PD-AAA-592-A1
AFR
617.6
M487

698-D409

A.I.D.
Reference Center
Room 1656 NS

EVALUATION REPORT

USAID GRANT NO. AID/AFR-G-1163

DENTAL HEALTH INTERNATIONAL, INC.

BY

ROBERT MECKLENBURG, D.D.S., M.P.H.

DENTAL DIRECTOR, U.S. PUBLIC HEALTH SERVICE

PIO/T NO. 698-135-3-6167109

MARCH 10, 1976

A.I.D.
Reference Center
Room 1656 NS

Mecklenburg, Robert

Evaluation Report; USAID Grant No. AID/AFR-G-1163; Dental Health International, Inc.

March 10, 1976

31 pages

5 appendices

AID Contract Number:

Aid Project Number: 6980409

Source: ARC AFR 617.6 M487

The Dental Health International (DHI) project has created considerable political and general public favor. It has not made substantive changes in oral health, nor would such a brief effort be expected to have such an impact. Uniform support for the concept indicates that program modifications could lead to long term effective results. The current requirement that the project be economically self sufficient handicaps achievement of objectives in prevention and education and in reaching the greatest possible rural population. It is better suited as a demonstration project to define oral health needs, to determine methods for dental service delivery and to elevate public recognition of oral health as a legitimate social concern. The opportunity presented by the project to collect data that will be essential to rational dental problem definition and program development has so far been overlooked. The DHI grant should be continued because it: (1) is an excellent demonstration project; (2) has the potential to provide important data; and (3) is respected and appreciated by the governments who are unable to carry on an oral health program with national resources. The evaluator discusses (1) DHI and local hospital administration, (2) DHI and local hospital training, (3) USAID and DHI relations, (4) target group response and project goals and purposes, and (5) the problem of an adequate power supply.

African Warrior—Afrikanischer Krieger—Guerrier Africain

Colour Photo by John Hinde, F.R.P.S.

This postcard is intended to exemplify the vigor and happiness of African youth. To a dentist it exemplifies common oral conditions: materia alba, calculus, gingivitis, gingival recession and bone loss. Without personal hygiene and periodontal treatment, this person can expect to begin suffering from painful mastication, chronic infection, fetid breath and loss of teeth before reaching thirty years of age.

Mecklenburg, Robert

Evaluation Report; USAID Grant No. AID/AFR-G-1163; Dental Health International, Inc.

March 10, 1976

31 pages

5 appendices

AID Contract Number:

Aid Project Number: 6980409

Source: ARC AFR 617.6 M487

The Dental Health International (DHI) project has created considerable political and general public favor. It has not made substantive changes in oral health, nor would such a brief effort be expected to have such an impact. Uniform support for the concept indicates that program modifications could lead to long term effective results. The current requirement that the project be economically self sufficient handicaps achievement of objectives in prevention and education and in reaching the greatest possible rural population. It is better suited as a demonstration project to define oral health needs, to determine methods for dental service delivery and to elevate public recognition of oral health as a legitimate social concern. The opportunity presented by the project to collect data that will be essential to rational dental problem definition and program development has so far been overlooked. The DHI grant should be continued because it: (1) is an excellent demonstration project; (2) has the potential to provide important data; and (3) is respected and appreciated by the governments who are unable to carry on an oral health program with national resources. The evaluator discusses (1) DHI and local hospital administration, (2) DHI and local hospital training, (3) USAID and DHI relations, (4) target group response and project goals and purposes, and (5) the problem of an adequate power supply.

Table of Contents

Introduction 1

Evaluation activity 1

Findings

1. DHI Administration 2
2. Local Hospital Administration 6
3. DHI and Local Hospital Training 8
4. USAID and DHI Relations 10
5. Target Group Response and Project Goals and Purposes 11
6. Equipment 18

General observations 20

Conclusions 24

Recommendations 26

Appendix I Persons Interviewed

" II Resource Materials

" III Maps Showing DHI Activity Sites

" IV AID Grant Agreement

" V Scope of Work for Evaluation of DHI Project

INTRODUCTION

On June 27, 1975, a one year contract was signed between USAID, Washington, D.C. and Dental Health International Inc., (DHI) Athens, Georgia. The objective of the contract was to provide improved oral hygiene and dental care among rural populations in the African nations of Cameroon, Lesotho and Rwanda. In the grant DHI agreed to:

1. Recruit volunteer dentists and dental students to serve in rural areas for not less than eight weeks each.
2. Assign volunteer dentist to about four rural hospitals in each country specified to provide dental care services, dental health education and training of medical and paraprofessional personnel. These services were to be directed toward children, pregnant women and leprosy patients.
3. Provide equipment suitable for use in a rural itinerant program.
4. Organize the service program so that revenues meet expenditures and to amortize the cost of major equipment items.

The contract also calls for an evaluation of the DHI project late in the first year to assess DHI compliance with the grant, to assess the status of oral health and need for oral hygiene and care services in the rural areas of Cameroon, Lesotho and Rwanda, to evaluate oral health in relationship to related issues and to report on findings following site visits in Africa.

EVALUATOR ACTIVITY

Following a brief orientation to the DHI project by AID Washington, the evaluator travelled to Athens, Georgia to interview DHI staff, review DHI files and to acquire background material preparatory to the site visits.

Between February 7 and March 1, site visits were made in Africa. Interviews were conducted among employees of African governments, U.S. Consulates, USAID offices and private organizations who were knowledgeable about aspects of oral health or the DHI project. The dental public health-technical evaluator was assisted in each country by a local representative as follows: Cameroon, Mr. Felix Awantang, AID; Lesotho, Dr. Wendell Evans, Private Health Association of Lesotho (PHAL); Rwanda, Mr. Wayne King, Regional Economic Development Services Organization, East Africa (REDSO/EA). Persons interviewed are listed in Appendix I of this report. The general physical, social, economic, administrative and political environment was also assessed prior to and during the site visits. Resource materials are listed in Appendix II of this report. Maps marked to show the location of DHI volunteer dentist services are provided in Appendix III of this report. The DHI grant agreement is in Appendix IV and the Evaluation Scope of Work is in Appendix V.

FINDINGS

The findings are presented in accordance with the outline provided by USAID for the Scope of Work for Evaluation.

1. DHI Administration

Dr. Barry Simmons, President of DHI has established and set aside an office in his combined residence/private practice office building for use when managing the DHI grant. He has equipped it with a desk, typewriter, files, telephone answering device and xerox machine. In this room he also maintains, for display purposes, an extra field dental unit. His files were sufficiently orderly so that correspondence and financial records to be reviewed were easily located. Staff services are provided by the office dental assistant (telephone and records), a girl friend (typing) and another

friend who is also a member of the DHI board and the chairman of the Journalism department at the nearby university. Students prepare an impressive amount of publicity material related to Dr. Simmons' overseas visits. This is undoubtedly the most highly organized part of Dr. Simmons activity. Dr. Simmons private practice is predominantly oriented toward college students. During the university's summer recesses, he practices in underdeveloped countries. Last year, as part of the AID grant activities, he practiced in Rwanda. A bachelor who is very energetic, personable and dedicated to his profession, he directs the DHI program and develops new opportunities for foreign volunteer service by using a direct approach to people in high offices in church and state, both in the U.S. and abroad. His approach to the administration of the DHI project is clearly based on his charismatic personality.

Dr. Simmons provided a semiannual report as required. Except for logistic information, the report contains no hard information on the objectives of the grant e.g., services, dollars, length of volunteer duty, locations served, educational accomplishments, etc. The report is essentially a log or activity report. One accomplishment reported on page 5 is questioned as to the improved oral health in one area (Banso) as being the direct result of an earlier volunteer's visit since it was learned that periodic scheduled visits into the area by a Doualan dentist has occurred for several years.

Pre-project planning results have been variable. Governments have agreed to the project although not always kept apprised of the arrival, background and itinerary of each volunteer. There is no evidence that the reports required by the Government of Cameroon (GOC) (Fokam-Kamga) as a condition for approval have been provided by DHI. Selection of project sites, finalization of the fee schedules and paraprofessional training curriculum generally was

left for each volunteer to work out after arriving in the host country. Advance approval for in country travel had been arranged. There was no coordination with host government hygiene education programs in schools principally because most schools have no organized hygiene education program. (Most schools lack even an immunization program).

The procurement, shipment and delivery of equipment and supplies have caused difficulties in the field. The first volunteers in Cameroon and Rwanda arrived a week ahead of their equipment. Through no fault of DHI, a two year expatriate arrived shortly after the Lesotho volunteer arrived, so that both had to use the single set of equipment available until sufficient military surplus equipment arrived so that the volunteer could begin a separate education/extraction program. Volunteers were not provided with an equipment and supply inventory sufficient for them to make arrangements to bring with them the tools and materials which best suited their practice methods. Nevertheless, all adapted and carried out most basic clinical services. There have been extended gaps in the placement of volunteers resulting in some criticism that momentum has been lost. At several locations, the gaps have been propitious in that the locations served did not require a dentist quarterly because of a seasonal lack of funds, adverse weather and/or the low demand for care. However, placement experience has not been in accordance with the DHI project plan. The screening and selection of volunteers has been consistently excellent. All volunteers were held in high regard, took their work seriously and conducted themselves in a manner that reflected very favorably upon the U.S. One slight exception was Dr. Simmons himself, who offended several people with his brash approach and apparent lack of sensitivity for the customs and inter-relationships of people in each country. Even so he was respected

because of his dedication to his cause and his basic concern for people.

TABLE 1: VOLUNTEER SERVICE TIME

Volunteer	Dates Served '75-'76	Locations Served
Thomas Correia	Aug. 6 -Nov. 1	Lesotho 1/
Barry Simmons	Aug. 17-Oct. 18	Rwanda 2/
Kathryn Poleson	Aug. 25-Oct. 22	Cameroon 3/
Larry Stryker	Nov. 17-Feb. 17	Cameroon 4/
John Titus	Jan. 6 -Present	Rwanda 5/

1. Botsabelo, Mapoteng, Mantsonyane, Thaba Tseka, Roma, Semonkong
2. Gahini, Mibirizi, Mugonero, Kibagora
3. Banso, Mbingo, Achi-Tugi
4. Manyemen, Mbingo, Achi-Tugi
5. Kibagora, Mibirizi, (Mugonero, to be specified government hospital)

In the eight months since the grant was approved, there has been six months of volunteer service in Cameroon, three months in Lesotho and four months in Rwanda. It should be noted that it would have been logistically unrealistic to expect volunteers to be in the field within the first month.

The single greatest and repeated criticism of the project and the predominant suggestion for ways in which the project could be improved was in regard to providing advance, reliable information about when the volunteer would arrive in the country and where he would work. Commonly, either advance notice was given and no one appeared or the volunteer arrived without advance notice. The ensuing confusion, costs and inconvenience created considerable disenchantment with the DHI project.

