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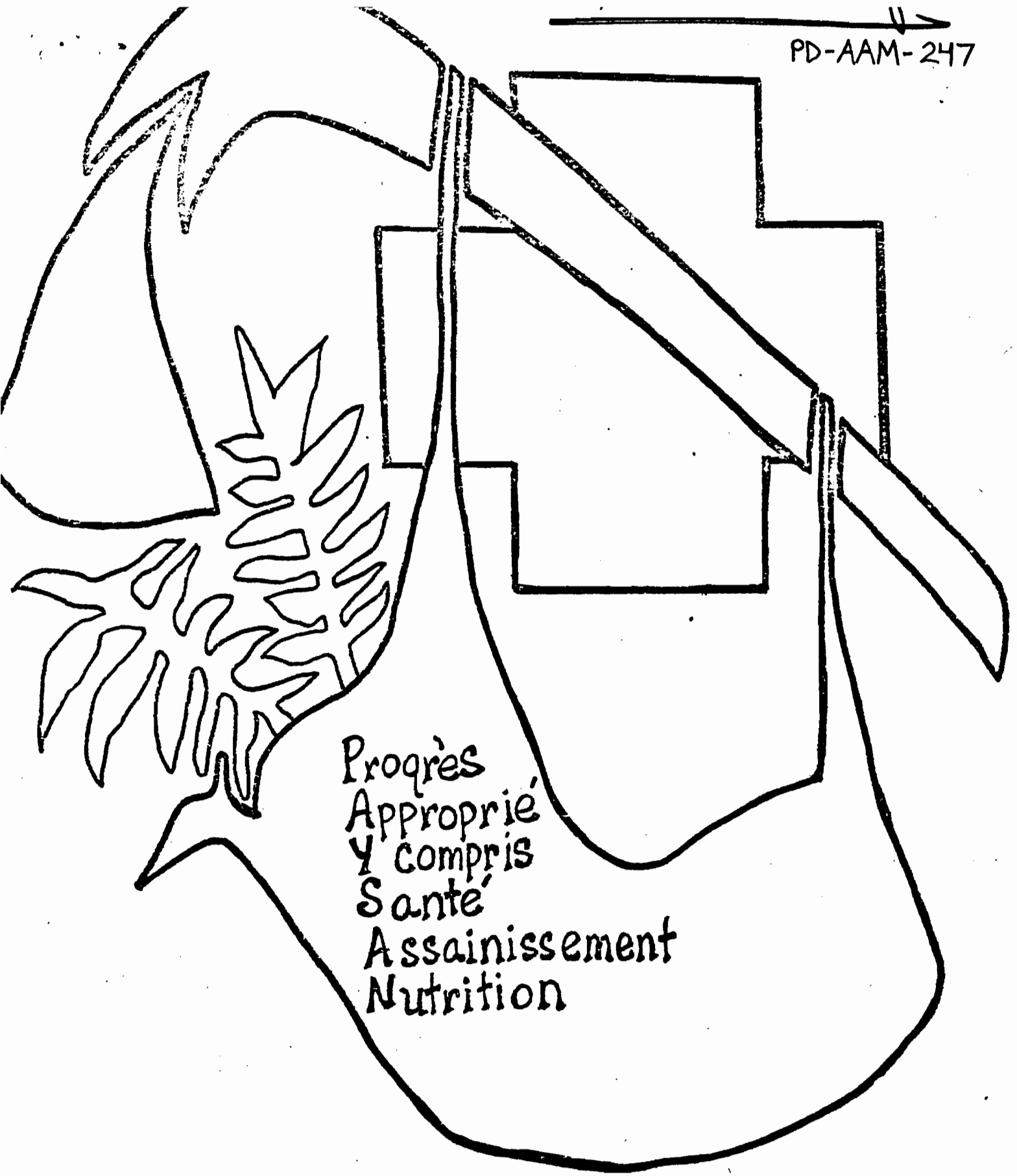

PAYSAN

MALI RURAL HEALTH PROJECT

REPORT AND EVALUATION
15 December, 1978-15 June, 1979

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Report and Evaluation
15 December, 1978-15 June, 1979
Mali Rural Health Project

Bjorn W. Nilson, M.D.

Introduction

June 16, 1979 is the first anniversary of the signing of the contract between the Harvard Institute for International Development and the Government of Mali. The first six months of project activity were primarily devoted to establishing living and logistical arrangements; building knowledge, attitudes and understanding; establishing working relationships; and hammering out the dynamic team process of coming to common goals. While the past six months have seen a continuation and maturation of these functions, the project has clearly entered into the operational phase. Building on our experience and drawing heavily on the knowledge and enthusiasm of the Malian team members, we have resolved a series of concrete administrative, technical, logistic and communication problems, and are now completing four cycles of village health worker (VHW) training.

