

PNABI 494

72386

Review of Alternative Approaches to Health Care Delivery...

614 Management Sciences for Health.

D412 A Review of Alternative Approaches to Health
Care Delivery in Developing Countries.

~~WV 46~~ Kevin M. Denny. Oct. 1974.

~~15N-12294~~ 1 v.
~~10496~~ Proj. 489-11-580-649.
AID/csd-3298.

1. Health services. 2. Health, Rural. 3. Innovations
- Health services. I. Denny, Kevin M. II. Contract.
III. Title. IV. Alternative Approaches to Health
Care Delivery...

A Review of Alternative Approaches
to Health Care Delivery
in Developing Countries

Management Sciences for Health
One Broadway
Cambridge, Mass. 02142

Prepared by Kevin M. Denny
October 15, 1974

Table of Contents

Introduction

- I Papua, New Guinea - Aid Post Orderlies
 - II Malawi - Village Tuberculosis Program
 - III Guatemala - Health Promoters - Village Health Entrepreneurs
 - IV Pakistan - Auxiliaries and Dais to Deliver Family Planning Services
 - V China - The Barefoot Doctor
 - VI Guatemala - Health Care Extenders
 - VII Navajo Indians (U.S.)
 - VIII Central America and Iran - Mobile Health Teams
 - IX Haiti - The Triangle Project
 - X Indonesia - Dana Sehat - A Community Health Insurance Scheme
 - XI Republic of Vietnam - Village Health Stations
 - XII The Philippines - Botica Sa Baryo
 - XIII The Philippines - Barrio Resupply Points
 - XIV Thailand and India - "New" Indigenous Practitioners
- Appendix A - An Independent Audit of "Successes" in Health Programs
- 1 "Financing a Charity" - comments on Guatemala's Health Promoter Program
 - 2 "Mobile Health Clinics Become a Shell Game" - comments on Central America's Mobile Health Teams.
- Appendix B - The Exportability of the "Barefoot Doctor"
- Appendix C - India - A Case Study of Health Center Effectiveness

A REVIEW OF ALTERNATIVE APPROACHES TO HEALTH CARE DELIVERY

PURPOSE OF REVIEW

Many observers have pointed out the pressing need for new approaches to the delivery of health care in the developing world; approaches that will maximize the use of existing resources enabling health care to be made available to a wide range of people in need, especially in underserved rural areas.

This paper will review a number of alternative approaches which have been used in health programs around the world to expand the breadth and scope of health services. Its intended audience is health planners and policy makers in developing countries who are faced with the practical problem of meeting the ever increasing expectations for health services in their countries. The motivating rationale for this review is the belief that independent invention is a wasteful process and that it is both possible and useful to accelerate the rate at which new ideas about the delivery of health care diffuse throughout the world. By providing access to information about innovative approaches being followed in a variety of health programs, both in the developing world and in the developed, it is hoped that these planners and policy makers will be better prepared to evaluate the range of alternatives for the organization of health services and to design their own programs in a way that will bring the greatest amount of health benefit to the widest possible group of people.

SOURCES OF FORMATION

The examples of innovative approaches to health delivery reviewed in this paper have been gathered from literature and from informants who have actual experience with the specific programs. No claim is made that the programs described here represent a comprehensive review of all the worthwhile experiments in expanding health services or that the particular programs reported on are complete and up to date in every detail. To emphasize the tentative nature of this review, and to facilitate its revision, it is being prepared in loose leaf fashion to allow additions and amendments to be made as needed. Information from readers on other programs which should be included in the review and corrections or updating on programs described will be greatly appreciated.

The methods of information gathering used for this review have serious limitations, not the least of which is the necessity to rely heavily on program administrators for a description and evaluation of their own programs. Ideally, the often times uncritical data obtained in this fashion should be substantiated by independent observations. Unfortunately, as site visits were not possible, gaps between program descriptions and actual performance may in some cases go undetected. (See Appendices A and B for examples of gaps that did not go unnoted.)

WHAT ARE ALTERNATIVE APPROACHES? WHAT?

