on which Dr. Drouin based his revision proposal cannot be achieved.

3. The quality of construction and engineering systems is, on the whole, very good with the exception of finish details in certain areas which are poor to fair but consistent with my experience with similar construction in West Africa. As described in my report, central storage and laboratory accommodation for butane gas produces a potential hazard and should be corrected.

4. The PMI/Consultation sections were completed in April 1976 and turned over to the CUSS. With the exception of limited and temporary use of the Consultations area for administrative functions, these sections remain unoccupied. There has been no maintenance or cleaning and only limited security for these areas. They are dirty and certain appurtenances (light fixtures and mirrors) have been stolen. Moderate restorative work will be required prior to occupancy. It is extremely important that the CUSS undertake management of the building in a responsible manner to avoid deterioration of building and systems, theft, and invalidation of construction contract warranty provisions.

5. The remainder of the hospital was completed and turned over to the CUSS on May 16, 1977.

6. I reviewed all electrical, plumbing and airconditioning and ventilation systems and find these have been planned and installed, with distribution, valving, etc., to permit independent service to and incremental occupancy of all building sections. Therefore, engineering systems will support occupancy of the PMI/Consultations sections prior to the rest of the hospital. However, all completed systems should be operated at maintenance levels to avoid deterioration even though the areas served are not occupied.

7. Equipment included in the construction contract has been installed and is operational. Bids have been invited

for Groups II and III equipment and furnishings for the medical-technical block and central sterile supply (to be provided by FAC) and estimated installation is February 1978. The situation on Groups II and III equipment for all other areas including PMI/Consultations sections is approximately as it was during my visit in May 1975, i.e., SCET has developed a preliminary list for these areas but GURC/MoE has not yet contracted with SCET to proceed with bid document development. Dr. Monekosso reported that this has now been approved. Assuming this is the case and work proceeds without further delay, estimated installation of this equipment is February-April 1978. Dr. Monekosso further advised that basic equipment and furnishings necessary to occupancy of the PMI/Consultations sections has been separately acquired and is currently stored in the PMI.

8. Dr. Monekosso advised that CUSS will occupy the PMI/Consultation sections in August 1977 and will extend occupancy to other hospital services on an incremental basis as equipment is received.

9. Dr. Monekosso stated that the Harvard technicians will have a key role in the establishment of outpatient functions in the new building in:

   a) Assuring that the CUSS/Harvard philosophy of team-delivered maternal and child health services remains the primary basis for programs in the new hospital.

   b) Assuring and facilitating the transfer of present CUSS pavilion and Mvolye Harvard-run clinics to the new hospital.

   c) Completing the institutionalization of the CUSS/Harvard program by training CUSS graduates to assume responsibilities for teaching and service in the new hospital.

10. Dr. Monekosso advised that current operating funds in the amount of 150,000,000 FCFA per year for the CUSS pavilions and Mvolye teaching clinics will be applied to operation of the new building. Additional funding has not been set by Government but is budgeted at 300,000,000-400,000,000 FCFA per year. Dr. Monekosso was unable to provide a detailed basis for these budgeted funds. It is important that financial details be developed and reviewed to verify that budgeted funds will meet operational requirements and support project objectives.

11. Presently estimated construction costs of 2,697,500,000 FCFA exceed estimates at contract signing by approximately 447,500,000 FCFA and budgeted funding from the three donors by approximately 1,124,500,000 FCFA. Presently estimated equipment costs exceed the February 1975 estimate by 237,500,000 FCFA and budgeted funding from GURC and FAC by approximately 831,500,000 FCFA. Construction cost increases over available funds are attributable to inadequate funds at the time of contract signing (677,000,000 FCFA), cost escalation in excess of that anticipated at contract signing (350,000,000 FCFA) the maternity/pediatric shell construction (67,500,000 FCF and supplemental work during construction (30,000,000 FCFA

Equipment cost increases over available funds are attributable to an initially inaccurate equipment cost estimate combined with escalation from the time of the estimate in 1972 to the revised estimate in 1975 (594,000,000 FCFA) and to further escalation from 1975 to 1978 during which period timely procurement of equipment was not pursued (237,500,000 FCFA).