I. Major Results

Sixty-one VHW's have been trained and are now providing treatment daily to fellow villagers for six common illnesses. Thirteen village pharmacies have been established and are providing simple, effective medicines at government controlled prices (Table I). Six million Malian francs ($14,000) worth of first-order medicines have been stocked for sale in village pharmacies (Table II). A rural population of approximately eighteen thousand now has access to a few simple health services under the Project (Table I). (A recent survey showed that, in the arrondissement of Toroli, approximately five times more patients are now being seen daily by village health workers than by the government dispensary theoretically serving the same area). In the process, a number of technical medical questions have been addressed; an experimental drug distribution system designed and implemented; a village-to-national-level reporting system worked out and tested; and vehicular and material supply systems created. In short, Ministry of Health Personnel and their foreign counterparts are now working together to train, supply and support VHW's in some twenty very remote Malian communities.

Discussion

The number of village health workers trained and the quantity of medicines delivered are not, however, the foci of this discussion. Major readjustments and considerable additional experience are needed before we can speak authoritatively about the optimal approach to training and

supporting VHW's.* This report will discuss the implementation of two basic operational policies, giving several examples of each in order to argue for their importance in similar projects. Finally, we shall analyze a few major problems -- resolved and unresolved -- with special emphasis on proposed solutions.

The start-up phase of the project has served as an informative testing ground for at least two administrative approaches that are often espoused but seldom carried through on the Sahel health scene, particularly in externally-financed projects (see report by B.W. Nilson, "Visit to Siné-Saloum Health Project, 8-9 March, 1979): 1)decentralization, and 2) integration and collaboration.

II. Decentralization as an Organizational Policy

The first approach is decentralization of specific program activities to the cercle, arrondissement and village levels. The issues here are: who has the problems, and who is most capable of solving them? By placing problem definition and responsibility for resolution clearly in the hands of the people closest to the work, feedback loops are shorter; rewards, both positive and negative, are more immediate; and a sense of accomplishment is derived primarily from doing the work rather than from tying to satisfy administrative policy. The challenge is to define central policy in such a manner as to maximize the local sense of responsibility, self-sufficiency and productivity, while maintaining enough knowledge of local activities and control to support, integrate and analyze the entire program. The following examples illustrate how this is being carried out.

A. Mobylette Distribution

The placement of nineteen mobylettes was one of our first steps in creating local responsibility. In the fall of 1977, seven mobylettes were sent to the two cercles. As these mobylettes were assigned both to the seven new Peace Corps Volunteers and to general project use, maintenance became difficult and repairs grew expensive for the Volunteers. For this and other reasons, by the end of the first year four of these mobylettes were not functioning and three were in various states of disrepair. The Peace Corps administration and volunteers urged the Project to buy more rugged motorcycles with higher cubic centimeter displacement. However, the Peace Corps itself has witnessed the increased severe accident rate, rising fuel and maintenance costs, scarcity of parts, and rarity of experienced, equipped mechanics involved in adopting such a policy.

Opération Mil buys their agents new mobylettes each year. In our opinion, this is an expensive policy in terms of resources and worker attitude. It is generally agreed that well maintained mobylettes can last four years or longer.

After approximately six hours of discussion at the cercle and national levels, the Project decided to sell the mobylettes at a reduced price to each

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* The basic rational philosophy and approach to providing primary health care in West Africa is well presented by J-F Donnard, "Soins de Santé Primaires," L'Enfant en Milieu Tropical, Paris, 1977, No. 108-109.

team member involved in training and supervising the VHW's. Health personnel now sign a contract obligating them to monthly payments to the Project at the cercle level, such that the cost is reimbursed in two years. If, in the meantime, they are assigned to another post, they have the option of paying the balance and taking the mobylette or reclaiming 2/3 of their investment.

In the past four training cycles, health personnel have driven mobylettes almost daily to remote villages under adverse road conditions, proving that well maintained mobylettes, while perhaps slower and more awkward than bigger machines, can do the job. Most health workers have taken it upon themselves to learn maintenance, or have found someone to help them. Some line their tires with local leather to protect against punctures. A recent assessment of the condition of the newly-assigned mobylettes in both cercles showed them to be in good repair.

From the Project's viewpoint, this policy of decentralizing ownership not only helps recoup part of the cost (to be used in the purchase of additional mobylettes) but also prolongs the life of the mobylette. From the health worker's viewpoint, it reinforces his sense of responsibility and confirms his pivotal position in the execution of the Project.

B. Landrover Allocation

Four Landrovers (two land cars and two pick-ups) were assigned to the regions. Several discussions and directives from Koulouba addressed the question of type of vehicle to be placed and level of placement (region, cercle, arrondissement). Once training began, it became apparent that work should dictate placement. The Regional Directors have very unselfishly permitted that the vehicles, initially assigned to them, be used almost full-time where Project needs are greatest, retaining the option to recall a vehicle to the Region for transport of Project personnel and supplies. However, maintainence and repair have become the clear responsibility of the Médecin Chef du Cercle. The cercle is the lowest level at which adequate vehicle care can be effected.