For the purpose of understanding the intended meaning of the term "alternative approaches", as used in this review, the phrase "beyond the health center" could be easily substituted for "alternative". Almost all developing countries have evolved some variant of the health center approach to providing health services to rural peoples. This approach relies on some form of rural health facility to provide for the curative and preventive health needs of a defined population. In actual practice, these health centers, usually staffed by highly trained physicians, nurses and support staff, are inundated with demands for curative health care, with the result that most of the health center's activities revolve around the care of persons who come to the health center seeking services. Only seldom does the health center reach out to the community it is intended to serve to provide such basic services as immunization, health education, sanitation or simple curative care.

"Beyond the health center" approaches to health care are ones that attempt to extend the range of health services past the stationary limits of a health facility into the villages and homes in the community. As the examples that follow will demonstrate, there are a number of ways that this can be done. They usually follow two basic lines, however. In one, health personnel assigned to the health center are trained, motivated, and, if necessary, mandated to bring their services to the villages and homes of people living around the health center.

This approach, at its best, views the community as the patient. The health center becomes primarily a place for health personnel to "work out of" when providing care and services to the community. In order to meet the demand for health services which is generated by a system that brings health care directly to the people, it is often necessary to develop new categories of health workers and new strategies for influencing health. To be effective these new strategies must incorporate plans for concentrated efforts in preventive health services in the community such as immunization, education in nutrition, sanitation, and the provision of family planning information and services. The key to the success of such programs is, without fail, the attitude of the health workers, their understanding of health problems in the community and support that they receive both from the community and their supervisors at the health center.

The other basic approach which may be followed in extending modern health care beyond the health center is the one that begins with the recognition that every society or cultural group has its own intricate systems for providing for the health of its members. These systems of care, which invariably have deep roots in the tradition and culture of the society, and which, with few exceptions, are highly accepted and valued by the vast majority of the population, serve as the base upon which an effective system of health care can be built.

WHY ARE
ALTERNATIVE
APPROACHES
NEEDED?

There are a number of reasons why new approaches to delivering health care are essential in the developing world. For the purpose of this review, however, we will limit our discussion of needs to the four Cs: Culture, Cost, Continuity, Coverage.

Culture - Beliefs concerning the cause and proper treatment of disease effect the action that an individual takes when he is ill. This set of beliefs and attitudes about health is only one small component of that total set of beliefs that make up a society's culture. Many systems of health care that have been set up in the developing world have not devoted proper attention to the cultural factors effecting actions that people take for health care and health maintenance. In many cases the so-called cultural gap between the providers of rural health services and their users is not as much a cultural clash as it is a life style clash.

Sophisticated urban trained physicians and nurses, even though they may share the same culture as their rural brothers, seldom have a sensitivity to the unique sets of attitudes, beliefs and practices which shape each aspect of health in a traditional un-urbanized society.

Innovative approaches to health care are needed that direct themselves to the specific question of translating modern medicine into a form that can be understood and appreciated by persons who have limited familiarity with it. By bringing health services to the community and community representatives to the delivery of service it is postulated that modern health concepts can be made more compatible with traditional beliefs and behaviors.

Costs - As the information presented below indicates there are few developing countries which have the resources, especially money and manpower, to adequately meet the health needs of their populations.

Country	Health Expenditure Per Capita Per Annum (US \$)*	Number of Persons Per Physician **
Nepal	.38	49,770
India	.40	4,800
Afghanistan	.40++	20,000
Nigeria	.50	58,260
Thailand	.60	7,970
Malawi	.64	75,250
Sudan	1.02	15,940
Guatemala	2.36	3,620
Senegal	3.46	14,940
United Kingdom	81.00	820
United States	221.00	630

* From Bryant and King (1967 - 1968)