Volunteers received one day of orientation in Athens, Georgia before their departure. They received a booklet of information pertaining to travel, contacts, program emphasis, equipment maintenance and selected general information. The two volunteers interviewed considered their orientation adequate. People in each country associated with the volunteer

thought them to be self sufficient, adequately informed and requiring no special assistance except for Dr. Stryker who had been instructed to go to Maroua, an area where no advance inquiry, information about political and administrative structure or relation to the established program had been obtained. Little AID assistance was necessary for volunteer activities. (Much more was required for equipment movement and administrative matters involving DHI).

Volunteers interviewed did not think that there were any particular surprises. The work met their expectations except that they would like to have been busier. Backstopping was totally inadequate in Cameroon and Lesotho because the primary administrator-coordinator for the project, Dr. Simmons, himself went into a remote area of another country. Communications in remote areas of Africa are slow and unreliable at best. This action was regarded as an evidence of poor judgement and irresponsibility since new programs inevitably have administrative problems. This action contributed to the disenchantment of people responsible for administration of the project in field locations.

2. LOCAL HOSPITAL ADMINISTRATION

All local hospital staff invariably provided a maximum of project support consistent with their resources and the amount of notice received beforehand. All were in favor of having competent dental services, (Senior dental students are not wanted because of their lack of a degree legitimizing competence, speed and level of experience) and were willing to make accommodations in favor of the project. Some hospitals are in financial

difficulty (payrolls are not consistently met) so that support involving a financial drain e.g., transportation solely for DHI and generator fuel costs cannot be provided. The opinion was repeatedly expressed that project revenues must cover these monetary costs. "In kind" costs such as space, lodging and food are freely given. Staff in Mission hospitals were dedicated to public service and were consistently concerned with any cost not of direct benefit to patient care. Hospitals provided some of their best local staff as dental aides. Commonly, two were assigned, rotating one at a time so that other hospital duties could also be maintained. The one to three week intervals when a dentist is available occurring two or three times per yeardoesnot cause undue difficulty or conflict with hospital operations. A full time program would create problems because of budgetary constraints (discussed in section 5).

Assigned dentist aides often have had, with virtually no training, considerable previous experience in the extraction of teeth. In general, aides were most impressive in their intrinsic grace, dexterity, orderliness and personalities. However, based on the observation of three aides at work and only by discussion with others, they were grossly handicapped in their effectiveness and efficiency because of their lack of proper training (discussed in section 3). Dental services, other than extractions, were not provided in the intervals between dentist visits except at Achi-Tugi.

Mission hospitals are generally isolated and by necessity quite self sufficient. Staff are expected to be versatile and they are. All hos-

pitals claimed to have at least one person on the staff who is skilled in maintenance. Dental equipment breakdowns were serviced locally in all cases except where unavailable parts were required. If parts were shipped, the hospitals would complete repairs and make adjustments.

3. DHI AND LOCAL HOSPITAL TRAINING

The training program was found to be totally inadequate. Volunteers were uneducated and inexperienced in training. There was no curriculum developed by DHI and provided volunteers or constructed by volunteers, no education materials except for the occasional use of proprietary (Dr. Poleson) and general public information (Dr. Titus), no teaching aids and no references left with the aids other than what they had written as personal notes. These notes were of variable quality and available from less than a quarter of the aids. Training did not always occur. When it did it consisted of one or two hours of discussion or a single demonstration. There was no continuity of training. Quality is poor in all respects. Training, such as it was, covered both preventive and corrective measures.

Table 2 Dental Aid Training

Hospital Served	Persons Trained	Trained By	Training Emphasis	On Duty In Feb.
Cameroon				
Achi-Tugi	John Bahamboh)	Stryker &	a,b,d,e,f,h,h,i	Y
	Elias Fai)	Poleson	a,b,d,e,f,g,h,i	Y
Banso	Boniface (Name?)	" "	(a,b,c,f ?)	?
	Issack Lontum	" "	a,b,c,f	Y
	Phillip Nfon	" "	a,b,c,f	Y
Manyemen	Sister Theresa	Stryken	a, ?	Y
	Joseph (Name?)	Poleson	a,b,c	Y
Mbingo	Samuel Nchifor	"	a,b,c	Y
Lesotho				
Botsabelo	None	-	-	-
Mapoteng	Pascalina (Name?)	Correia	none	N
Mantsonyane	Wandeli (Name?)	"	?	?
Morija	Solomon Nisihlele	2/	NA	Y
	Thabo Makhoaninyane	2/	NA	Y
Roma	Valentina (Name?)	Correia	a,g	Y
	Leona (Name)	"	a,g	Y
Semonkong	None			
Theba Tseka	(Same aid as Mantsonyane)		?	?
Rwanda				
Gahini	?	Simmons	?	?
Kibogora	John Hitimana	Simmons/Titus	a,b,d,e,f,h,j	Y
	Christopher Keroli	Titus	a,d,e,f	Y
	Jaffet Mudichawa	Simmons	a,b,e,f	N
Mibirizi	Sister Annunciata	Titus	a,d,e,h	Y
	Charles Rwamukwaya	Titus	a,d,e,h	Y
	Sister Benedictine	Simmons	a,b,e,f	N
Mugonero	Isriël Kanyabusamba	Simmons	a,b,c,f	Y
	Emilette Mukarukaka	Simmons	a,b,c,f	Y

1/ (a) Chairside assisting; (b) Patient education; (c) Community education; (d) Anesthesia technique; (e) Extraction technique; (f) Prophylaxis technique; (g) Charting; (h) Anatomy (i) Pathology; (j) Equipment maintenance.

2/ Trained by PHAL dentist, not Dr. Correia

It was not possible to interview all dental aides at all stations. Also, the interviews were often through interpreters so that some information was not obtained under the circumstances. It is quite possible dental aides received training in more topic areas than outlines above. Retention was good over an eight month period: 16 of 19. One of the 3 not retained remained in other hospital duties. Information was obtained for 10 of 13 hospitals served since the awarding of the grant.

The most consistent and practical training was in chairside assisting. At chairside the aides were most useful as interpreters, for patient management, and to run errands. Methods utilized for passing instruments, retracting tissue and clearing the mouth were inefficient. Office cleanliness was minimal in the one clinic where the DHI project was observed in progress.

4. USAID AND DHI RELATIONS

The relationship between USAID and DHI cannot be considered adequate. A large proportion of the administrative problems experienced in the field can be attributed to the lack of coordination and administrative support by AID Washington and DHI. USAID/Washington negotiated a Private Voluntary Organization (PVO) grant without obtaining any advance comment from the field offices that would inevitably become involved. Much worse, once signed, USAID/Washington did not send copies of the Grant and supporting materials to the field so that appropriate courtesies and assistance could be provided in a timely manner. Misunderstandings and problems with shipping, visas, governments and U.S. Embassies developed.AID field offices had to request information before any was forthcoming. Also, there was no evidence that AID Washington advised DHI of the organizational structure and services that would be available to DHI by having AID sponsorship. DHI, on the other, did not demonstrate administrative

ability. More than one person was asked to provide the same service. Follow-up was lacking. Letters go out undated and occasionally handwritten on anything. Courtesy copies to people affected by instructions and requests were almost totally lacking. Comments in the field generally revolved around the good intentions but lacking of organization of DHI management. Although the disorganization evoked humor, a large amount of administrative work was placed upon various field agencies,much of it presumed by DHI and assumed by necessity. Mission hospitals were not advised by DHI of the terms of the Grant or the plan for the year. Announced volunteers were cancelled without explanation. Hospitals do not know when and if another volunteer will be sent nor have they been asked if one would be appropriate at a particular time.

Mission hospitals regard the project as partially successful. They are anxious to have preventive, corrective and educational services having been confronted for years by a chronic and enlarging dental emergency care program. However, the timing of volunteer visits do not match local conditions. Therefore, volunteers are often underutilized. Their background has not prepared them for preventive and educational services which are not clinically-patient oriented. Attempts at community education varied widely and were generally subservient to clinical treatment services. The program is not considered successful in terms of DHI administration. However, this is beginning to be compensated by the increasing administrative competence within each country by PHAL (Lestho) and BUFMAR (Rwanda) and the fine interdenominational cooperation that exists between the mission hospitals in the Northwest province of Cameroon.

5. Target Group Response and Project Goals and Purposes

DHI did not develop and distribute standard forms and guidelines for reporting information so that special target groups could be identified

through the records available. Age, sex, medical conditions and race was not determinable. No information on the need for care was collected. Services provided such as restorations and extractions are not specifically identified by tooth. Therefore information on these matters were derived indirectly from the records and through interviews.

a. African locals are made aware of the project through radio, market place, school and church announcements except when volunteers arrive without notice. Dental services other than extractions are not well understood. People commonly present themselves for care after the volunteers have moved on.

b. School children are screened and notes sent home requesting that children come to the dentist with the required fee. Perhaps 10 percent will show up for dental services.

c. As many or more adults are seen as children.

d. As many males are seen as females, except in Lesotho where adult females are seen the most (by 6:1) because of the large number of males who are working in South Africa.

e. There are few pregnant women treated. Half of the hospitals referred them to the dentist from antenatal clinics and half did not.

f. One leprosy hospital was served in Cameroon and Lesotho, one time each. Leprosy patients in other hospitals may have received treatment.

g. Caucasian hospital staff, church staff and other caucasians in the community are among the first to seek care and comprise up to 25% of the total patient load.

Three of the five volunteers conducted some type of community hygiene education program. The quality of this activity was not determined.

No overall improvement in physical health was observed or expected since that usually would require a program sustained in a community for, at the very least, three to five years. Conditions may actually move in the other direction in Rwanda where there is a high potential for another famine such as occurred in 1974. Hospital deliveries are decreasing as fewer women can afford to stop looking for food to come in and Kwashikor clinic case loads are increasing.

No evidence was found of poor quality work being performed within the project year. Clinical services are essentially limited to prophylaxis, restorations and extractions. Periodontic, orthodontic, fixed or removable prosthodontic and the more complicated surgical procedures are not performed. A few endodontic procedures (pulpotomies) have been performed but the clinics are not suitably equipped for complete root canal therapy. Therefore, the clinical services provided are of the most basic and simplest nature. Although far from comprehensive, the services provided are primarily those which were planned and which, from the public health point of view, provide the greatest benefit for the longest time to the greatest number of people.

Fees were paid by patients except by those persons who were lepers. All mission hospitals charged nominal fees for clinical services so only people with fees presented themselves for dental treatment. Therefore, the problem of turning people away was not considered important. A record is kept of the funds received from each patient. The patient does not get a receipt nor do hospitals maintain a personal record. The volunteer usually

is responsible for bringing the money and records to the central accounting points; two in Cameroon, PHAL in Lesotho and BUFMAR in Rwanda. Reimbursements for DHI expenses are then made to the hospitals. Records were packed (or lost?) in Lesotho so could not be examined, kept in various ways in Cameroon and maintained at BUFMAR in Rwanda. Therefore, checking records was difficult. There was no consistent method for managing records and maintaining balances among the three countries. Disbursements have primarily gone toward generator fuel costs and for transportation costs. Requests for reimbursements in Rwanda have been less than actual experience. Hospitals are making a serious effort to conserve funds so that they can pay for the equipment as quickly as possible.