Following the same decentralization approach, a stockroom of common repair and maintenance parts, tools, lubricants and fuel is maintained at the Cercle level. The Médecin Chef is responsible for dispensing, inventory, reordering and reporting on vehicles, supplies, gas use, and so on. He requests advances regularly, based on a team budgetary decision. Forms for reporting inventories, budgets, projected needs, and vehicular use were developed nationally and are completed bi-monthly by the team, under the authority of the Médecin Chef.

The National Direction's responsibility is to see that all reasonable, clearly presented vehicle needs are fulfilled or answered. When there is doubt about the appropriateness of requests, they are generally fulfilled whenever possible and questioned subsequently in team meetings when necessary. The functioning of the system is far from perfect, due to communication, transportation and our own human deficiencies. Nonetheless, we are clearly trying to implement a policy of responding to field needs.

C. Setting Action Priorities

The type of health activity with which to start the program was another decision made primarily at the periphery. In this instance, major consideration was given to the concerns of the villagers themselves. Early in the program we held workshops at the arrondissement level, involving all the health personnel and field workers in agriculture and other related programs. We discussed programs ranging from improving the quantity and quality of water to childhood immunization and nutrition, to the collection of vital event data -- all within the realm of the village health worker. At the same time we had a series of discussions with village chiefs and their advisors, often with the entire village participating. It became clear that nearly every community was very interested in having simple, easily accessible curative services with modern, properly dispensed medicines. They were willing to pay market prices for drugs, to choose and support village health workers, and to either construct a small pharmacy building or buy a small locked wooden box for drug storage.

A list of major health concerns, as determined in our talks with villagers, was compared to morbidity and mortality data collected in community diagnosis surveys. We then analyzed these problems to determine which were manageable by established technology. In each arrondissement we identified five or six problems that were at once (1) of major concern, (2) prevalent, (3) severe, and (4) treatable (inexpensively, safely and effectively). Example: Villagers complained that malaria was a major problem, particularly in the rainy season (major concern). Systematic examinations of all children under five in sample villages showed that approximately 1/3 had palpable spleens (high prevalence). Questioning of arrondissement dispensary personnel and villagers revealed that untreated "fever" victims usually lost 3-5 days work (severe from the public health point of view). Chloroquine is a simple, relatively safe, inexpensive treatment for malaria (treatable).

In each arrondissement there thus arose a list of five or six problems that were at once of major concern; common; severe from a public health point of view; and treatable inexpensively, simply, and effectively. Appendix II shows how these problems were reflected in curriculum design in our last two training cycles.

All of these decisions were made primarily by the people who would be implementing the solutions and receiving the services. The function of National level staff participating in the meetings was to facilitate the process, provide technical backup, describe other programs, and assure local staff of their own authority. (The reader is referred to Morley* for a full discussion of this method of priority setting).

D. Training Policy

1. Where? In an effort to bring people closer to the problems, training has been done in the most remote setting logistically possible. Our initial 7-15 day workshops, involving 12-20 people, were held in the

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* Morley, David, Pédiatrie dans les Pays en Développement, Paris: Flammarion, 1977, Ch. 4.

arrondissements of Tambacara and Toroli. More importantly, all VHW's have been trained either in their own or in a neighboring village.

2. Who? All training of VHW's is done by village and cercle level personnel: Chef du Poste Médical, Aide Soignant, Infirmier d'Hygiène et Assainissement, etc. The training of trainers is done by Cercle level supervisors: Médecin Chef, Adjoint Médecin Chef, etc. Trainers have generally moved their living quarters from the cercle to the arrondissement (Tambacara) or even into villages during the training period. (Twelve medical personnel, Peace Corps Volunteers, and the Harvard physician spent two weeks together in the May-June training in Toroli).

3. How? In addition to setting course content (see C., above), peripheral staff decide where and when training will take place by consulting village work patterns, market days, holidays, and so on. The course duration and content are determined by the problems addressed. Consulting personnel come to assist in implementation and in improvement of materials. During the Tambacara training cycle, an artist and a pedagogue from the National Division of Education pour la Santé spent twenty days making visual aids and observing and critiquing the training.

In order to offset the increased hardship, separation from families and cost incurred in displacing health personnel to the villages, a small per diem is paid by the Project. Our preliminary assessment is that this will be a good investment of part of the two dollars U.S. per person per year service planned for in the Project Paper. The accent on decentralization implies the allocation of an increasing proportion of the health (and Project) budget to the periphery. (The cost of supporting this type of primary health care project and our related policy recommendations will be the subjects of a subsequent report).