Additional construction funding is immediately required and this funding should be increased to include 20,000,000 FCFA for the completion of site grading and landscaping. If AID participates in this funding I recommend that leverage be applied to insure that this sitework is included.

Also, the Architect, Mr. Ecochard, has not yet been paid 2,500,000 FCFA of his basic service fee nor has he claimed or received additional service fees for

Oudens + Knoop Architects and Planners

the extensive revisions he made during design and working drawings in response to AID program objectives. In my opinion, he has completed his basic services professionally and effectively, and, further, it was his cooperation and positive attitude that made it possible to accommodate the AID program which developed after the original building program and design had been established. I feel that AID should also apply leverage based on further funding to insure that Ecochard is compensated for basic and additional services.

There appears to be no immediate requirement for consulting services on my part relative to corrective actions and/or revisions necessitated by current project objectives. Modifications will be required in the maternity and pediatric nursing units as described in my report, and I believe plans I submitted in June 1975 (Appendices H & I) still provide an appropriate basis for this work. Additional modifications may be indicated as the building is occupied and program objectives are further defined. Dr. Henn has requested that I provide a post-occupancy evaluation at some appropriate point after the building has been occupied to assess building response to project objectives and actual caseloads and to identify and determine the feasibility of modification requirements.

Yours truly,

Gerald F. Oudens

Gerald F. Oudens
OUDENS + KNOOP, ARCHITECTS

GFO:mo
Encl.

Contract No. AID/afr-1049

Progress Report
for the period November 29, 1973
through June 30, 1977,
with a request for funds from July 1, 1977
to permit completion of the basic
purpose to provide technical support
to the University Center for the
Health Sciences, Yaounde, Cameroon
in the area of Maternal and Child Health.

Submitted by Harvard University,
Charles A. Janeway, M.D.
Campus Coordinator

Re: Contract No. AID/afr-1049

PREAMBLE

Progress Report

In approaching the final year of this project, it is necessary to point out certain objectives and emphases which differ from those in the early phases of the project.

I. In the first phase, covering the academic year, 1973-74, Dr. Noel Guillozet was appointed pediatrician and project leader in the field. A large part of his first year was spent in getting the project established--first by assisting in recruiting the remainder of the team; second, in finding housing and other essential support services in Yaounde for the other members of the team; third, by establishing administrative relationships with the AID Mission, Yaounde; and finally, by working with the CUSS faculty and administration to find ways in which the Harvard team could be most effective in developing a strong program of teaching and research in the fields of maternal and child health.

II. The second phase, during the academic years of 1974-75 and 1975-76, consisted in the activities of the team in the field, which included (1) development of a basic curriculum for maternal and child health teaching, largely built around the only available facilities for clinical instruction, the CUSS Pavilion at Hospital Central, and to a lesser extent, for more advanced students, at the health center in Mvolye. (2) Each member of the team, in addition to these cooperative efforts, developed certain activities in their own area of special interest through which institutional arrangements for better services and teaching were established, background research was initiated and teaching materials were developed, as follows:

Pediatrics - Dr. Noel Guillozet accomplished several important things:

1. With Miss Nancy Garrett, teaching clinics were established at the CUSS Pavilion for research and demonstration of optimal maternal and child health care, as well as follow-up clinics for sick children who had been under the care of individual members of the pediatric staff in the hospital. Out of this, came demonstrations that regular immunization of children was possible, and this has now been spread to the whole city of Yaounde through the activities of the Ministry of Health with the help of OCEAC.

2. Compilation of figures for baby weight was begun for recording the growth of optimally fed and supervised infants in Yaounde during the first year of life, as well as figures for growth in malnourished children discharged from the hospital for comparison. These are now being organized into growth standards for the first year of life, an essential tool for health supervision.

3. A laboratory was set up in the CUSS Pavilion, where students could carry out simple procedures for the direct study of blood, urine and spinal fluid on their patients.

Miss Nancy Garrett, as pediatric public health nurse, served a number of critical functions in the early days of the program.

1. When Dr. Guillozet was asked by Professor Nkoulou to look after a ward for acutely ill infants, she really served as a resident in supervising the day by day work of the students who were acting as interns.