The project is believed to be losing money in Cameroon, breaking even in Lesotho and making money in Rwanda, the latter partly misleading but also due to the high density of the rural populations. Cameroon has a high transportation cost because of the distribution of hospitals served and Lesotho is average in consideration of the mix of lowland and mountain sites served. Mountain transportation has a very high related cost and, should a second volunteer concentrate his work in the mountains because the full time PHAL dentist is concentrating his efforts to the lowland, future costs may be expected to be much higher.

Table 3: Revenues and Expenditures

Item	Cameroon (Cam. Francs)	Lesotho (Rand)	Rwanda (R. Francs)
Balance 6-75	132,370 1/	0	0
Revenues to 1-76	473,020 2/	NA	220,342
Expenses to 1-76	514,020 3/	NA	30,002
Balance	91,370 CF	NA	190,340 RF

1. Earned by Barry Simmons before AID grant fiscal year

2.	Achi Tugi (Presbyterian)	161,574 CF
	Manyemen	none
	Banso & Mbingo (Baptist)	311,455 CF
		473,020 CF
3.	Achi Tugi (Presbyterian)	160,000 (est.) not breaking even
	Manyemen	NA
	Banso & Mbingo (Baptist)	334,020
		514,020 CF (est)

Dr. Poleson earned 161,575 CF and Dr. Stryker earned 78,550 at Achi-Tugi in August 75 and January 1976, respectively. The latter is not included in the table above. Dr. Simmons earned 42,170 RF and Dr. Titus 16,765 RF at Kibagora, Rwanda in August and January respectively. The latter is not included in the table above. No other comparisons in Rwanda were possible since Dr. Titus was still working at his second station and neither revenues nor expenses for him were available.

It is interesting to note that the project emphasis is upon preventive, educational and special group services and to make the project self-supporting. The desired services and groups do not produce much revenue. Yet to support the activity and to amortize the cost of equipment necessary to carry on the program, higher revenue but lower priority extraction and corrective services must be provided. This is a "Catch 22" situation. Volunteers have concentrated their efforts in the revenue producing services in an effort to sustain the self-supporting concept. Even so, the cost data does not appear to sustain the practicability of the concept under the itinerant conditions required of a rural program.

No people involved in the Mission hospitals believed that revenues generated from prophylaxis services could sustain the cost of a full-

time dental aide (hygienist) at the present level of oral health education although it may be possible after several years of exposure. This is consistent with behavior-service relationships in various areas of the U.S.

The Cameroon program will not likely be able to purchase a dental unit. The PHAL has purchased one unit using other PHAL funds together with dental revenues but funds are not accruing for another unit required if another volunteer would be assigned to Lesotho. At the current rate it will take five to eight years to purchase the unit now used in Rwanda. Eight to ten years is the expected life for this type of equipment. As the program is currently operating it does not seem likely that additional units can be purchased.

Mission hospitals are well organized and maintain a wide variety of equipment including the installation of replacement parts. Dental equipment is not complicated, although it has many special parts. There was no evidence that Mission hospitals were unable to maintain the equipment now in the field.

There was evidence that the DHI project had an impact within each country beyond the direct services provided in the project. In Cameroon, CUSS has organized a dental auxuliary training program and may consider including oral health within their rural community education program. Although interested in a dental school and recognizing a need, there is no action planned since existing programs need strengthening first. One Mission hospital is so convinced of the value of dental services that it is now considering recruiting a volunteer dentist on its own. In Lesotho a dental health component was added to the Five-Year Health Plan and the

PHAL organization has committed itself to providing administrative support and at least one dentist in the field for the next two years. The Rwanda Minister of Health is actively seeking an extension of the project to include government hospitals. In all three countries Mission staff recognize that oral health is a legitimate component of general health. The presence of a full-time Australian dentist with PHAL and a Belgian dentist in Kigali are independent and coincidental phenomena not created by DHI activities.

The DHI project in Lesotho and Rwanda is administratively focusing on the PHAL and BUFMAR organizations which coordinate all private health services in their respective countries. In each case the rural health organization represents 50% of the health services for the country. The DHI project is compatible with the other services and objectives of PHAL and BUFMAR. At the moment Cameroon does not have an adequate in-country administrative focus for the project, although each mission staff has someone willing to coordinate the project. As is typical of all rural, volunteer programs, success is usually dependent upon a single individual in a setting where there is a rapid staff turnover.

The DHI project has focused upon rural population in three countries. All locations served were among the most remote from the urban centers possible except for two locations in Lesotho which may not be covered by DHI in the future. Volunteers were in the field in all three countries within 5 to 8 weeks following the signing of the grant. Immediate care was provided. However, care has not been continuous. The third dentist for Cameroon was cancelled with no explanation during the week before his expected arrival. A second dentist had not followed the first

in Lesotho and there is no word that one is planned. A second dentist is in Rwanda following a twelve week gap. All stations agree that a spacing of volunteers may be best but that the spacing, rather than as currently practiced, should be related to local conditions so as to ensure the maximum possible utilization and broadest coverage of rural populations. This has not occurred to date because of the deficient coordination between DHI, AID Washington and the countries involved.

There has been no research component in this project, nor study, nor survey component. No protocol exists, no standards were established, no measures recorded or methodology practiced. Neither Dr. Simmons nor any of the volunteers have demonstrated any knowledge about or experience in research. The sample of dental pathology and water samples taken by Dr. Titus even lacked a control sample in the same region under similar conditions. Dr. Simmons has written at least one medical administrator requesting that he develop "something". The approach of doing something for its own sake rather than for a legitimate purpose is worse than doing nothing and is regarded as such by overly busy people in the field.

6. Equipment

The dental equipment in Cameroon has been difficult. Dr. Stryker, in a letter of February 1976, stated that one compressor had not worked since the first volunteer departed, one of two air dryers has malfunctioned, one of two lights doesn't work, both cleaners are inoperable, an Adec ancillary unit leaks and the Mission air unit looses air through a cracked bowl. It was observed that all fiberglass shipping containers have lost their latches. Compressor and generator problems have been chronic. The equipment in Lesotho and Rwanda has faired much better, problems being limited to inade-

quate generators, noisy compressors and weak carrying cases. These units are of a more recent design and should be considered more seriously in the evaluation of reliability. In that sense they are satisfactory.

The dental equipment is portable in the sense that modifications do not have to be made to the room where it is set up. It is not portable in the sense that it can be efficiently transported from hospital to hospital or school or health center. The basic clinic equipment, like similar equipment on the market, is lightweight, compact and easily set up. Although transportable by air or surface roads, special padding and sealing would be necessary for it to withstand dusty, washboard roads for more than an occasional journey. The chair could be portable but so many spare parts and accessories are included in the container that the box handles much like a coffin. The compressor is compact and quite portable. However, a compressor that is compatible with high altitude may be bulkier.

The major paradox is in regard to the power supply. If all the remote locations had continuous inexpensive electrical power, all other problems could be overcome with few modifications. Electricity is not really available in rural Africa. Hospital generators are usually run only intermittently for scheduled surgery and during the early evening hours because of the high cost of fuel. The project either must pay for the fuel costs of large hospital generators or bring in a more modest generator. A generator large enough to power the dental equipment at high altitudes is not likely to be easily transported. Therefore, the DHI project is saddled to locations where it can buy power unless it would be willing to modify operating procedures and related equipment so that a large air supply is not required. Although alternative procedures may require no more time

than is now consumed with the transportation, adjustment and repair of sophisticated equipment, Dr. Simmons has apparently insisted that the one designed method be used. For example, hand scalers were not provided for the set-up to be used in the event the ultrasonic air driven scaler should become inoperable.

GENERAL OBSERVATIONS

Beyond the issues specifically addressed by AID, a few other findings merit mentioning.

There is a tremendous void in knowledge about oral health problems in Africa and the approaches possible for alleviating them consistent with the political, economic, cultural, environment and other health related factors that influence oral health programing. Subjectively, it is believed that dental caries is lower in Africa than in other parts of the world but that it is increasing. School dispensaries that saw one toothache in three years a decade ago now see one every two weeks. Current rural hospital outpatient load experience is that toothaches are the chief complaint in from 0.5 to 3.0 percent of all cases. Urban areas have more decay than rural areas, very likely related to diet composition. The more Western the diet, the more caries. In urban areas where there are few dentists, practice may approach being a pure extraction program. This type of practice tends to discourage dentists from establishing a practice which in turn magnifies the problem.

Periodontal disease, the other major cause for tooth mortality, probably has as high a prevalence as anywhere in the world. It begins at an early age, is chronic, progressive and irreversible. It can be prevented, retarded

and arrested largely by simple treatment and home care. It does not seem to be on the increase because it would be difficult to be worse than it is.

There are other lesions, malformations and conditions of the oral cavity but they are relatively insignificant from a proportion of population point of view, although they may be individually dramatic. Malocclusion rates seem to be especially low. Caries and periodontal disease probably should be the two oral diseases of concern at this time because together they are widespread and lead to a chronic level of infection that would be of alarming concern anywhere else in the body. They impair proper eating and draw upon the body energy reserves so that those persons with active disease are often distracted, lethargic and more susceptible to infectious diseases.

Among health concerns such as starvation, malnutrition, malaria, typhoid, venereal diseases, and a rash of similar life threatening and incapacitating problems, oral disease is indeed one of a low priority concern. However, no problem is a problem until recognized. A rational ranking of oral health among the full range of concerns for health is not possible without at least a minor attempt at data collecting and trial programs. It was gratifying to note that AID recognized this in their support of the DHI project. It also was gratifying to note at every Mission hospital visited, a sincere desire to continue an oral health program existed.

The population density in rural areas of Africa was impressive. Preventive type programs could have the potential for being more efficiently managed than is possible in the rural U.S. where groups are too scattered to justify a series of convenient treatment centers. However, at this time the relative immobility and very limited understanding of rural Africans about health and disease impair the rapid success of any program. Political

instability and a paucity of people capable in middle management are also major handicaps to the development of health programs. Although economically weaker, there appeared to be more potential for successful health programs in Lesotho and Rwanda than in Cameroon because the people seem to be better integrated socially and more animated and productively engaged in their daily endeavors.

There is a dentist from Belgium practicing in Kigali, Rwanda, supported by the Belgian government. There may be a dentist in Butare. The Kigali dentist knows of no plan for increasing Belgian support for dental care in Rwanda.