E. Support by the Harvard Institute for International Development, Education Development Center, and United States Agency for International Development

The decentralized system has served to make HIID and EDC responses to in-country Project needs prompt and appropriate. In the past six months four key back-up personnel have come to Mali: Dr. Richard Cash, Mr. John Eddison, and Mr. Thomas Best of HIID; and Mr. Charles Myers of EDC. Information exchange through regular letters, weekly two-way telexes, monthly dictated and taped field reports, bi-monthly Cercle reports, and the prompt action of Dr. Cash and Ms. Hanson have permitted relatively rapid solution of most supply, technical and administrative problems. USAID/Mali and USAID/Washington did an admirable job of purchasing and delivering $30,000 worth of medicines within six weeks of Project request. As a result of this extensive technical back-up, we've gradually developed in-country and cercle libraries of international literature on such subjects as primary health care, training of health workers, appropriate technology, maternal and child care, and the major public health problems common in Mali.

As field needs are defined, we shall now have the technical capacity to help write and reproduce appropriate training guides and aids adapted for

both VHW's and their trainers. (See Horizontal Integration - Education Pour la Santé). Having the resources of these large and experienced institutions at the Project's disposal during the research and development period is another example of the supporting role of "The Direction."

F. Observations and Problems

The policy of moving decisions, people, and materials closer to the periphery does not eliminate problems; it only increases the probability of a "best fit" in the search for a solution. In deliberately adopting this approach and adapting it to a highly centralized system, other problems result:

(1) We've noted some hesitancy on our part, at the National level, to carry through joint decisions with which we do not entirely agree. On the other hand, there is a certain resistance to change at the periphery once they have implemented and lived with the decision. Example: The Project symbol (on this report's cover sheet) was designed and tried in Koro and was proposed for adoption by the entire Project. During a general meeting the Koro team members, in a strong display of support, urged the adoption of the logo in spite of the general tendancy to want to modify the design. Only now, three months later, are we getting around to actually painting the symbol on vehicles and equipment. We feel that these differences can produce a creative dynamic, particularly as mutual trust and understanding develop through solving common problems.

(2) The start-up period, during which each team member had to help develop and implement his role, was difficult and painful. Our initial workshops in each cercle, designed to identify needs, define the program goals and help team members develop their roles, were only partially successful; much subsequent work had to be devoted to completing the task. In retrospect, the task was probably too ambitious in size and scope, considering that change in rural Mali is a slow and cautious phenomenon.

(3) Project design is in conflict with a ground-up program development. The Project Paper should have specified quantifiable outputs (e.g., number of health workers trained, villages reached, pharmacies established, etc.) in a curvilinear, rather than straight-line progression. We were expected to produce the same numbers in year one as in year two -- a distortion of the natural evolution of this type of Project. This situation forced unnecessary compromises in such areas as materials development, quality control and reporting.

(4) For Malian and expatriate team members to work and live under rural conditions is very demanding, but, in our opinion, a necessary result of decentralization. Unfortunately, it has taken its toll on one of the Harvard advisors who has been torn between preferring to live in Kayes with his family and fulfilling the work demands in rural Yelimané. By mutual agreement, he will be phasing out his work during this rainy season and replaced by another public health physician recruited specifically to live in Yelimané. Dr. DeSolé and his wife have managed to do the work well, but only at the expense of emotional and physical stress.

(5) In decentralizing Project implementation in two cercles situated at opposite ends of the country, the problems of transportation and communication become critical. Land travel from Bamako to either cercle, via the best vehicles available, requires two days; telegraph messages routinely take four days; and even the emergency RAC system of the Secretary of the Interior took nine days from desk to desk, Yelimané to Koulouba, at last trial. Misunderstandings result, vehicles arrive unnecessarily, and materials and reports arrive late. The National function of coordinating studies, responding to technical and materials requests, and gathering program information for analysis and retrieval becomes snarled. The Regional levels have often been left uninformed and uninvolved. A large proportion of the budget is wasted on unnecessary vehicle traffic, inefficient staff time, and haphazard telegraph attempts. Clearly, an improved communication system would go a long way toward helping the Project realize its goals.

III. Integration and Collaboration

A. Rationale

The second major operational policy that has guided Project development has been that of maximizing collaboration, cooperation and integration within and outside the Ministry of Health. The team concept of management is closely allied with its policy of decentralization. There are many cogent arguments to support its adoption:

(1) An individual group member's identification with organizational goals and their realization will be greater if he participates in setting them.

(2) Group members managing their own organization have a greater sense of control of their lives; they are freed from the threat of arbitrary power.

(3) Group members learn from each other.

(4) Satisfaction of higher level needs for self-esteem, acceptance, and self-actualization is more likely under this system.

(5) Status differentials are broken down, fostering more open, honest communication.

(6) By exemplifying the management team in action, effective leadership at upper management levels moves down through the organization.

(7) Combining group resources often results in better decisions.

B. Description of the Policy in Action

Eleven services within and outside the Ministry of Health have provided over one hundred and seventy-five consultant days in the field, not counting the far greater amount of time spent by Malian technicians currently working full-time and living in the cercle (Table III). There is nearly

daily contact between leaders of these organizations and Bamako staff. Cercle level team members work and live together en brousse for days at a time. (For an outline of the personnel involved and characteristics of the last training stage in Koro, see Appendix II).