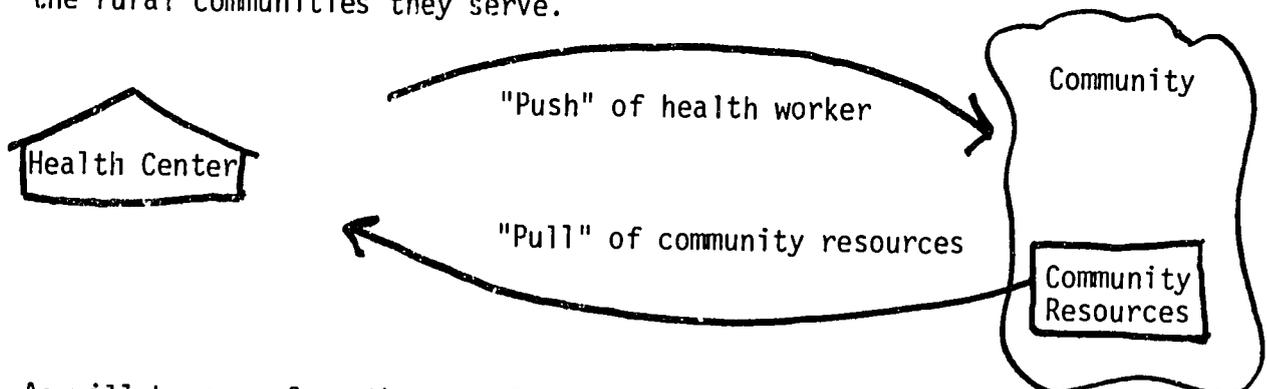
** WHO - World Health Statistics Annual 1970 - pp. 41 - 45

++ Estimates of Government Expenditure only - 1972

In order to capitalize on existing health systems to expand services, it is essential to first understand the components which make up that system. This requires a careful analysis of not only the types of health resources available to the community, including such diverse categories as indigenous practitioners, native midwives, itinerant "injection" doctors, bonesetters, toothpullers, herbalists, spiritualists, pharmacists, bazaar medicine shops, western or modern practitioners and self care systems, but also of the attitudes of the community towards the prevention and cure of disease and their perception of the pathways to be followed to receive appropriate treatment for each health problem. Another important, but frequently neglected area of investigation is the amount which is spent in the community on the various traditional health practices. This question becomes particularly critical when introducing a modern system of health service which is in potential economic competition with the existing system into a community or when evaluating the extent to which a community would be able to support the cost of modern health service that it demands.

After having analyzed the various components that make up the existing health system, consideration then must be given as to how each can be harnessed to provide services that will be compatible with a scientific understanding of methods of controlling disease. In the action phase of this approach, traditional resources are integrated with health center resources in the common goal of effectively meeting the health needs of the villages they serve.

The two basic lines may be viewed as the "push" and "pull" approaches to health delivery. In the first approach, services are pushed down from the health center into the community; in the second approach, community persons are pulled up to the health center to gain understanding in the recognition and treatment of health needs and to assist health authorities in introducing modern health services into the rural communities they serve.



As will be seen from the examples that follow, these two approaches are not mutually exclusive. Some of the most successful programs are those which combine the "push" and "pull" approaches, using village level persons to work in conjunction with health center workers who reach out to bring services to the community.

Given the severe constraints on planning health services, it is essential that programs be designed that are efficient - i.e. that make the best possible use of available resources to meet existing needs. New approaches to delivery are demanded that carefully weigh cost effectiveness. For example, it often costs as much as ten times as much to train and support one physician as one village health worker trained in simple curative and preventive care. The question which arises, aside from whether there will ever be enough doctors to meet the needs for village level health care in a developing country, is whether a physician is ten times as effective as a village health worker in meeting basic health problems. In view of the consistent pattern of disease found in most rural sectors of developing countries and the typical patterns of illness which villagers recognize as problems (these two are not always identical) there appears to be reason to believe that a village based worker with minimal training, a basic kit of diagnostic tools and medicines and an appreciation of preventive health measures can be an effective agent in helping a community overcome its burden of disease.

Continuity - The need for health services is continuous. Not only do acute illnesses occur at all times of the day and night, but many different types of health programs, such as sanitation improvement, tuberculosis treatment or family planning motivation require long term followup.

Community health workers, even if they are not community residents themselves, have the potential to provide regular care and followup; local health workers, living in the villages they serve, have the potential to provide services on virtually a 24 hour a day schedule, every day of the year. There are few health centers or hospitals which can offer their users such continuously available services.