2. She worked very closely with Dr. Guillozet in teaching medical students on the ward and in clinics.

3. She was able to establish contacts with the nurses training schools of the Ministry of Health and to provide supervision and instruction for student nurses assigned to the Hospital Central and the CUSS Pavilion clinics for their clinical work.

4. Finally, she saw the need for teaching aids for health education and instigated, with the help of both Cameroonian and foreign personnel, the preparation of a series of posters emphasizing the importance of prenatal maternal nutrition, breast feeding, and supplementary and weaning food preparation for the first few years of life. This series of posters has been completed and is being tested in the field by the Health Education section of the Ministry. In February 1977, approximately 10,000 copies of this series of posters were presented to the Ministry of Health by the United States Ambassador as a permanent contribution of the U. S. to the health of Cameroonian mothers and children.

Obstetrics and Gynecology - Dr. Pierre Drouin

1. Dr. Drouin was very effective in working closely with Dr. B. T. Nasah, Chief of the Obstetrics-Gynecology Service, in getting the physical facilities of this terribly busy service at the Hospital Central significantly improved for patient care and in developing an ongoing program of teaching and research.

2. The systematic collection of statistics provided a rational basis for identification of high risk mothers and for monitoring the effects of improvements in prenatal care and obstetrical practice upon maternal and infant morbidity and mortality. The importance of this basic work has been presented and summarized in a recent publication (Children in the Tropics, No. 105, 1976), which is widely distributed in French or English throughout anglophone and francophone Africa.

3. The excellent teaching in maternal care provided by this department has attracted a large number of students to carry out small research projects and to write their theses on subjects related to maternal and infant health.

Miss Lise Cousineau, as midwife working with Dr. Drouin and Dr. Nasah, has run a series of clinics established in the Department of Obstetrics-Gynecology through which studies of a number of major health problems have been made.

1. Family Planning - Family planning services have been offered to mothers; research with a Cameroonian sociologist has demonstrated which particular groups of women desire to take advantage of its availability, and the results are beginning to indicate how effective this has been. A report submitted to the government may hopefully provide a basis for consideration of integrating family planning services into the national health program, although this has not become official policy as yet.

2. A second clinic is concerned predominantly with maternal anemia, which is an important complicating factor in obstetrical care.

3. Prenatal clinics for high risk mothers have been established, as well as a follow-up clinic for mothers and their babies. Undoubtedly its availability will result in the ultimate decentralization of low risk obstetrics to local health centers and the concentration of high risk obstetrics in the University service.

III. The third phase corresponds to the current academic year--7/1976-6/1977, with a change in personnel as follows:

1. Dr. Rainer Arnhold, from the University of California Medical Faculty at San Francisco and the Permanente Program in San Rafael, California, has served as Project Director and Pediatrician.

2. No suitable replacement could be found for Dr. Drouin in Obstetrics and Gynecology.

3. Miss Lise Cousineau has continued as Nurse-Midwife.

4. Miss Susan Colgate, a Ph.D. candidate in nurse midwifery at the University of Illinois, has replaced Miss Nancy Garrett as Pediatric Nurse.

By overlapping with their predecessors, Dr. Arnhold and Ms. Colgate have made a smooth transition. Dr. Arnhold has been an ideal team leader for this period, sufficiently experienced to act as a steadying influence, and sufficiently cognizant of the progress the Cameroonians have made, to remain tactfully in the background, helping wherever possible and not threatening their positions as members of the permanent staff of CUSS. Consequently, this phase has been characterized by very good relations between our team and the CUSS faculty, as well as by increasing coordination between those responsible for promoting and teaching maternal health and those concerned mainly with teaching child health, thus realizing what had been previously planned by a joint committee of faculty from obstetrics, pediatrics and public health, as a Program for Mother and Child.

Ms. Colgate has, with the understanding of the AID Mission in Yaounde and approval of our team, spent her time with Dr. Arnhold in improving service and teaching in the pre- and post-natal clinics at the Hospital Central and at the health center at Mvolye. But, in addition, she has played an active role in assisting with teaching at the Nursing School, adjacent to the Hospital, run by the Ministry of Health. We all approve this activity, because of the very important role which nurses and mid-wives do and must play in the health care system. Ms. Cousineau has continued her activities in family planning under Dr. Nasah's direction, and, with a Cameroonian counterpart selected, trained, and working with her, feels relatively secure about the future of the family planning program. Whether she will continue in this activity, return to North America, or undertake a new role in the family planning program will have to be settled in the very near future.