C. Program Structure Encouraging Collaboration

Besides the expressed commitment of the Directeur-Général Adjoint and program planners to maximize team integration, several deliberate policies have fostered interaction and team cohesiveness.

(1) The host country contract under which expatriate staff is not only encouraged, but obligated to answer directly to the Malian Government, frees them from the potential double-bind of working for two masters. Consequently, the entire team works directly with and for Malian government policy makers who have the experience, knowledge and right to adjust program design to evolving circumstances (see Appendix I, Adjustments in Project Paper). Furthermore, reports such as this can be written to answer primarily the needs of the host country and only secondarily those of the funding source or even the mother institution. Clear lines of contractual obligation make common objectives possible and promote team cohesiveness.

(2) Complementary skills in team composition encourage creative interaction. Malian and expatriate physicians and operations officers; U.S. Peace Corps Volunteers; infirmiers and infirmières of at least three levels and four skill categories; a physician specializing in traditional medicine; technicians in community development; cooperative agents; a pedagogue and artists; plus several other personnel supportive of community development activities have all had active roles in the program.

(3) The decision of program planners to provide office space in the Ministry (despite its remoteness to other services) has made for frequent and productive interchange between Ministry officials and full-time Project staff.

(4) The involvement of the AID Health Officer in negotiations, weekly and quarterly staff meetings, the training program, and field visits has permitted his understanding of and participation in program development, not only providing the Project with the benefit of his knowledge and experience, but also avoiding potential misunderstandings and conflict.

(5) Sharing secretaries, supplies, vehicles, duplicating machines, and other resources with the Ministry has helped expatriate staff understand administrative, organizational, material and personnel constraints. In most instances, by working together we've made significant progress toward finding at least partial solutions.

(6) Regular weekly team meetings with the Directeur-Général Adjoint (Malian Project Director) and all team members in Bamako provide a forum for discussing Project planning, policy, and implementation. Minutes of these meetings are distributed to all team members. In addition, the

Project Director has always found time in a busy schedule to discuss problems and policy of a more urgent nature.

Our third quarterly team meeting, scheduled for 9 and 10 July 1979, will be held at the cercle level in Koro for the first time. Cercle and arrondissement personnel, as well as those from the National and regional levels, participate in these meetings, where major issues in program design are debated and resolved.

Bimonthly reports from the cercles include requests for information, funds, materials and medicines, as well as news of current activities, plans and problems. Letters, activity reports, telegrams, and field visits from Bamako staff help complete the circle. The proposed radio system between Koulouba, the regions, and the cercles should help perfect this communication system.

D. Observations and Problems

The close integration of host country and expatriate factions in a Project of this type poses some interesting problems:

(1) Concerns over high benefits, generous per diems, and liberal amounts of sophisticated drugs, equipment, and vehicles associated with the "Operations" must be faced in the light of the Ministry's commitment to simplicity, economy, and GRM replicability.

(2) Expatriates are sometimes guilty of being impatient, overly-demanding, and quick to look outside of Mali for solutions. They have to remind themselves that the Malians are capable of solving their own problems, and that their role as expatriates is merely to catalyze and facilitate the process. It is sometimes difficult for support institutions to accept that in most instances the most valuable consultants are already in Mali.

(3) Ministry personnel are over burdened by responsibilities within and outside the country. The Ministry of Health needs additional financing and space to permit a director of primary health care services to carry out Ministry plans over the next five years.

(4) Foreign-trained (particularly American) physicians often find themselves critical of current West African medical treatments and approaches. Mere condemnation of common practices (such as frequent use of injectables, and the use of tetracycline in young children) is seldom convincing and usually abrasive. If, indeed, logical arguments and data for changing such policies exist, they need to be presented in the clearest, most convincing way possible. Furthermore, we must have a high tolerance for treatments that are symptomatic, harmless and trusted by therapist and patient alike. (We were recently quite impressed by a traditional healer in Koro who had eighteen mental patients living in his concession. He was practicing group and family therapy, running a half-way house intermediate care facility, and using role playing, just to mention a few "modern" psychiatric techniques).

IV. Goals and Plans

Having discussed the rationale and implementation of the policies of decentralization and collaboration, we hope to have given the reader a fairly comprehensive idea of program structure and major activities and problems to date. To complete the picture, this final section will deal with Project goals and plans in outline form. (Detailed work plans are presented in our regular meetings and reports).

The upcoming rainy season, when both arrondissements are virtually inaccessible for three to five months) will give us an opportunity to prepare for the next work season.

A. Well written, clearly presented training materials for health personnel and VHW's need to be perfected. We feel this could be an area for fruitful collaboration between the field, Education pour la Santé, and EDC.

B. Preliminary studies of the existing health situation need to be analyzed and presented. Both cercles are currently analyzing their data.

C. Drawing on this experience, a standardized approach to collecting representative morbidity and mortality data in other arrondissements in a systematic, simple and usable manner needs to presented. We are currently working on such a presentation at the National level.