Coverage - A number of studies of health services in the developing world have pointed out that the vast majority (up to 85% according to some studies) of users of health centers come from within a five mile radius of that facility. This fact appears to demonstrate that, even if a country had the resources and health manpower to open an extensive network of health centers, it is doubtful whether those centers would ever be able to adequately care for the health needs of vast segments of the rural population. For example, if the formula is used that a health center can effectively serve only those living within a five mile radius of it, a country like Afghanistan with an area of 245,000 square miles (1/3 of which is said to be inhabited) would require 1030 health centers in order to care for the health needs of its population.

Another aspect of the problem of coverage can be seen in many Middle and Near Eastern countries where social and religious constraints on women make it difficult for them to travel distances for health services and preclude their treatment by male health workers, either at health centers or in their own villages. In order to increase the availability of health services for these women, and for their

children whose health care is often received in association with their mothers, it is essential that alternative approaches to care in these countries in particular give emphasis to the recruitment and training of female health workers.

Low cost alternative methods of health delivery, relying on paramedical personnel to reach out beyond the health center or local community resources to care for the majority of village health needs, appear to be one practical hope for providing health coverage to large, dispersed rural populations.

CAVEATS

The examples that follow attempt to illustrate new approaches which have been developed to provide health care that is low cost and broad in coverage. The examples, however, are from countries with a wide range of political systems and geographic, economic and cultural characteristics. Care and judgement should be exercised in evaluating which of the approaches would have merit and transferability to countries with differing sets of characteristics.

Finally, although the examples presented in this review represent interesting attempts to improve the delivery of health care, in only a few cases do they provide the necessary information to assess the impact that the program has had upon its intended target population. What effect does the presence of a village health worker in a Guatemalan village have upon the infant mortality rate in that village? Does membership in a community health insurance scheme lead to improved health in the community and for the individual in the community? Does any new health program have an impact beyond the very important one of satisfying a people's demands for health care?

It is essential to take a critical view of any new approach to the delivery of health services to determine whether it is new in the product it delivers as well as the shape that it takes. Evidence to date as to whether the programs described in this review actually provide a better product - that is whether they lead to a demonstrable improvement in the health and well being of the people they serve - is scant.

Until additional information does become available, however, the health planner must proceed to design his programs based on the selection of approaches that have the highest probability of effecting positive change in the health needs of his country. Hopefully, this review will serve a purpose in helping to make that selection.

Papua, New Guinea - Aid Post Orderlies

BACKGROUND Maurice King in his book Medical Care in Developing Countries states that patients should be treated as close to their homes as possible in the smallest, cheapest, most humbly staffed and most simply equipped unit that is capable of looking after them adequately. In Papua, New Guinea this form of health care has been in operation for a number of years, using minimally trained and equipped Aid Post Orderlies (APOs) to deliver services to widely dispersed rural populations.

DESCRIPTION OF PROGRAM Papua, New Guinea has a relatively large population, dispersed and isolated by difficult terrain and poor communication, which suffers from a wide variety of the infant and adult diseases common to most developing countries. In order to reach this population with basic curative and preventive services, the Government, in cooperation with a network of Mission hospitals, has for a number of years conducted a program for the training and supervision of a group of village health workers called Aid Post Orderlies.

The Aid Post Orderly participates in a one year training program stressing the recognition and treatment of the most common diseases found in the rural sections of the country. In addition, emphasis is given in the training program to such activities as community development, health education, sanitation and immunization. At the successful completion of training and, after one year of supervised practice, the APO is assigned to a specific rural area where he will both live and work.

The APO is provided with a simple dispensary and home by the people in the community which he serves. Often the first step that an APO must make, however, is to convince the community leaders of the importance and value of the services which he has to offer and the need for the community to cooperate in providing the necessary facilities and support for him to perform his duties. APOs may or may not be from the villages in which they work; some preferring to practice outside their own home areas.

The APO is supervised and receives his drugs and supplies from either the government or mission hospital which has the responsibility for health in his district. All APOs receive a salary from the government and deliver their services and drugs to their patients free of charge.

The APO is issued a medical supply kit which includes about 14 basic drugs to be used in the treatment of the most common illnesses encountered in rural New Guinea. He refers patients with illnesses he cannot treat to the district health centers and hospitals and follows up on their treatment when they return to their homes. The APO also notifies the hospital when there is an outbreak of a particular disease which he is incapable of handling himself thus acting as an early warning system of epidemics in the country.