IV. The final phase. The next academic year (1977-78), and possibly part of 1978-79, should see the completion of our technical assistance and phasing out of the Harvard effort in support of maternal and child health at the University Center for the Health Sciences. Final judgment of the success of this effort, can only be made in the future, as the students affected by it man the health services and translate what they have learned from their education at CUSS into actual health practice throughout the country.

One important test will come during this coming year as the long planned Community Hospital, built beside CUSS and close to the Campus of the University of Yaounde, opens its doors to patients, students and faculty. It should become the focal point for clinical teaching in community health practice in an integrated system of health centers, mission stations and small hospitals serving the primary health care needs of a population of approximately 200,000 people in rural areas and small towns in a wedge-shaped area extending out some 150 miles or so from Yaounde.

This change of direction for CUSS, now that the physical facilities planned to support its unique curriculum are finally completed, means that the team will face new problems with their Cameroonian colleagues during the coming year. Thus, the changes in personnel, necessitated by

the impossibility of recruiting everyone for two year terms, may not have a deleterious impact. The new Team Leader, Dr. Robert W. Chamberlin, from full-time academic pediatrics at the University of Rochester, where the Department of Pediatrics has achieved national leadership in studies of medical care and the delivery of health services on a community-wide basis, should be well prepared to lead the team's efforts in this newly expanded field laboratory which now has become available to CUSS. In addition, an obstetrician, Dr. John Naponick, has been recruited from McGill University. He seems to combine the essential competence in surgical and emergency procedures with an interest in preventive and social programs for maternal and child health.

The goals for this coming year's program are simple.

1. To accomplish a smooth transition for the new members of the Project team.

2. To help the Cameroonian faculty develop a well organized linkage of services for mothers and children from village to health center to community hospital for better patient care and teaching.

3. To encourage research on relevant health problems, wherever this can be strengthened, through links with colleagues in other universities, who have special expertise and equipment, in the hope of developing ongoing collaborative research programs and intellectual exchanges between Cameroon and American universities.

4. To make sure that appropriate Cameroonian counterparts have been trained, so that there will be continuity after the Harvard team leaves.

5. It is very important that thought be given during the year to ways through which, for a relatively small expenditure of funds, either from AID or from private sources, an ongoing mutually advantageous relationship can be continued between faculty members in the U.S. and Cameroon so that the large effort and expense which this Project required and the momentum which it has generated will not be dissipated in the years to come.

6. To leave appropriate teaching aids in maternal and child health, not just for students at CUSS, but for health education of the people as well, particularly in regard to major problems such as nutrition, immunization and the control of parasitic and infectious disease.

On my last visit to Cameroon in February, 1977, it was apparent that the relationship between the nurses on our team and the faculty of the School of Nursing in Yaounde had developed very fruitfully. Experience in Cameroon, as in other parts of Africa, clearly indicates that the bulk of front-line health services can be provided and will have to be provided

by nurses, midwives, and other technicians, a position strongly endorsed by WHO. Therefore, our team has come to feel that the proper education and training of nurses and midwives is as important to the development of effective health services as the education of the smaller number of doctors who will have to direct the efforts of the health teams, of which these professionals form the backbone.

Out of this thinking and experience has come a new proposal, enthusiastically supported by the AID Mission, to have the technical assistance staff of our Project assist the Nursing School (adjacent to the Hospital Central) in its teaching program. In so doing, they have found a real lack of books for teaching and particularly, no textbook on public health and community nursing for Africa available in French.

To meet these needs to strengthen nursing education, small reference libraries with basic texts are being placed in the four teaching rooms of the Nursing School in Yaounde.