D. Currently used process indicators, e.g., number of VHW's trained, visits to the field by staff, automobile use, drug sales and use, etc., need to be more uniformly applied and analyzed. We feel that the new PCV's might be very helpful in this task. Simple, more clearly presented reporting forms are being produced.

E. Plans for detailed, controlled studies of the effects of treatment and prevention interventions should be developed. For example: how does a nivaquinization (malaria prophylaxis) program affect child growth, spleen indices, parasitemia rates and hemoglobin levels? These studies will be conducted on a limited, defined population and will demand careful attention to design and implementation. They should offer a good opportunity to involve VHW's in scientific program evaluation.

F. Current community development projects (e.g., a dam in Koro, latrines in Tambacara, a deep well in Diongaga) need to be developed and expanded. Funding sources such as CARE, which has already partially financed two barrage projects, should be induced to participate to a greater extent. Gerry Goodrich is working actively in this area. Rob Martin, a Peace Corps Volunteer engineer, will be working with the Project full-time starting June 15 to help develop appropriate technology. Four new Peace Corps Volunteers, in addition to working half-time in data collection, analysis and reporting, will be involved with the Community Development Agents in applying appropriate technology. Their training program will be designed around a detailed job description currently being developed.

G. A better communication system at all levels is desperately needed. A proposal for a single side-band radio system between target arrondissements (mobile) and Cercle, Regional and National centers (fixed) at a cost of approximately $2000 per post, has been submitted to and approved by the Ministry of Health, and we are awaiting licensing from the Ministry of the Interior. An electrical engineer from Boston will come to Mali in September to help train Malian counterparts to install and maintain the system.

H. Plans for expanding our current coverage and for re-training working VHW's in preventive aspects of health work (e.g., child immunization, vital statistics collection, well cleaning, etc.) need to be developed. This planning will be one of the major concerns of an upcoming conference in Koro. We hope to begin our next phases of training as soon as villages become accessible at the close of the rainy season, using perfected training materials and techniques, a wider scope of preventive activities, and more experienced trainers.

I. Our current drug and equipment logistic and control systems need to be expanded and improved. Mark LaPointe and Peace Corps Volunteer Debbie Kreutzer are working on this. By December, we should have some useful cost data (e.g., What does it cost to train and support a VHW? What should a sample budget look like for a Médecin Chef wishing to start a similar project in a new cercle?)

J. All of this experience must be documented, analyzed and reported for discussion, use and dissemination by the GRM. This is the object of reports such as this and more detailed daily notes de service, minutes of meetings, cercle reports and position papers. As we gain experience, these conclusions will become increasingly valuable.

K. Until recently we were very concerned about the lack of an adequate system within the Project to provide for training maternal and child health care personnel. We have begun to resolve this by providing basic instruction to sixteen traditional birth attendants in Tambacara and by supporting the training of eight intermediate level midwives (matrones rurales) with the Centre d'Animation et de la Coopération in Koro. This month, with the financial help of AID, we have placed a physician and two qualified sage-femmes in a well designed course for training West African specialists in maternal and child health. We have hopes that when these people return after three months of intensive instruction they will make a major contribution to the team.

Conclusion : A Hope and a Challenge

The VHW system helps disadvantaged people help themselves. These people are learning that they do not need to suffer as their fathers and their fathers before them did; destiny is no longer an accident. No one can predict where this new sense of mastery will lead, but expectations will surely rise and leaders will be found to help realize them. People in the helping professions will feel increasing pressure to answer these rising

expectations. At the same time, training, supporting and retraining of VHW's places unusual stress on the Ministry of Health's arrondissement and cercle level health structures. Additional demands are made on limited staff; referral problems increase in number and complexity; new knowledge, techniques and work habits create staff dissatisfaction with exising equipment, medications, facilities and budgets. In short, we are introducing a major disequilibrium into a system that was in delicate balance. We are fostering the evolution of a new health system -- one that will be molded by forces arising directly from real human needs rather than simply the concerns of the health profession. Just beginning to glimpse the significance of this potential quiet revolution, we are presented with both a hope and a challenge to help create a more responsive, dynamic service institution.

TABLE I

PERSONNEL TRAINED, PHARMACIES ESTABLISHED, AND POPULATION SERVED

Village	VHW's trained	Midwives trained	Pharmacies	Population Served
KORO CERCLE:				
Anakaga Dogon	2		x	689
Birga Peulh	1		x	828
Birga Dogon	2		x	992
Deri	2		x	390
Andiama Tena	1		x	240
Bondo Tena	2		x	960
Koromatintin	2		x	300
Tinsagou	2			720
Sansagou Pin	2		x	420
Djidia	1			288
Gourdindé	1			540
YELIMANÉ CERCLE:				
Tambacara			x	2160
Diongaga	7	3	x	3540
Diagadromu	2	2		360
Niagnéla	2	1		204
Koméoulou	4	2	x	1980
Dogofery	3	2	x	1560
Diabougou	3	2		420
Kersignané	4	2	x	1284
Komodindé	3	2		708
TOTALS:	46	16	13	18,583