EVALUATION While it is difficult to evaluate the exact impact that APOs have upon the health of the communities they serve, it is generally believed that they



provide an essential service to rural villages which would have no access to modern health services. One indicator of the value placed on the services of the APOs can be found in the pressure that was placed upon the government by village councils to revise their recent decision to stop training Aid Post Orderlies. As a result of this pressure, the government will continue the APO programs as before.

COMMENTS

Perhaps one of the most important roles of the APO is to serve as liaison between villagers and governmental and mission health and social services. In this role they provide information about the needs of people in remote areas and assist the government and missions in designing programs that will effectively meet these needs.

SOURCES OF

Department of Public Health

ADDITIONAL

Port Moresby
Papua, New Guinea

INFORMATION

Malawi - Village Tuberculosis Program

- BACKGROUND** Tuberculosis is a disease which because of its high prevalence, communicability and debilitating effects deserves priority treatment in many developing countries. In 1964, Malawi, recognizing TB to be a problem of such significance that it required a special focus, instituted a village level program of case detection and domiciliary treatment.
- DESCRIPTION OF PROGRAM** The Malawi Tuberculosis Project was designed as a joint activity of the Ministry of Health and the U.S. Peace Corps. Forty Peace Corps volunteers (PCVs) were assigned to the project after receiving special training in tuberculosis case finding and treatment in the United States. Each PCV upon arriving in the country was assigned a Malawian health assistant (HA) to work with him during the course of his assignment and to take over the project at the completion of two years. Training for the health assistant was carried out primarily on an on-the-job basis, working with the PCV in the field.
- Initially, each team (PCV and HA) selected a village with an approximated population of 1000. After introducing the project and themselves to the village leaders, the team began a door-to-door canvassing of the village, recording the entire population and giving tuberculin tests (PPD) to each member of the household. Symptoms were checked for each family member and suspicious cases were further tested by x-ray and sputum slides for TB. All final diagnoses and treatment recommendations were made by a Tuberculosis physician assigned to the project.
- Usual treatment for active cases was daily doses of INH and Thiacetazone. Patients were ordinarily treated at home by the team with no change in their work habit, diet or life style. Contacts within the household were placed on prophylactic regimen of INH and carefully observed for signs and symptoms of active TB.
- EVALUATION** No formal evaluation was conducted during the few years that this program was in operation. However, the following conclusions based on the impressions of PCVs (as expressed at their end-of-tour conference) can be tentatively drawn:
- Health workers with little special education beyond secondary school can be trained to perform specific functions such as TB case finding and treatment.
 - Domiciliary treatment of tuberculosis can be effective. Modern TB drugs allow effective treatment programs to be launched at the village level, with the central consideration to be that close supervision be established to insure that patients take their pills daily.
 - Tuberculosis is only one of many serious health problems facing villagers and any successful program to combat tuberculosis must be tied to efforts to improve nutrition, environmental conditions and general health care, especially among the young.

COMMENTS

It could be argued that such a program could not be successful without the use of Peace Corps Volunteers. It should be pointed out, however, that none of the Peace Corps volunteers had had any specialized training in health before joining the program and that they had received only six weeks of training in tuberculosis case finding and treatment. Also, a number of health assistants had begun working in villages independently of the PCVs and were to all observations confident in their tasks and effective in their operation.

The most serious question which can be raised about this approach is the one of cost. Can a developing country afford an all out attack on a particular disease such as tuberculosis? From a cost/benefit point of view, would a single purpose program be better directed at improving water supply systems, setting up nutrition programs or carrying out immunizations over a broader segment of the population? Or perhaps more appropriately given the frequency with which the TB teams were requested to deal with a wide range of health problems in the village, the question can also be asked whether tuberculosis treatment should not be simply included as one component of a general village health worker's activities.