A proposal has been submitted to prepare a suitable basic textbook for public health nursing in Africa. Such a book would be very important for the improvement of education of nurses, midwives and other auxiliary personnel in public health and community health care. The proposal visualizes utilizing the special knowledge of an experienced group, including Cameroonian faculty members of the Nursing School, Ms. Susan Colgate of the Harvard team and Mlle. Jeanne Carriere, who has spent five years in Cameroon as a key member of the Canadian technical assistance team in the field and at CUSS. Such a book would be a fine example of international cooperation to fill an urgent need, and would leave a permanent contribution to maternal and child health in both anglophone and francophone Africa.

HARVARD-CISS PROJECT
BUDGET
July 1, 1977 - June 30, 1978
Contract No. AID/afr-1049

I.	SALARY			
	Professional			
	*Dr. Charles A. Janeway, Campus Coordinator		$12,000	
	Dr. Robert W. Chamberlin, Team Leader, Lecturer on Pediatrics		32,000	
	Dr. John J. Naponick, Instructor in Obstetrics-Gynecology		25,000	
	Miss Susan Colgate, Associate in Nursing		20,000	
	+Miss Lise Cousineau, Associate in Nurse-Midwifery (6 mos.)		11,000	
	Miss Jeanne Carriere, Lecturer on Pediatrics and Community Health (9 mos.)		21,000	
			121,000	121,000
	Non Professional (Hospital Personnel Cost)			
	Nancy Hurst, Secretary		5,820	5,820
	Fringe			
	16% Professional		17,440	
	15% NonProfessional		873	
			18,313	18,313
	*retired officially - no fringe			
	TOTAL SALARY			145,133 $145,133
II.	EQUIPMENT (not subject to overhead)		5,000	
	TOTAL EQUIPMENT			5,000 5,000
III.	CONSUMABLE SUPPLIES			
	Supplies; Printing & Stationery (including special teaching aids, slides and work on public health manual)		25,900	
	Participant Trainee Supplies		1,000	
	Telephone & Telegram		1,750	
	Postage		1,525	
	Freight (including moving and storage charges)			
	Dr. Chamberlin	7,000		
	Dr. Naponick	3,000		
	Miss Colgate	900		
	Miss Cousineau	3,600		
	Miss Carriere	600		
		15,100	15,100	

+ It is anticipated that this item will be diminished, but inasmuch as her future plans are not settled, this is put in as a contingency for someone who has served the Project faithfully and well.

III. CONSUMABLE SUPPLIES (contd.)

Services Purchased					
Post Differential/Post Allowance (subject to rate changes)					
Dr. Chamberlin	4,400/3,290	7,690			
Dr. Naponick	3,750/3,290	7,040			
Miss Colgate	3,000/3,290	6,290			
Miss Cousineau	1,650/1,645	3,295			
Miss Carriere	3,150/2,460	5,610			
		29,925	29,925		
Local Hire in Yaounde			11,500		
Participant Training Stipends					
Committed:					
Mrs. Dorothy Nasah	$425/mo. x 6	2,550			
Mrs. Grace Walla	382/mo. x 12	4,584			
Dr. Mbede	425/mo. x 3	1,275			
Uncommitted:					
Others to be selected during year		7,500			
		15,909	15,909		
Consultants - 2 @ $2,000			4,000		
			106,609		
TOTAL CONSUMABLE SUPPLIES				106,609	106,609

IV. TRAVEL

Team		
Dr. Janeway (1 trip to Yaounde)	1,600	
Dr. Chamberlin (Rd. trip Rochester - Yaounde)	2,160	
Dr. Naponick (to Yaounde)	980	
Miss Cousineau (Yaounde to Ottawa)	1,030	
Miss Colgate (R & R)	1,200	
Miss Carriere (Montreal to Yaounde)	1,000	
Travel in Africa or Europe for study (4 x $1,000)	4,000	
Travel related to Public Health Nursing Textbook Project	2,700	
Participant Trainee Travel		
Mrs. Nasah (return to Yaounde)	800	
Mrs. Walla (return to Yaounde)	850	
Dr. Mbede (Rd. trip Yaounde-Boston & U.S. travel)	1,950	
Other trainees to be selected	3,000	
Travel for two consultants	3,200	
	24,470	
TOTAL TRAVEL		24,470	24,470

V. MISCELLANEOUS

Vehicle - maintenance and operation	6,000
Housing - team of 4	28,000
Health Exams & Insurance	550
Foreign Workman's Compensation Insurance	22,342