There are three dentists in Lesotho besides the expatriate working in the rural areas. One works for the government, one is in a semiprivate practice through a U.S. church and one is in private practice who is also a native Basotho. Another Basotho is in dental school abroad with support by the WHO. Two dentists in urban Cameroon are known to practice occasionally in the Northwest province. One is more highly regarded than the other.

A new dental school opened in Nairobi last year. There are 14 students. All staff positions in the school are listed as vacant. Politically founded, it appears that the school, the only one between Cairo, Egypt, and Johannesburg, South Africa, is in serious need of support. No other new dental schools are planned for Africa as best as could be determined. The East African Dental Society, Nairobi, the only society in central and Eastern Africa, is not strong in that its membership seems to be divided between Asian and European members, the latter which are currently boycotting the infrequent meetings. It is not likely that this Society is currently able to provide or influence leadership in the development of a rational

and modest oral health program in central Africa.

American dentists, whether they be volunteers of DHI, serving through a church Mission or independently in the continent, are held in high regard and are often preferred where choices between dentists are available. They do much to promote good will for the U.S. among the general population. This evaluator was very pleased that the U.S. was regarded so favorably in regions where hostilities, suspicions and impotent efforts seem commonplace.

An attempt was made to correlate the service provided with the sum of the costs by AID and Mission hospitals less project earnings since these are tangible services and expenses. It was found that this cannot be done until Dr. Simmons includes data on his own services in Rwanda, perhaps in the next reports required by AID. Cost ratios need to be determined for comparison to services later on, should the grant be extended, because well over 90% of volunteer and administrative support is directed toward the provision of clinical services.

It is of concern that neither DHI nor PHAL plan to develop a dental program in the less assessable mountain areas of Lesotho. The mountain people are more isolated, immobile and have fewer alternatives for health services than do the lowland people.

Persons interviewed willingly and very candidly provided any information requested except in two instances where intimidation was attempted. It was possible to determine many influences upon the project and interest in it. It is notable that, except for two instances, all information correlated and was entirely consistent. No one interviewed wished to have

dental services discontinued even though some had to provide considerable effort toward keeping it operating.

CONCLUSIONS

Dr. Barry Simmons, President and founder of DHI, is a highly capable promoter of oral health and of international development of oral health. He is personable, energetic and persuasive. He has a very sophisticated publicity system that is effective for introducing a new program. He is effective in recruiting dentists for volunteer services and selecting people of good character. On the other side, he has not demonstrated skills in administration, organization, community education, professional education, dental research and equipment engineering. Nor has he displayed sensitivity toward social and political conditions beyond his cultural environment.

Competent dental services are so rare in Africa that everyone in responsible positions are in favor of obtaining them in most any fashion that is not in conflict with social values and organizational philosophy. The DHI project has created considerable political and general public favor. It has not made substantative changes in oral health, nor would such a brief effort be expected to have such an impact. However, uniform support for the concept indicates that program modifications could lead to a long term effective result even though specific objectives were not initially achieved.

Uniform lines of communication and the presence of a strong in-country coordinating and decision making organization are essential to the survival of this or similar U.S. based PVO projects. The PHAL and BUFMAR organizations, in cooperation with their Ministeries of Health are logical and

essential focal points for rural programs such as the DHI project.

A four time a year service program at four rural hospitals is too frequent for the current level of demand for care. Twice a year at eight or once a year at sixteen locations would be more effective. A reliable advance schedule is imperative to a successful itinerant program.

It is not realistic to expect dental volunteers, who lack educational experience and guidance, to train dental aides for services other than chairside assisting and simple intraoral procedures. Nor is it reasonable to expect dental aides to continue intraoral and educational services after a dentist leaves even if dental equipment were to remain at each site.

A good opportunity is being overlooked in the DHI project for collecting data essential to rational dental problem definition and program development.

Neither Mission hospitals nor governments should be expected to provide other than "in kind" services in view of the great pressures on their very limited financial resources. Oral health resources may augment but should not be expected to replace current medical resources.

The DHI project is not capable of providing community development, staff education or research services. It is better suited as a demonstration project to define oral health needs to determine methods for dental service delivery and to elevate public recognition of oral health as a legitimate social concern.

The oral health level of African population is deteriorating and will continue to deteriorate in direct relationship to the urbanization and

westernization of these societies.

The dental service needs of rural populations probably differ from urban populations in the same countries. Therefore, the type of programs that may be directed toward rural and urban needs should be designed separately.

DHI equipment is suitable for itinerant use only if a power supply is already present at a site.

A preventive and educationally oriented program will not be economically self sufficient. A clinical service program involving itinerant dentists may become self-sufficient if well organized. Itinerant services are more costly than conventional fixed clinic services. However, the latter is not practical in rural regions.

RECOMMENDATIONS

Africa is a continent with few natural barriers and tremendously complex human interrelationships. The turmoil of competition for natural resources by political, tribal, linguistic, racial, cultural, religious and community factions, the rapidly expanding populations, inadequate communications, unreliable transportation, limited managerial depth and the large reservoir of disease, illiteracy and tradition all serve to awe and intimidate any attempt to organize services that might improve the general quality of life. Yet, the very systems that promote the quality of life also serve to stabilize social affairs, restore hope and bring reason and order to government. Oral health, in and of itself, is not a major concern in the affairs of Africa, nor should it ever be. However, poor oral health can be a major detractor

to the development of people for any other purpose. The prevention and removal of this barrier must be selective when the limitations of resources and the magnitude of population are considered. Therefore, it is recommended that programs for oral health in Africa be conservatively directed as follows:

1. Determine what are the real oral health problems.
2. Determine and apply inexpensive emergency, preventive and educational services among the population at large.
3. Develop comprehensive dental services for the people who are essential to the cohesiveness and advancement of basic social institutions and who provide primary national services.
4. Assist in the establishment and support of an educational base, a body of knowledge, that can modify and prosper as the conditions of each country permits.
5. Add oral health to health services in ways that broaden the lines of communication and understanding between the African nations and the U.S.

The DHI grant should be continued for five reasons: 1) It is an excellent demonstration project for determining rural oral health service methods. 2) It has the potential for providing data fundamental to the development of a rational oral health plan. 3) It is respected and appreciated by the governments who are unable to carry on an oral health program with National resources. 4) It provides, at low cost, an additional avenue of positive relationships between the governments of the host countries and the U.S. 5) It is highly visible among the rural communities and creates good will toward the United States.

The project should not be required to be economically self sufficient since that aspect would handicap achievement of objectives in prevention and education and in reaching the greatest possible rural population.

Service priority should be given to rural hospitals and clinics least accessable to urban centers.

Fundamental changes should be made in the DHI grant to improve its accountability and management processes.

1. Dr. Simmons should not serve as a volunteer. However, he should return to operating sites for evaluation and follow-up and to prepare new sites as appropriate within the scope of the project.
2. Specific project site selection and the timing of volunteer services should be determined within each country rather than by DHI. Appropriate terminations could be made by AID-Yaounde or its designee for Cameroon, PHAL for Lesotho and BUFMAR for Rwanda.
3. All volunteers, participating agencies and AID offices associated with the project should receive copies of the final grant agreement and supporting documents in advance of the fiscal year.
4. Only persons with a dental degree should be considered to be qualified to become a volunteer.
5. Equipment and supply stocks should include instruments that can be used in the absence of electrical power so that services may be extended into field clinics and schools most convenient to population groups and to permit services to continue during power failures.

6. A uniform patient record and a reporting form and the instructions for their use should be developed and inaugurated at the beginning of the next grant year.
7. Uniform records should be kept at each hospital and include the patients name, age, sex, race, services required, date that services were provided, specific services provided and fees paid.
8. Nominal fees should continue to be charged for clinical services consistent with government and hospital policies. ~~Patients should receive a receipt for payment~~.
9. Receipt and dispersement accounts and services required and provided should be reported to AID-Washington at least quarterly.
10. The grant should provide funds to cover the cost of:
    a. Volunteer travel within country. This may require vehicle purchase or lease costs.
    b. Administration of the project by each in-country administrative unit.
    c. Evaluating and organizing project sites by Dr. Simmons.
    d. Equipment that is not readily transportable e.g., generators and compressors for each site where not already available.
    e. Field clinic equipment sufficient to support the maximum number of volunteers who would be in the field at one time.

Dental aides should not be utilized for dental services other than chairside assisting unless they have had organized educational experiences where educational objectives were evaluated. Priorities for education should be: Local anesthesia technique, extraction technique, treatment of dental emergencies, oral hygiene instruction, diet control, chairside assisting, dental prophylaxis technique, dental equipment maintenance and dental office management.

Intraoral services such as fixed and removable prosthodontics, periodontal surgery, orthodontics and other advanced restorative and rehabilitative services should not be taught.

The education of dental aides in rural areas should not be attempted by volunteers until adequate curricula and supporting educational resources have been developed.

Volunteers must be oriented to such material before attempting to participate in a training program.

Dental equipment should be housed in sturdier shipping containers. Several smaller boxes are more manageable than fewer large boxes.

The DHI project should not include a research component, a community education component or a dental aid education component unless competent technical assistance and support can be provided.

It is recommended that AID-Washington develop, with professional consultation, a priority, strategy and funding limit for oral health development in Africa that includes:

1. An assessment of the impact of an oral health program on U.S. foreign relations.
2. A policy of maximum self determination by each African government and utilization of National educational resources.
3. A plan for the development of resources and materials suitable for a) advancing community education and responsibility in oral health, b) patient education materials and techniques suitable for medical and general health staff use, c) methods for incorporating oral health education into existing and planned general health programs, d) train-

ing African paraprofessionals in training centers and/or in the field and e) developing in-country dental health personnel sufficient to become self perpetuating according to National needs.