SOURCES OF
ADDITIONAL
INFORMATION

Dr. Cecil Slome
Department of Epidemiology
University of North Carolina
School of Public Health
Chapel Hill, North Carolina

Guatemala - Health Promoters - Village Health Entrepreneurs

BACKGROUND

Most developing countries are severely limited in the resources that they have to apply to the delivery of health services, especially among rural populations. Not only is their supply of trained medical personnel in short supply (and inequitably distributed), but the amount of capital that they have available for drugs, equipment and salaries is less than would be required to bring basic health services within the reach of all of their citizens. In Guatemala this problem is being met by a program of rural health care which uses specially trained village health workers (health promoters) who work as private entrepreneurs diagnosing common medical problems and providing simple curative and preventive health services.

DESCRIPTION

OF
PROGRAM

At Chimaltenango, in Highland Guatemala, a program has been set up for the training and supervision of local village residents as health promoters. Trainees for the program are selected with the help of the leaders in the community with the understanding that after completing the training program the promoters will return to their own home village to live and work.

The training program, which is one year in length, and which can be begun at almost anytime during a year, stresses the recognition of symptoms rather than the complete understanding of disease processes. Trainees come to the Behrhorst Clinic in Chimaltenango one day a week for the duration of their training, during which time they receive practical training in the recognition and treatment of the most common illnesses that they will see in their work in the communities. The day begins with trainees making "rounds" with physicians on the hospital staff, during which time the student sees the patient and his problem first hand and discusses with the doctors how the patient can be managed in his own home village and how the disease can be prevented. Afternoons are devoted to seminars and discussion of special health problems and approaches to their management.

After completing the training program and successfully passing a final exam to demonstrate his understanding and ability, the health promoter is allowed to dispense medicines and give injections in the particular villages where he is assigned. Regular supervision is supplied by the staff of the hospital and promoters are encouraged to refer all problem cases to the physicians at the hospital for treatment.

The health promoters receive no payment from the hospital or the government for their services but are paid directly by the people they serve. Fees for services which are usually set by the leaders of the villages themselves, average about 25 cents a visit plus the cost of medicines. All medicines are purchased by the health promoter from the hospital at rates that are substantially below the cost of drugs purchased at pharmacies. In order for a promoter to obtain his monthly supply of drugs he must pass an examination to demonstrate his understanding of some common health problems. The resupply procedure also gives the hospital staff the opportunity

to carry out ongoing training for the promoters. Some of the sixty persons who have been trained as promoters have been returning to the hospital for continuous review and training for as long as eight years.

While the duties of the health promoters stress simple curative medicine they are also trained and operate in other areas including vaccination programs, tuberculosis control and treatment, family planning, and agricultural improvement. The mechanism by which the health promoter is reimbursed for his services, however, appeared to encourage his concentration on curative services for which he is compensated on a fee for service basis.

EVALUATION

If imitation is indeed the sincerest form of flattery, the Health Promoter program would appear to have generated an abundance of positive acclaim in Guatemala. For example, plans are underway by the Government to extend the health promoter concept to other rural sectors of the country.

From the viewpoint of the quality of care which is being delivered, the program would also appear to score highly. One recent evaluation indicated that promoters provided the proper treatment to patients in 91% of their cases -- a figure that would compare favorably with any modern well trained physician.

It is perhaps in the area of coverage that the program has demonstrated its greatest value. Sixty health promoters, working in over fifty communities currently serve an estimated population of over 200,000, treating roughly 25,000 patients in a year's time, many of whom would have ordinarily received no treatment -- and most remarkably, all at absolutely no cost to the government.

COMMENTS

Much of the success of the program is directly attributable to the vision and dedication of the physician who established it - Dr. Behrhorst. The program itself has, however, been designed to function as a model for health care that can be duplicated elsewhere in Guatemala or the developing world. It will be a matter of interest to see whether the government's health promoter program will have the degree of success which is acclaimed for the program in Chimaltenango.

ADDITIONAL

The information upon which this review was prepared was obtained from descriptions of the program prepared by its administrators. For another, independent description and evaluation of the program, see Appendix A.

SOURCES

OF

INFORMATION

Dr. Carroll Behrhorst
Medico Y Cirijano
Chimaltenango, Guatemala
Central America

Pakistan - Auxiliaries and Dais to Deliver Family Planning Services

BACKGROUND

What does a country do when it has made a commitment to lower its birth rate through a vigorous program of family planning but it does not have the trained personnel to set up an effective delivery system for contraception? This was the problem faced by Pakistan in 1965 when it made a decision to lower its birth rate from 50 to 40 per thousand by 1970. The approach which Pakistan followed in order to overcome their severe shortage of trained manpower was to train a cadre of special paramedical workers for family planning and to recruit traditional midwives or "dais" to promote family planning at the village level.