V. MISCELLANEOUS (contd.)

Participant Trainee Expenses				
Mrs. Masah (tuition)	1,813			
Mrs. Walla (tuition)	5,936			
Dr. Mbede (tuition)	1,000			
Expenses for other trainees	5,000			
	13,749	13,749		
Assistance with publication costs for book on health education for use in Cameroon schools by CUSS staff		2,500		
Publication costs for Family Planning Manual		4,000		
Additional Miscellaneous Expenses		5,000		
		82,141		
TOTAL MISCELLANEOUS			82,141	82,141

SALARY	$145,133
EQUIPMENT	5,000
CONSUMABLE SUPPLIES	106,609
TRAVEL	24,470
MISCELLANEOUS	82,141
SUBTOTAL	363,353
VI. OVERHEAD 47.8% (on 358,353)	171,293
TOTAL	534,646

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REPUBLIQUE UNIE DU CAMEROUN
Paix — Travail — Patrie

Ministère de l'Economie et du Plan

DIRECTION DE LA PROGRAMMATION

UNITED REPUBLIC OF CAMEROON
Peace — Work — Fatherland

Ministry of Economic Affairs and Planning

DIRECTION OF PROGRAMMING

N° MINEP/DPROG/[illegible]

Yaoundé, le 4 AOUT 1978 19
Yaounde, the

Réf. :

Le Ministre de l'Economie et du Plan
The Minister of Economic Affairs and Planning

Objet : Financement du dépassement des coûts de construction de l'Hôpital du C U S S.-
Subject :

à M. onsieur le Directeur du Bureau Régional de l'US/AID
to Mr.

- Y A O U N D E -

Monsieur le Directeur,

La construction de l'hôpital du CUSS a fait l'objet, avant la réception des bâtiments, de l'Avenant n° 3 au marché n° 94/AO/BE/73-74 de F. CFA 798 625 000 représentant le dépassement des coûts des travaux.

Compte tenu de la conjoncture économique particulièrement difficile du moment, le Gouvernement camerounais n'a réussi à inscrire, dans le cadre du Budget d'Investissement Public, exercice 1978/79, qu'une dotation de 448 625 000 F. CFA contre 150 Millions F. CFA supportés l'exercice écoulé.

Le Fonds d'Aide et de Coopération (FAC) s'étant déjà prononcé uniquement pour le financement d'une partie des équipements et, en considération des risques certains d'augmentation au égard aux fluctuations des prix que pourra entraîner par voie de conséquence le report sur l'exercice 1979/80 du paiement du reliquat de cet Avenant,

J'ai l'honneur de vous demander de bien vouloir prendre en charge les 25 % dudit Avenant, soit environ 200 millions F. CFA.

Veuillez agréer, Monsieur le Directeur, l'assurance de ma considération distinguée./-

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UNOFFICIAL TRANSLATION OF
LETTER RECEIVED IN FRENCH FROM:

MINISTRY OF ECONOMIC AFFAIRS AND PLANNING
YAOUNDE, CAMEROON

No. 4951/MINEP/PROG/F1.-

DATED: August 4, 1978

ADDRESSED TO:

The Director
USAID/Yaounde

SUBJECT: Financing of the CUSS Hospital Construction Cost Over-runs.

Dear Mr. Director:

Before completion of the CUSS Hospital construction, contract No. 94/AO/BE/73-74 was amended to show an amount increased by CFAF 798,625,000 representing the construction cost over-runs.

Considering the particularly difficult economic situation of the moment, the Government of Cameroon was able to budget only CFAF 448,625,000 for FY 1978/79 in its Public Investment Budget against CFAF 150,000,000 budgeted during last fiscal year.

The Fonds d'Aide et de Coopération (FAC) committed itself to finance only part of the equipment. Considering the risk of an increase in prices that could occur should the payment of the balance of this Amendment No 3 be carried over to fiscal year 1979/80, I would appreciate it if you would finance 25% of this Amendment No 3, or approximately 200 million CFAF.

Sincerely yours

/s/ Youssoufa Daouda
Minister of Economic Affairs and Planning