Appendix I

Persons Interviewed

Persons Interviewed in regard to the DHI Contract

Georgia

Barry Simmons, D.D.S.	President, DHI	Athens
Pam Stockton	Administrative Assistant DHI	Athens
Lenore Young	Secretary (part time) DHI	Athens
Noel Griese	Public Relations, DHI	Athens
Kathryn Poleson, D.D.S.	DHI Volunteer	Augusta

Cameroon

Michael Chizick	Vice Council, U.S. Consulate	Douala
Thomas Kelly	Program Director, Catholic Relief Svcs.	Victoria
Wilma Binder, R.N.	Victoria Baptist College	Victoria
H. H. Zorn, M.D.	Director, Swiss Presbyterian Hospital	Achi Tugi
Hans Eidenbenz, M.D.	Staff doctor, S. P. Hosp.	Achi Tugi
Mary Louise Rieger, R.N.	Director of Nurses	Achi Tugi
John Bahamboh	Dental aid and hosp. staff	Achi Tugi
Elias Fai	Dental aid and hosp. staff	Achi Tugi
Mrs. Minerts	Wife of Field Secretary, No. Am. Baptist Mission Society, Inc., N kiven	Bamenda
Jerry Fluth, M.D.	Director, Baptist Mission Hospital	Mbingo
Edward Hoepner	Administrative Officer, Baptist M.H.	Mbingo
Samuel Nchifor	Dental aid and hosp. staff	Mbingo
Dieter Lemkie, M.D.	Director, Banso Baptist Mission Hosp.	Kumbo
Helen Marie Schmidt, M.D.	Staff doctor, Banso Baptist M.H.	Kumbo
Issak Lontum, R.N.	Dental aid and hosp. staff	Kumbo
Phillip Nfon	Dental aid and hosp. staff	Kumbo
Emanuel Nzderem	Dental cleanup and hosp. staff	Kumbo
Joseph Fofe, D.D.S.	Chief Dental Officer for Cameroon	Yaounde
Albert Henn,M.D.	Chief of Health, Nutrition & Population Programs, AID	Yaounde
John Koehring	Regional Director, AID	Yaounde
Felix Awantang	U.S. AID, Cameroon	Yaounde
Victor Anonah Ngu, M.D.	Vice Chancellor, CUSS	Yaounde

Lesotho

Harry Johnson	US AID, U.S. Consulate	Maseru
Donald Haught	Chief Council, U.S. Consulate	Maseru
Alan Foose	Executive Secretary PHAL	Maseru
Wendell Evans, D.D.S.	Volunteer dentist PHAL	Maseru
LM. Tuelejane, D.D.S.	Private dentist	Maseru
Wiley N. Young, D.M.D.	Private dentist	Maseru

Persons Interviewed (continued)

Lesotho

Sidney Levy, D.D.S.	GOL dental officer Q E II Hosp.	Maseru
Patrick ' Mota	Minister of Health GOL	Maseru
J. L. Molapo, M.D.	Permanent Secretary of Health GOL	Maseru
S. G. Mohale, M.D.	Sr. Medical Officer of Health GOL	Maseru
Rein Verhage, M.D.	Director Scott Hospital	Morija
Solomon Nisihlele	Dental aid and Hosp. staff	Morija
Thabo Makhoaninyane	Dental aid and Hosp. staff	Morija
Wilbur Hurlow, M.D.	Director, Maluti Hospital	Mapoteng
George Ruflin, M.D.	Director, Paray Hospital	Theba Tseka
Ms. Rieder, M.D.	Director, St. Joseph Hospital	Roma
Sister Rose Fitzgerald	DHI local coordinator, Hosp. staff	Roma

East Africa

Wayne King	US AID Regional Officer	Nairobi
Earl Richards, D.D.S.	Private practitioner (7th day A.)	Nairobi

Rwanda

Robert Fritz	Ambassador, U.S. Embassy	Kigali
Peter Higgins	Deputy Chief of Mission, U.S. Embassy	Kigali
Ildephons Musafili, M.D.	Minister of Health, GOR	Kigali
Donald Titus, D.D.S.	Volunteer Dentist, DHI	U.S.A.
Labron, D.D.S.	Belgian dentist, GOR Hosp.	Kigali
Robert Burke	Administrative Ofcr. Catholic Relief Serv.	Kigali
Mel Adams	Director, Catholic Relief Service	Kigali
Wilhelm Pijnappel	Administrative Ofcr. BUFMAR	Kigali
Marie Pierre Goudman, M.D.	Director, Mibirizi Hosp.	Cyangugu
Sister Benedictine	Ex-dental aid and Hosp. staff	Cyangugu
Sister Annunciata, R.N.	Dental aid and Hosp. staff	Cyangugu
Charles Rwamukwaya	Dental aid and Hosp. staff	Cyangugu
David Crandall, M.D.	Acting Director, Kibagora Hosp.	Kibagora
Mrs. Cobb, R.N.	Hosp. staff, Kibagora Hosp.	Kibagora
Christopher Keroli	Dental aid and Hosp. staff	Kibagora
John Hitimana	Dental aid and Hosp. staff	Kibagora
Bradley Nelson, M.D.	Acting Director, Mugonero Hosp.	Kibuye
Benito Artal	Administrative Ofcr., Mugonero Hosp.	Kibuye
Isriël Kanyabukamba	Dental aid and Hosp. staff	Kibuye
Emilitle Mukarukaka	Dental aid and Hosp. staff	Kibuye

Appendix II

Resource Materials

RESOURCE MATERIALS

Area Handbook for the United Republic of Cameroon; Harold D. Nelson, et al.; U.S. Govt. Printing Office, 1974

Area Handbook for the Republic of South Africa, Irving Kaplan, et al.; U.S. Govt. Printing Office, 1971

Area Handbook for Rwanda; Richard Nyrop, et al.; U.S. Govt. Printing Office, Nov. 1969

Background Notes, Cameroon, Dept. of State, Dec. 1973

Background Notes, Lesotho, Dept. of State, Jan. 1975

Background Notes, Rwanda, Dept. of State, July 1975

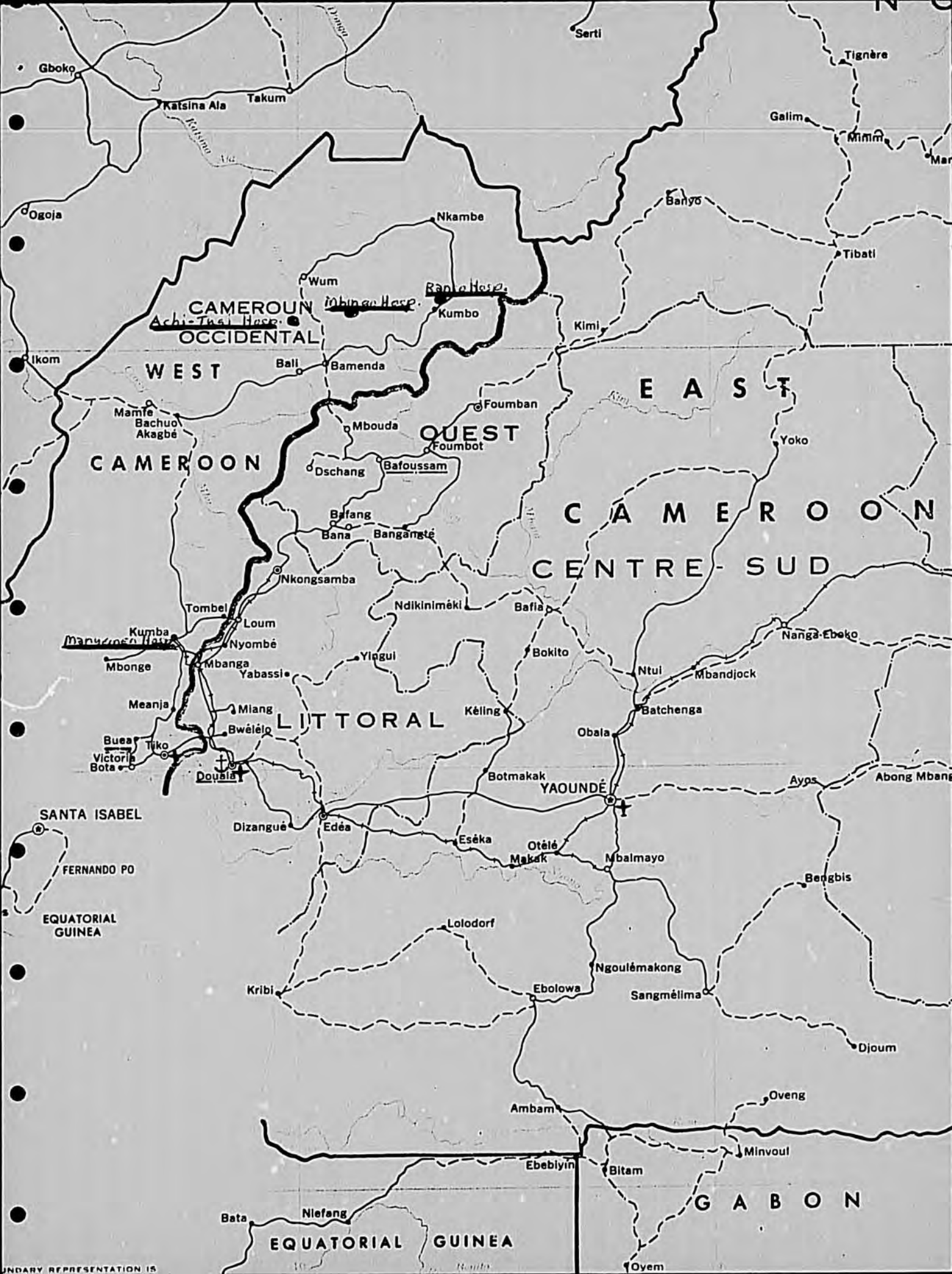
Dental Health and the Development of Health Services in Africa; E. M. Brown, D.D.S.; WHO Regional Committee For Africa; A presentation before the 25th session, Yaounde, Cameroon, 17-24 Sept. 1975.