TABLE II

MEDICINES DELIVERED TO THE PHARMACIES, AS OF 15 JUNE 1979

Medicine	Number of Tablets			Value in Malian Francs
	Koro	Yelimané	Total	
Acetyl salicylic Acid, 300 mg (aspirin)	25,000	15,000	40,000	500,000
Chloroquine Phosphate (Aralen) 250 mg	20,000	15,100	35,100	438,750
Penicillin VK 250 mg	25,000	25,200	50,200	5,020,000
Sulfasoxizole (Gantrasin) 500 mg	3,500	16,000	19,500	474,825
Sulfacetamide Opthalmic Solution 15% (bottles of 30 cc)	70	1,128	1,198	718,800
			TOTAL	7,152,375

TABLE III

PARTIAL LIST OF COLLABORATORS AND THEIR CONTRIBUTIONS

Organization	Person(s) Involved	Principle Contributions and Role
A. Internally (within the Ministry of Health)		Principle consultants in the planning and execution of workshops in the target arrondissements.
Education Pour la Santé	M. Roumba M. Togo M. Berthé M. Diakité M. Koné	M. Togo has visited each Region twice and now serves full-time as pedagogic consultant and team member. Mssrs. Diakité and Berthé both lived at the training sites developing and testing visual aides. M. Diakité is now also full-time visual aid consultant for the Project. The National Division of Education Pour la Santé has been instrumental in production and duplica- of many Project teaching materials.
Institut National de Recherches sur la Pharmacopée et la Médecine Traditionnelle	Prof. Koumaré Dr. Koné	Dr. Koné has been our principle consultant and team member for Traditional Medicine. He participates weekly in Project meetings and has made extensive field visits, integrating Project activities with traditional medicine, identifying competent tradi- practitioners for Project referral, cataloging local herbs, and training staff in traditional herbs and cures. We hope to work with the INRPMT to add some traditional herbs to village pharmacies and develop referral sources for such problems as psychiatric illness and setting of simple fractures.
Pharmacie d'Approvisionment	M. Haidra Mme. Traoré	This division has been our principle collaborator for importing and stocking medicines. All shipments drugs are brought into Mali under their auspices and stored principally at the National depot.
Affaires Sociales	M. Touré	M. Touré's knowledge and leadership skills were a critical element in the Tambacara workshop, where he lived for two weeks acting as advisor and consultant. Affaires Sociales has supported our team Cercle Level Community Development agents with salary and materials. They were instrumental in placing Mme. in Koro as a social worker.

.../...

TABLE III, continued

Organization	Person(s) Involved	Principle Contribution and Role
Centre National Pour le Développement Communautaire	M. Kané M. Sylla M. Touré	Selected and assigned two members of their graduating class to work full-time with the Project, one in each cercle. The Center has provided support and counsel for community development activities, as well as coordinating funding from CARE/Mali.
Division de Nutrition	M. Simaiga	Provided technical advice and support for planned survey in Yelimané which, due to poor communications, was postponed. They have also assisted as technical consultant in the Koro workshop.
Division d'Hygiène et d'Assainissement	M. Tandia M. Sangaré M. Bagaga M. Dolo	Participated as environmental health consultant in the Yelimané and Koro stages. Supplied technical advice at the National level. Mssrs. Bagaga and Dolo, as agents in the cercles, participate daily in team activitie
School of Medicine School of Nursing	Dr. Ba M. Konaté Mme. M.	Plans to involve students at all levels in our field programs have been discussed and will be implemented when the operational phase of the program has permitted us to gain enough experience and specific research topics to create an organized, supervised learning environment.
B. Externally (outside the Ministry of Health)		
Centre d'Animation et de la Coopération (CAC)	M. Zacharia M. Diallo M. Sidibé (Mopti) M. Traoré (Kayes) M. N'Diaye (Yelimané) M. Diallo (Koro)	The Directeur-Général Adjoint was particularly instrumenta in helping M. LaPointe design a drug distribution and control system. They made a seven-day trip to Kayes and Yelimané to assure CAC cooperation. The CAC agent in Koro has been the principle planner and implementor in establishing and supervising the record system for eight pharma
DNAFLA		Translating technical materials into Dogon and Sarakollé f the Project. As well as participating in training workshops, DNAFLA agents have worked closely with Koro medical personnel in training VHW's to be teachers of adult education, and vise versa.
Opération Mil	M. Diallo M. Konaté M. Kinard	Financing DNAFLA. Opération Mil encadreurs have been very cooperative in explaining Project activities and providing valuable information.

Appendix I

Adjustments in Project Paper

A review of the January 1977 Project Paper entitled Mali Rural Health Services Development reveals that all critical performance indicators have been met or exceeded. However, as might be expected, many of these indicators and much of the paper's substance has lost its meaning with the passage of time and accumulation of experience. Thus the GRM has decided to:

(1) Delete the Regional Public Health Advisors.