DESCRIPTION

OF PROGRAM

The intrauterine device (IUD) was the contraceptive method selected for large scale use in the Pakistan National Family Planning Program which began in 1965. Although the IUD has been demonstrated to be an acceptable and extremely effective method of contraception and one which has the important advantage of not requiring repeated motivation - a single acceptance giving a woman prolonged protection - it does have the disadvantage that its insertion ordinarily entails a medical procedure carried out by an individual with a fairly high level of technical training and skill. In many countries of the world, including Pakistan, where women will not accept male doctors for IUD insertion, this method carries with it the necessity of reliance on female medical personnel - a resource often in short supply, especially in rural areas.

Recognizing these problems, Pakistan initiated two new categories of female health personnel to work in their national family planning program; Lady Family Planning Visitors (LFPV) and Lady Organizers.

Lady Family Planning Visitors - A decision was made that auxiliary workers would have to be trained to distribute contraceptives, including the insertion of IUDs, in order to meet the stated goals of the national family planning program to make contraceptive services available to large numbers of rural women. In order to carry this out, year long training programs were set up at a number of sites to train paramedical personnel (Lady Family Planning Visitors). Mature women, 18 - 35 years of age, preferably married and with ten years of formal education were selected by local district councils to participate in the program.

In the training program emphasis was placed on:

- The proper selection of cases for IUD insertion.
- Alternative methods of contraception for women for whom IUDs are not appropriate and methods of referring women with medical problems to proper medical facilities for care.
- The importance of antiseptic techniques in the insertion procedure.
- Counseling of clients.
- Recognition and management of side effects.

An important part of the training program was the requirement that each LFPV complete 30 examinations and 100 IUD insertions under the supervision of training staff. At completion of training, LFPVs return to their own home areas to deliver family planning services in the community they serve.

When assigned to a post each LFPV receives a salary of \$28.00 a month, \$6.20 a month housing allowance and an incentive of \$.62 for each insertion she performs.

Lady Organizers - Lady Organizers are local midwives who have been recruited by the government to "organize the Family Planning program in their units". Their responsibilities include:

- Motivating women to accept family planning
- Supplying conventional contraceptives to those requesting them
- Following up on IUD acceptors and gathering service statistics
- Referring cases to LFPVs and Lady Doctors for IUD insertions
- And (according to the Family Planning Scheme 1965-1970) eventually learning to do the IUD insertions themselves

The Lady Organizers, who are usually older than LFPV trainees and often widowed (30-38%) and usually illiterate (up to 88% in some areas) are recruited from among local midwives or dais; they receive one week of training carried out by Family Planning Officers (usually males) at local health centers.

For their work in the National Family Planning Program, Lady Organizers receive three types of compensation - a salary of \$3.10 per month, a referral fee of \$.52 for each woman they contact who accepts an IUD and a commission (50 - 80% of selling price) on all conventional contraceptives purchased from them.

One of the key roles of the Lady Organizers is to act as "go between" for providers of services (Doctors, LFPVs) and the female clients. The fact that large percentages of them are widows who are accustomed to dealing with both wives and husbands in their traditional roles in the village as dais and respected survivors, they are capable of being more open in their communications in Pakistani village life than other women would be and thus are potentially able to play an effective role as village communicators.

EVALUATION

The use of paramedicals and dais has been well accepted in Pakistan by both members of the health profession and the communities they serve. Although no complete evaluation has been carried out of LFPV performance on a national scale, one indicator of their potential effectiveness can be seen in a study which was conducted to followup on their training. Twelve LFPVs working in five different districts had done 7,900 insertions in the seven months that they had been posted to the field; of these only 1% of the women requested removal and only 0.3 developed serious complications requiring hospitalization. In 1968, 70 - 80% of all insertions - about 500,000 - were performed by paramedicals.