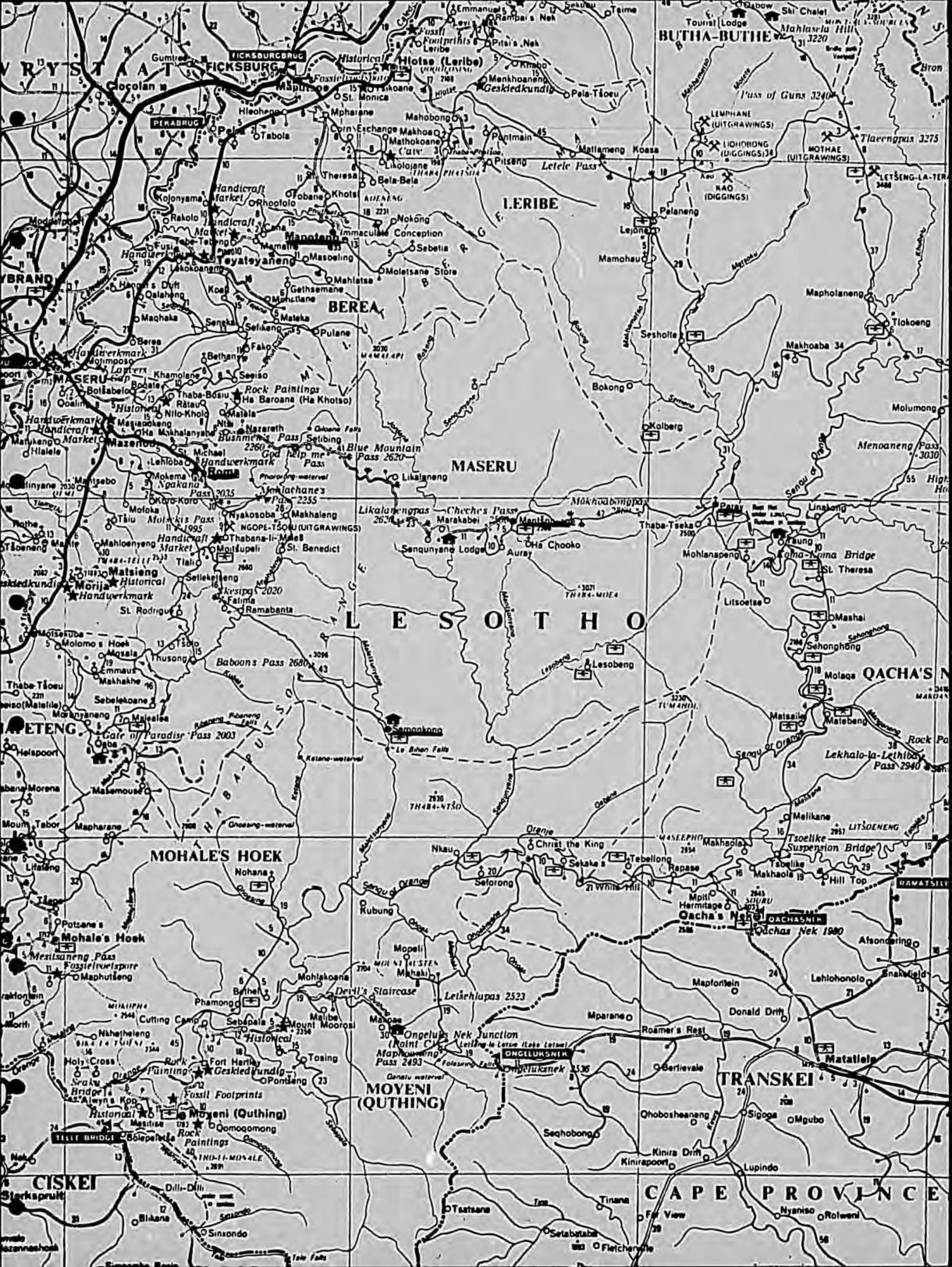
Special Report: Poor vs. Rich: A New Global Conflict; Time Magazine, Dec. 22, 1975 pgs. 32-42

Syncrisis: The Dynamics of Health, XIII Botswana, Lesotho and Swaziland; Nancy R. Pielemeier, MHS; Office of International Health, Div. of Program Analysis, USDHEW, May 1975

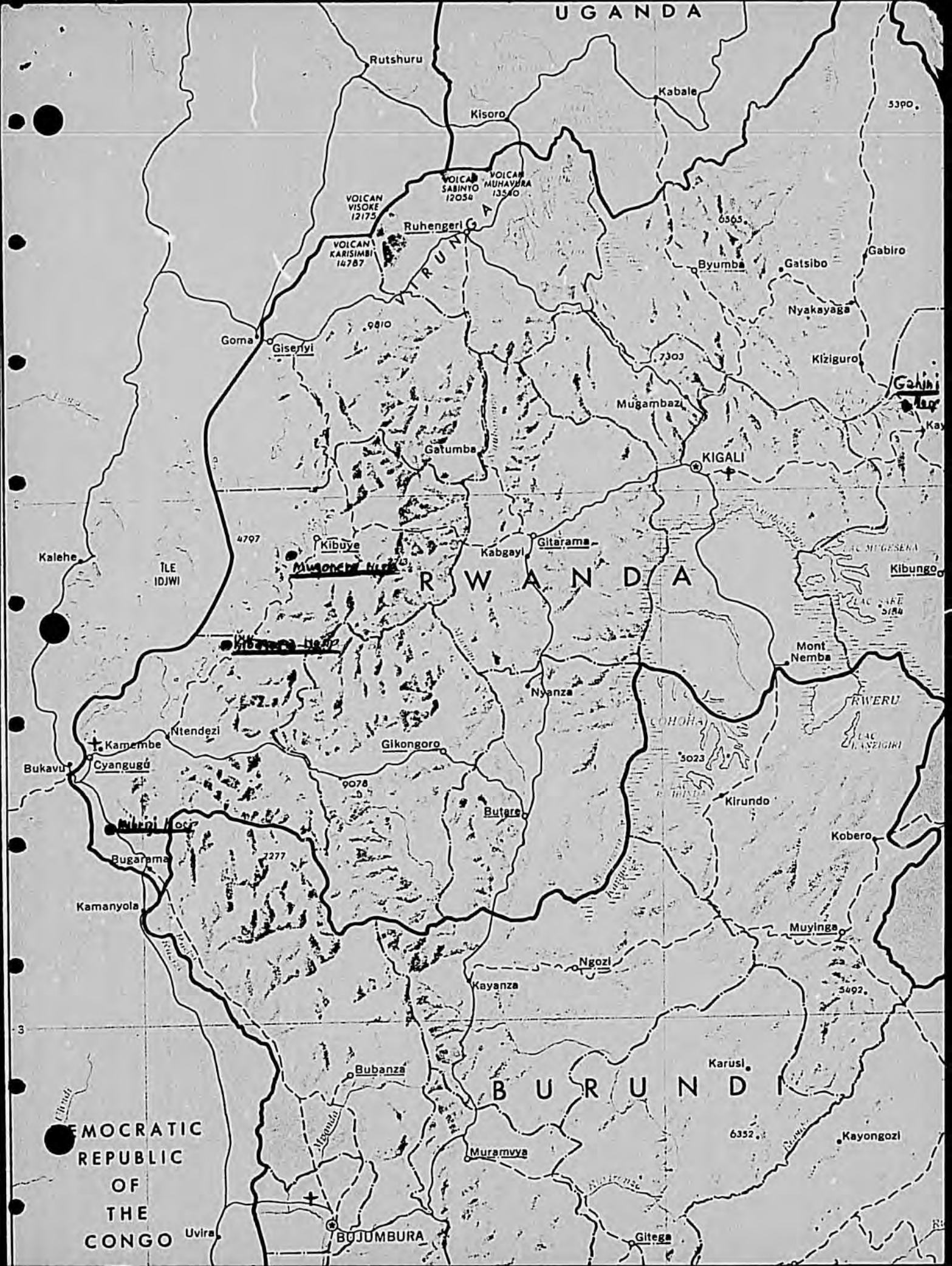
Appendix III

Maps showing DHI activity sites


Serti
Tignère
Gboko
Katsina Ala
Takum
Galim
Mmm
Banyo
Ogoja
Nkambe
Tibati
Wum
CAMEROUN
OCCIDENTAL
Kumbo
Kimi
Ikom
WEST
Bali
Bamenda
EAST
Foumban
Mamfe
Bachuo
Akagbé
Mbouda
OUEST
Foumbot
Yoko
CAMEROON
Dschang
Bafoussam
Bafang
Bana
Bangangté
CAMEROON
CENTRE-SUD
Nkongsamba
Tombel
Loum
Ndikiniméki
Bafia
Kumba
Nyombé
Nanga-Eboko
Mbonge
Mbanga
Yingui
Bokito
Yabassi
Ntui
Mbandjock
Meanja
Miang
Kéling
Batchenga
LITTORAL
Bwéléo
Obala
Buea
Tiko
Victoria
Bota
Douala
Botmakak
YAOUNDÉ
Ayos
Abong Mbang
SANTA ISABEL
Dizangué
Edéa
Eséka
Otélé
Makak
Mbalmayo
FERNANDO PO
Bengbis
EQUATORIAL GUINEA
Lolodorf
Ngoulémakong
Kribi
Ebolowa
Sangmélima
Djoum
Oveng
Ambam
Minvoul
Ebebiyin
Bitam
GABON
Bata
Niefang
EQUATORIAL GUINEA
Oyem



VRYSTAAT
FICKSBURGBRUG
FICKSBURG
Clocolan
PEKABRUG
BUTHA-BUTHE
Ski Chalet
Tourist Lodge
Mahlasela Hill 3220
Pass of Guns 3240
LEMPHANE (UITGRAWINGS)
LIQHOBONG (DIGGINGS)
MOTHAE (UITGRAWINGS)
Tlaeengpas 3275
LETŠENG-LA-TERAE
KAO (DIGGINGS)
Letele Pass
Hlotse (Leribe)
Fossil Footprints
Historical
Geskiedkundig
Pela-Tšoeu
Mapholaneng
Tlokoeng
Makhoaba
Molumong
Menoaneng Pass 3030
LERIBE
BEREA
MASERU
Maseru
Handwerkmark
Handicraft Market
Teyateyaneng
Rock Paintings
Ha Baroana (Ha Khotso)
Thaba-Bosiu
Bushmen's Pass 2260
God help me Pass
Blue Mountain Pass 2620
Roma
Ngakana Pass 2035
Molikaliko
Moitšupeli
NGOPE-TŠOEU (UITGRAWINGS)
Thabana-li-Mele
Likalanengpas 2620
Cheches Pass
Mokhoabongpas
Marakabei
Senqunyane Lodge
Ha Chooko
Thaba-Tseka
Paray
Mohlanapeng
Koma-Koma Bridge
St. Theresa
Matsieng
Morija
Kesipa 2020
Ramabanta
L E S O T H O
Mashai
Sehonghong
Molaoa
QACHA'S NEK
Lesobeng
Baboons Pass 2680
Semonkong
Le Bihan Falls
Ketane-waterval
Gate of Paradise Pass 2003
Thaba-Putsoa Range
MAFETENG
Helspoort
Masemouse
Mount Tabor
Mapharane
Qhoasing-waterval
MOHALE'S HOEK
Mohale's Hoek
Mesitsaneng Pass
Fossielvoetspore
Maphutseng
Nohana
Kubung
Mopeli
Mount Austen
Mahaki
Christ the King
Sekake's
Tebellong
Rapase
White Hill
Seforong
Matsaile
Matebeng
Rock Pass
Lekhalo-la-Lethiba Pass 2940
Malikane
Tsoelike Suspension Bridge
Makhaola
Hill Top
RAMATSELISO
Mphaki
Moiti Hermitage
Qacha's Nek
QACHASNEK
Qachas Nek 1980
Afsondering
Lehlohonolo
Snakefield
Mapfontein
Donald Drift
Mparane
Roamer's Rest
Mohlakoana
Devil's Staircase
Letšehlupas 2523
Bethel
Phamong
Cutting Camp
Sebapala
Mount Moorosi
Historical
Tosing
Malibe
Ongeluks Nek Junction
Maphoaneng Pass 2493
ONGELUKSNEK
Ongeluksnek 2536
Bertievale
Matatiele
TRANSKEI
Holy Cross
Snake Bridge
Alwyn's Kop
Fort Hartley
Rock Painting
Geskiedkundig
Fossil Footprints
Historical
Moyeni (Quthing)
Qomoqomong
Rock Paintings
MOYENI (QUTHING)
Sigoga
Mgubo
Qhobosheaneng
Seqhobong
Kinira Drift
Kinirapoort
Lupindo
TELLE BRIDGE
CISKEI
Sterkspruit
Dilli-Dilli
Sinsondo
Tsatsane
Tinana
Fair View
Setabataba
Fletcherville
Nyaniso
Rolweni
CAPE PROVINCE