(2) Start in both cercles simultaneously rather than sequentially.

(3) Decrease to four the number of Peace Corps Volunteers.

(4) Rely heavily on host country consultants.

(5) Take over complete budgetary control for vehicles, vehicular maintenance and medications.

(6) Have AID purchase and ship medications.

(7) Strengthen and enlarge the role of community development in the Project.

(8) Maximize cooperation between services in both cercles.

The AID Health Advisor has been a regular participant in our national level and trimestrial planning meetings and fully understands these and other evolutions in policy. The Harvard Technical Team fully supports these adjustments as having grown out of careful consideration by national leadership in the light of practical experience and extensive discussion. The implications of these changes on Project budgeting will be minimal, but a combined AID/GRM/Harvard meeting at the national level is planned for July to review these issues.

APPENDIX II

TRAINING OF VHW'S IN KORO 29 MAY - 6 JUNE 1979

Bondo Tena Secteur de Base

I. Participants:

VHW	Village	Distance from s. de b. (kms.)	Sex	Approx. Age	Language/Literacy
	Andia a Tena	8	M	28	French, Dogon
JEAN	Bondo Tena	0	M	37	French
LOUIS TOGO	Bondo Tena	0	M	20	French
KANDIEME TOGO	Koromatintin	7	M	25	French
NOUNINION	Koromatintin	7	M	45	illiterate
ALI	Tinsagou	4	M	35	Arabic
ALLAYE	Tinsagou	4	M	20	illiterate
LAIA	Sansagou Pin	6	M	32	Arabic
HASSANE	Sansagou Pin	6	M	33	Arabic
HAMADOUN TOGO	Djidia	4	M	22	illiterate
OUSMANE TOGO	Goursindé	7	M	22	illiterate

Dispensary Personnel	Position	Post	Dispensary Personnel	Position	Post
Dr. M. KOULIBALY	Physician	Koro	D. DOLO	Health Technician	Koro
W. KONE	Nurse	Koro	Y. TOURE	Community Dev.Tech.	Koro
M. BARE	Nurse	Koro	T. DIALLO	CAC Agent	Koro
F. BAGAYOKO	Nurse	Koro	G. SAGARA	DNAFLA Agent	Toroli
M. GUINDO	Auxiliary Nurse	Koro	Dr. P.G. KELLY	HIID Physician	Koro
K. DAMA	Nurses Aide	Toroli	B. LAMBL	Peace Corps Volunteer	Koro

II. Schedule:	29 May	30 May	31 May	1 June	2 June	3 June	4 June	5 June
8:00 am-noon	trad. theories & treat-ments	eye problems: conjunctivi-tis, foreign bodies, sod-ium sulamyd. (GUINDO)	malarial fever, chlor-oquine pro-phylaxis	diarrhea, re-hydration (DOLO) malnutrition, arm measurem't. (KELLY)	field work in villages	field work in villages	resp. dis-ease:cough, bronchitis, pneumonia aspirin (LAMBL)	general revie delivery of 4 batches of me (Andiama Bond

.../...

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APPENDIX II, continued

	29 May	30 May	31 May	1 June	2 June	3 June	4 June	5 June
3:00 pm-5:00 pm	role of the VHW (Y. TOURE)	headaches, toothaches, rheumatism, aspirin (F. BAGAYOKO)	scabs, abcesses, penicillin (M. BARE)	exam, return to Koro due to rains	"	"	goiter(KONE) notebooks and manuals for illiterates	Koromatinti Sansagou Pi
9:00 pm-11:00 pm	--	Goursindé	Bondo Tena Andiama Tena	--	--	--	Koromatintin Sansagou Pin	Tinsagou Djidia

III. Remarks:*

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The second session served to train the trainers as much as the village health workers (VHW's).

The villages were more spread out this time, thus the VHW's preferred to come to the Secteur de Base each morning and return to their homes in the evening.

The training zone was exclusively Dogon.

Every morning and evening, each team member would take his turn in leading a discussion on one of the themes. The village chief was asked to send patients appropriate to the theme of the day. If no one were available, the trainer would act out a skit with the VHW's.

The following were used for training materials: treatment sheets, memoranda in French, a Dogon text (translated from the memoranda by one of the VHW's, with the help of a Pel missionary).

One of the objectives of the training was to develop notebooks and memoranda and to translate materials into Dogon. To help with the latter task, M. Dedeon Sagana from DNAFLA kindly accepted to take part in the program.

Mr. Toumani Diallo from the Cooperative conducted the evening meetings, during which the villagers decided upon the management and storage of medicines.

As a follow-up to the training, it was envisaged that certain team members would spend a few days working with the VHW's in their own villages.

Written by Barbara Lambl
Peace Corps Volunteer, Koro

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*(translated from French original)