UGANDA
Rutshuru
Kabale
Kisoro
VOLCAN SABINYO 12054
VOLCAN MUHAVURA 13540
VOLCAN VISOKE 12175
VOLCAN KARISIMBI 14787
Ruhengeri
VIRUNGA
Byumba
Gatsibo
Gabiro
Nyakayaga
Kiziguro
Gahini
Gorna
Gisenyi
Mugambazi
Gatumba
KIGALI
Kibuye
Kabgayi
Gitarama
Kalehe
ILE IDJWI
RWANDA
Kibungo
Mont Nemba
Nyanza
Ntendezi
Kamembe
Cyangugú
Bukavu
Gikongoro
Butare
Kirundo
Kobero
Bugarama
Kamanyola
Muyinga
Ngozi
Kayanza
Bubanza
Karusi
BURUNDI
Kayongozi
Muramvya
BUJUMBURA
Uvira
Gitega
EMOCRATIC REPUBLIC OF THE CONGO

Appendix IV

Agency for International Development

Grant No. AID/afr-G-1163

DEPARTMENT OF STATE
AGENCY FOR INTERNATIONAL DEVELOPMENT
WASHINGTON, D.C. 20523

June 27, 1975

Dr. Barry Simmons
Dental Health International, Inc.
825 S. Melledge Ave.
Athens, Ga. 30601

Subject: Grant No. AID/afr-G-1163
PIO/T No. 698-386-3-615-7105

Dear Dr. Simmons:

Pursuant to the authority contained in the Foreign Assistance Act of 1961, as amended, the Agency for International Development (hereinafter referred to as "A.I.D." or "Grantor") hereby grants to Dental Health International, Inc. (hereinafter referred to as "DHI" or "Grantee") the sum of $84,000 to support a program for dental health activities in the Cameroons, Lesotho and Rwanda as more fully described in the attachment to this Grant entitled "Program Description".

This Grant is effective and obligation is made as of the date of this letter and shall apply to commitments made by the Grantee in furtherance of program objectives during the period set forth in Attachment A.

This Grant is made to DHI, Inc., on condition that the funds will be administered in accordance with the terms and conditions as set forth in Attachment A entitled "Program Description", and Attachment B entitled "Standard Provisions", which have been agreed to by your organization.

Please sign the Statement of Assurance of Compliance, enclosed herein, and the original and seven (7) copies of this letter to acknowledge your acceptance of the conditions under which these funds have been granted.

Please return the Statement of Assurance of Compliance and the original and six (6) copies of this Grant to the Office of Contract Management.

Sincerely yours,

R. L. Carroll
Grant Officer
Regional Operations Division,
Office of Contract Management

Attachments:

A. Program Description including DHI Financial Plan (Illustrative) dated 6/26/75
B. Standard Provisions
C. Payment Provisions
D. Assurance of Compliance

ACCEPTED:

DENTAL HEALTH INTERNATIONAL, INC.

BY Barry D. Simmons DDS PC

TYPED NAME Barry D. Simmons, D.D.S., P.C.

TITLE President

DATE 6-27-75

Accounting and Appropriation Data

Appropriation No. 72-11X1024
Allotment No. 424-61-698-00-69-51

Program Description

I. Scope of Technical Services

A. Objective

To provide improved dental hygiene and care to rural populations of the Cameroon, Lesotho, and Rwanda.

Subject to the prior specific written approval of the Project Officer and within limitations for the fund, grantee may initiate a similar program in an alternate African country.

B. General Description

The grantee will exert his best efforts to provide the following services:

(1) Dental health care services,

(2) Dental health education, and

3) Training of medical (health) and para-professional personnel.

C. Specific Description

(1) Organization and Equipment - In addition to the one portable dental unit located in Lesotho, Dental Health International will procure two portable dental units — one each for Cameroon and Rwanda. A back-up unit consisting of similar components may be procured for each of these units and the unit presently in Lesotho, if grantee in his discretion and within limits of funds made available, considers such essential to maintain required continuity in the program.

Title to the portable equipment, accessories and associated supplies purchased under this grant shall be held by DHI. DHI in turn shall lend these to either the appropriate hospital administration at each location where it is to be used or the missionary units involved. Terms of such loan shall provide for its maintenance and operation as appropriate, plus a financing arrangement whereunder funds from their use shall be returned to DHI. DHI shall use such funds for purchase of such

additional equipment, its repair and/or dental supplies as DHI considers necessary to further the targets of this project, subject to deductions for salaries and for local technicians using equipment and other logistical support for future dental volunteers (e.g. local transportation).

DHI policy is that volunteer dentists shall carry their own hand instruments; dentists also shall acquire expendable dental material at no cost to this grant whenever possible. If volunteer dentists or dental students are unable to acquire expendable dental materiel and/or dental hand instruments at their own expense, this grant will be used to supply such dental hand instruments and/or expendable supplies.

It is agreed that a full time administrative assistant and added clerical help may be required to facilitate the purposes of this grant. Grantee is authorized to employ same within the funding limitations of this grant.

antee shall procure desk, office equipment, including typewriters, adding machines, file cabinets, etc. for its U.S. offices through AID surplus property offices, GSA or on the local market as appropriate.

Expendable dental supplies is defined as supplies having a use expectancy not ordinarily exceeding 6 months, i.e. dental filling material, burs, disposable needles, local anesthetic, etc. DHI policy is that these should be acquired at no cost to this grant whenever possible.

U.S. Government furnished excess property may be acquired by grantee for this project, the handling and shipping costs for which may be incurred in lieu of other line items of costs in the budget.

In-country transportation, accommodations, food and various supplies and materials ch as gauze sponges and mayo stands will be provided to the volunteer dentists by the private hospitals listed herein, i.e. through funds made available through means

ther than the grant. All medicines needed for treatment of dental patients will be purchased from the missionary or private hospital by the patient.

(2) Modus operandi - The services set forth herein will permit DHI to provide dental care for persons living in selected remote, rural areas.

DHI shall recruit U.S. volunteer dentists, and U.S. volunteer senior dental students to each country for minimum tours of 8 weeks. Such dentists or dental students shall work with the portable dental units for citizens living in the service area of the dental clinic. Special attention will be given to children, to women suffering from dental problems resulting from hormonal changes during pregnancy and to leprosy patients.

Dental health care will include as a minimum those curative aspects of care involving minor oral surgery (those procedures which the dentist feels well qualified to perform), the treatment of dental caries and dental hygiene. Orthodontic and prosthetic work shall not be undertaken under the terms of this grant.

Dental care will be rendered from selected mission hospitals and in surrounding remote villages

Dental health education shall include but not be limited to preventive instruction services to patients characterized by: (a) dental hygiene, (b) nutrition education; and (c) fluoride treatment for patients orally and/or through water sources. Dental health education shall consist of oral intruction to the patient on dental care while being treated and dental hygiene lessons in surrounding schools to teachers and pupils.

Training will be provided in dental health care and dental health education to members of local hospital staffs. In addition, two trainees will be selected from among the para-professional personnel already assigned to local hospitals and trained to

operate the portable equipment and provide and teach dental hygiene based on criteria established between the grantee and the local authorities. The grantee ill provide the above services based on the following implementation plan:

Training of para-professional shall be accomplished as aforesaid. This shall be designed so as to institutionalize the function at such location so that service may continue in the temporary absence of the U.S. volunteer or on an on-going basis at the expiration of this program.

Research and Development funds are included in this grant for the acquisition of equipment designed to facilitate the target of this grant in a more expeditious manner. DHI shall coordinate any such expenditure with the Surgeon General of the United States or his designee.

D. Reports

(1) The grantee will submit semi-annual reports in 20 copies on progress towards the stated objective described above. This will include:

a) Progress toward training of local para-professionals;

(b) Institutionalization of dental health care within participating hospitals' public health framework;

(c) Capability to procure, operate and maintain portable dental equipment and related items;

(d) Listing of disbursements of funds which are provided under this grant and the amount of local funds generated for support of the program. The first report will be due in AFR/RA, AID/W within 8 months.

(e) Progress on research related to improved dental practices and equipment in rural areas.

By January 1976, or as soon as practicable thereafter, grantee shall submit its proposal including a budget for its Fiscal year 77 program.

At the end of the first year of activity an evaluation will be made by AID to determine whether a second year of funding will be made available.

(2) At the termination of this project the grantee will submit a final report concerning the above sub-sections and also enumerating problems encountered during the course of the grant and recommendations for the solution in future grants of similar nature.

On June 30, 1976, at the conclusion of A.I.D. support, it is targeted that the grantee will have accomplished the following:

(a) Provided a basis for ongoing dental care, as follows:

Cameroon:

Mbingo Baptist Hospital in Bamenda; Banso Hospital in Nso; Acha-Tugi Swiss Presbyterian Mission near Kumba; and the Manyemen Leprosy Hospital in the Douala area (dependent upon paradental personnel recruitment from this hospital--there is current staff shortage here).

Lesotho:

Scott Hospital in Morija; Maluti Hospital in Mapoteng; St. James Mission (Anglican) in Mantsonyane; and the St. Joseph Hospital in the Roma area.

Rwanda:

Kibagora Hospital in Cyangugu; Kirinda Hospital; Mugonero Hospital in Kibuye, and Gahini Hospital.

(b) Trained up to eight local para-professionals in each country;

(c) Provided a portable dental unit* for Cameroons and Rwanda and expendable supplies for Lesotho.

(d) Established a fund as outlined in program description Article I.C.(1) from local patient fees.

*Portable dental unit shall be provided at each location at the discretion of the grantee. Alternate hospitals may be selected by the grantee.

E. Funding and operations

1. The amount of $84,000 is obligated hereunder by AID. This is for a one year period from the date on the cover page hereof until June 30, 1976. The grantee may not exceed the total amount obligated. Adjustments among the line items in the budget are unrestricted.

Additional non-cash in-kind contributions representing the targeted value of voluntary services in the total estimated amount of $219,758 for the same one year period are to be provided by other sources external to AID.

Funding estimates and the amounts obligated herein are based on the budget included herein.

Grantee shall purchase such insurance as the Defense Base Act requires.

Grantee agrees to establish written fiscal, administrative and personnel policies and practices when the size of DHI's organization would render same practicable and when the Grant Officer reasonably requires same.

Grantee's recruiting personnel at overseas locations shall be reimbursed per diem at rates established by the U.S.G. TRS in effect at time of such visit.

The volunteers are not authorized to hire local personnel for purposes other than as stipulated in the attached illustrative Financial Plan.

Modifications to OPTIONAL PROVISION, Attachment B, Specific Support 10.15.75:

Prov 1. Travel and transportation (Oct. 1974), 5th and 6th line. Delete "at least thirty (30) days". Substitute "as soon as possible."

Prov 2. Negotiated Overhead Rates (Oct. 1974). Delete.

Prov 3. Procurement of Equipment, Vehicles, supplies and services (Oct. 74), clause 6, second line after "hereunder" add "except for research and development."

DENTAL HEALTH INTERNATIONAL, INC.

NANCIAL PLAN (Illustrative)

	1ST Year Operating Budget	
	External Support (DHI)	A.I.D. Support
Personnel Costs		
A. U.S. Personnel-subsistence furnished by private hospitals	$ 4,086	
1) U.S. Volunteer Dentists $200 x 6 days = $1200 wk x 4 wks = $4800/mo. x 36 mos. maximum	158,400	
2) Project Director (averages 21 hrs/wk x $60/hr x 4 wk/mo x 9 mos. =	45,360	
B. Third Country Personnel		
C. Local Personnel		
1) Indigenous hygienist-trainees 2 at each hospital for 3 mos. periods @ $4.00 day each	6,912	
2) Other personnel: hospital administrators, custodians, transport personnel, etc.	5,000	
Training Costs		
A. Training in U.S.A. - 12 persons @ $213 each (maximum): dentists and dental students		$ 2,560
1) Telephone: $163 mo ($1960)		
2 Instruction books ($600): A step-by-step guideline for the volunteer from U.S.A. to host country to U.S.A.		
B. Training in Third Countries		
C. Local Training (included in C1 costs above)		

	External Support	A.I.D. Support
mmodity Costs		
A. U.S. Procured (as of September 1974)		
1) Portable Dental Clinic (including expendable supplies)		
a. Cameroon	$ 7,500	
b. Lesotho	1,800	
c. Rwanda	7,500	
2) Photographic supplies: film for documentation	250	
B. Third Country Procured		
C. Locally Procured: equipment repair, office supplies	1,000	
Other Costs		
A. Administrative costs for DHI Headquarters		
1) Administrative Assistant/Secretary 4 hrs/day x $3.75 x 5 days x 12 mos.	3,900	
Social Security	273	
2) Accounting	500	
3) Legal Fees	1,000	
4) Office operating costs		
a. Stationery	150	
b. Xerox rental (1)	540	
c. Xerox paper	400	
d. Postage	400	
e. Publicity material	500	
f. Telephone		
(1) Local	384	
(2) Long Distance	1,800	
(3) Codo Phone	325	

	External Support	A.I.D. Support
(4) Cablegrams - 20 cables x 4 qtrs. x 3 countries x $12/cablegram	$	2,880
5) Travel costs within U.S.A. for recruiting at dental Schools and dental associations		1,200
6) Translation - $5.00/page x 20 pp. x 3 countries		300
B. Insurance - Equipment damage/loss		225
C. Transportation costs to and from host country		
1) Four airfares to Rwanda @ $1691 each		6,764
2) Four airfares to Cameroon @ 1692 each		6,768
3) Four airfares to Lesotho @ $1941 each		7,764
D. Transportation of volunteers' expendable dental supplies, approximately 100 lbs. (46 kg.) Original equipment - 500 lbs. (230 kg.)		
1) Excess baggage: Cameroon @ 12.19/kg (4 Persons)		2,243
Original equipment (1st quarter)		2,804
2) Excess Baggage: Rwanda @ 12.00/kg (4 persons)		2,208
Original equipment (1st quarter)		2,760
3) Excess baggage: Lesotho vi Johannesburg		
Johannesburg to Maseru @ $14.00/kg (4 persons)		2,576
Expendables may weigh more therefore 23 k.g.		1,288
F. Other support costs		
1) Equipment research and development for future projects		10,000
2) Miscellaneous		
a. Passport, visa charges (12) @ $30 each		360
b. Immunization charges: gratis through public health service-5 shots @ $10/man = $50 x 12		600

	External Support	A.I.D. Support
t. Misc. unplanned expenses (e.g., transport of equipment if major repairs needed, purchase of replacement equipment)		$ 2,478
TOTAL COST	$219,758	$ 84,000

Appendix V

Scope of Work for Evaluation of Dental Health International (DHI)

SCOPE OF WORK FOR EVALUATION OF DENTAL HEALTH

INTERNATIONAL (DHI)

The objective of this evaluation is to assist in evaluating the status of achievement of providing immediate and continuous dental hygiene and care to rural populations of the Cameroons, Lesotho and Rwanda.

The evaluation team, consisting of a dentist and an A.I.D. direct-hire employee, will evaluate the activities of Dental Health International (DHI) from the date of execution of the Grant Agreement, July 27, 1975 to the present. The operational program grant (OPG) document and the Grant Agreement will offer guidance for evaluation when not specifically covered in this scope of work. The evaluation will be conducted in Africa and Athens, Georgia.

The team should focus on the areas outlined below; however, the team is not limited to these areas if additional relevant issues are identified.

(1) <u>DHI Administration</u>

The team will review the adequacy, quality, and performance of the DHI

staff in executing the following functions:

(a) Providing A.I.D. with a semi-annual report as required under the Grant Agreement.

(b) Conducting pre-project planning including arranging for agreements with host governments concerning approval of new project sites, providing for duty free entry of equipment, negotiating fee schedules for treatment, arranging for training of para-professionals, seeking approval of in-country travel, and coordinating with the host governments hygiene education programs for schools. (This data can provide an indication as to the degree of government support and commitment.)

(c) Timely procurement, shipment, and delivery of equipment, commodities, and spare parts as related to project start-up requirements in Africa.

(d) Timely recruitment, screening, selection and placement of volunteer dentists in-country. The Operating Program Grant (OPG) proposal states that one volunteer will be in place every three months in each country--total of 12 per year.

(e) Training and briefing of volunteers before departure to Africa. (Examine the adequacy of training to determine if volunteers were sufficiently briefed on handling their own travel and administrative arrangements. The team should determine if US AID Mission assistance to volunteers was required, and if so to what extent.)

(f) Backstopping of the volunteers after arrival in country. (Information from volunteers concerning their expectations and actual duties should be sought.)

(2) <u>Local Hospital Administration</u>

(a) Completion of a major portion of project outputs is dependent upon the administration of the project by local hospital staff. The team should examine the quantity and quality of the contribution of the hospital staff to the dental project.

(b) Para-professional trainees are drawn from the staff of the hospitals and devote a portion of work to the dental project. The team should examine the amount of time trainees are devoting to the dental project and seek to identify any conflicts between hospital duties and the dental care program.

(c) One of the assumptions under the project is that local hospital staffs are capable of maintaining and servicing dental equipment and that the dental fund could and would be administered by the hospitals. The team should examine this assumption.

(3) DHI and Local Hospital Training

Both DHI and local hospitals are in part responsible for para-professional training. There are 11 hospitals[17] which DHI has proposed to train two para-professionals each during the first year. The team should examine the training program for these individuals. The following issues should be covered:

(a) Number of trainees per country (2 per hospital were planned);

(b) The continuity of quality of the training. (This area is linked to the continuous presence of a volunteer dentist.);

(c) The dental care services trainees are competent to perform, and whether training is primarily preventive or curative; and

(d) The retention rate (a high retention rate was expected).

(4) US AID and DHI Relations

The team will examine DHI and US AID relations to determine the level of assistance required by DHI in administration of the program and obtain Mission opinion as to the appropriateness of the level of assistance required by DHI for this PVO activity. Also, the team should seek from Missions an overall evaluation of the success and effectiveness of DHI programs, both from the standpoint of the dental services provided and project administration.

(5) Target Group Response and Project Goals and Purposes

(a) The OPG stated the target group was rural populations with emphasis on women, children and leprosy patients. The evaluation report should include a map showing approximate areas of activity and Mission hospital locations for each of the three countries. The evaluation should include:

(i) Whether target groups are being reached and the level of awareness as to the availability of the dental services offered under the project. An

estimate of the number and sex and age of people using the facilities should be included. Accessibility of services should be examined. Any referral system used should also be examined.

(ii) Whether field work in dental hygiene education is being performed; and

(iii) Whether any overall improvement in physical health is observable and spread effect through the dental hygiene education program should be evaluated. To be included are estimates of number and frequency of visits to schools; and

(iv) A statement as to the quality and comprehensiveness of care. (Any information on medical techniques used, and medical complications should also be included.)

(b) Linked to the ability to reach the target groups is the issue of patient fees. The team should determine if patients were capable of paying such fees and if care was denied due to an inability to pay fees. Accounting procedures for receipt of these fees, as well as how funds were utilized, should be examined.

(c) An assumption of this project was that it would become self-sustaining through the dental fees and maintenance of the dental fund. It was further assumed that the fund would be sufficient to pay trainees salaries, maintain equipment, meet the transportation costs for trainees and volunteers, pay for the dental unit, and purchase additional units. The team will examine these assumptions to determine whether sufficient funds are being generated to cover these expenses. It will further study the possibility of purchasing additional units (the stated goal was placement of one unit for two hospitals).

(d) The team should also offer as part of this evaluation a recommendation as to the feasibility and capability of the local hospitals to assume responsibility for procurement of spare parts; additional units and other necessary commodities themselves. (N.B. This may require modification of the Grant Agreement.)

(e) The overall goal to promote the establishment of an on-going dental care system for the rural populations in the Cameroons,

Lesotho and Rwanda should be examined. The team should include any information gathered concerning steps that local or host governments have taken to establish dental care services on a broader basis than this project and any national training programs in dentistry planned or initiated, as well as interrelationships to this project.

(f) This project's purpose was to provide immediate and continuous dental hygiene and care to the rural populations of Cameroon, Lesotho and Rwanda. The team will evaluate the project in relation to this stated purpose. To be examined will be the length of time until project start up after the initial Grant was made, as well as continuity of the project. The evaluation should include a statement as to the timeliness of the arrival of volunteers and any lags between departure and arrival of volunteers. If such lags exist an examination of the effect on orderly implementation of the program.

(g) Finally, a research component was part of this project. Any findings and plans to further such study should be examined in the evaluation.

(6) Equipment

A special area of interest to A.I.D. is the equipment used under this project. The evaluation team should examine the suitability of the equipment to its expected task, durability for expected level of use (50-100 patients per day), and maintenance capability. It was assumed that mission hospital staff would have the capability to maintain and repair equipment. The team should examine the occurrence of breakdowns and how repairs were effected (length of time for repairs, whether it was done in-country, and if spare parts were available for repairs).

The dentist, working in conjunction with the AID member, will provide the AID Africa Bureau Regional Affairs office (AFR/RA) with a draft technical paper with assessments, estimates and recommendations requested in the SOW. The paper will be reviewed by AFR/RA after which a final report will be submitted prior to the expiration of the 30-day period. The report should not exceed 30 typwritten pages in length, except for annexes, if any.