The effectiveness of Lady Organizers appears to vary greatly, depending upon the individual and a number of other characteristics. However, the decision to use traditional dais as grass roots workers based on the assumption that their established contacts with women, especially during the period of pregnancy and childbirth, would provide a ready carry over to the area of contraceptive use, appears to have been a sound one. It has been estimated that there are over 20,000 dais in Pakistan (another 30,000 in Bangladesh). This is a resource which cannot be overlooked in seeking ways to deliver health and family planning services to rural women and their children.

COMMENTS

The war in 1971 and its resulting social disorganization effected family planning programs both in Pakistan and Bangladesh. In Pakistan, however, even before the war, it became recognized that programs based largely on motivating women to use contraception was impractical in a male-dominated society where there was little husband and wife communication on the subject of desired family size. Thus plans were made for a number of trained male-female teams to carry out some of the work formerly being done by LFPVs and Lady Organizers. Unfortunately, however, this new program became one of the first casualties of the war.

Efforts to continue the program in Bangladesh after the war were hampered by residual sentiments against any program that had begun under the former government, and an effective effort to launch a program of family planning motivation has yet to be organized.

SOURCES

OF

INFORMATION

China - The Barefoot Doctor

INTRODUCTION

It has been argued that there can be no truly effective program of health improvement in the developing world unless it is a part of an overall revolution in the political and governmental process by which the resources within that society are distributed. China provides one example of a country that has been able to bring about radical improvements in the health and welfare of the vast majority of its people through wide ranged social change.

DESCRIPTION

OF PROGRAM

The history of the introduction of modern health care in China, up to 1949, was much like that of most other developing countries. The system was drastically changed, however, when the Communist Government came to power in that year. In summary, the health care system in pre-1949 China was curative oriented, urban based and dependent on highly qualified private doctors to deliver health care services. The majority of the people, rural and poverty stricken, had no access to benefits from modern medicine.

With the Chinese Communists takeover in 1949, a number of radical changes in the structure of the society took place. The major goal of the new government was to develop ways by which financial and welfare benefits could be equally distributed among the people, approximately 90% of whom lived in the countryside. The expansion of health services was given strong emphasis. It was not until 1956, however, when agricultural development was stressed rather than urban centered industrial development, that total commitment was made to rural health care. To protect manpower for agriculture, the government took extreme measures to expand existing rural health programs and to create new ones. By 1958 the commune* had emerged as the cornerstone for implementing the economic policies of agricultural development. Decision making became decentralized and local health units became responsible for the health care in their surrounding areas. In order to staff these health units the Ministry of Health took several important steps. It undertook to enlist the practitioners of traditional medicine, transferred urban medical personnel to serve on mobile medical teams in rural areas and created a new type of medical auxiliary - peasants trained during slack agricultural seasons to provide simple curative and preventive health services to their fellow workers.

* A commune is an economic, social and political unit in which 10,000 - 60,000 people live. It is collectively owned and run by the people who live there. It organizes agriculture and other production but also caters to the educational, medical and cultural needs of its inhabitants. Communes are composed of 5 to 20 production brigades of 2,000 - 6,500 people per brigade. The brigades are divided into production teams of which there are 60 - 300 per commune, consisting of 250 - 700 people. Production teams are often the same as a single village.

With Chairman Mao's famous "June 26" (1965) directive - "in health to place stress on the countryside" rural health programs were instituted in unprecedented dimensions. As a result of that directive, tens of thousands of city workers joined rural mobile medical teams, a massive program was set to train "barefoot doctors", and an elaborate network of health care was established, with the commune as its focus. In addition, the army took a new active role, serving as the model for all medical and health work, among civilians as well as the military.

Barefoot Doctors - There are an estimated 750,000 - 1,000,000 "barefoot doctors" in China who make up the central core of health services at the brigade and production team level. These workers, selected by the members of the commune, generally receive three to six months initial training, followed by continuous on-the-job education. They usually have regular assignments in agriculture or similar productions in the field and care for their fellow workers as needed. The "barefoot doctor" is responsible for treating "light diseases" of his comrades: minor injuries, gastrointestinal illness, colds and bronchitis. He also administers immunizations and supervises the collection, treatment and utilization of human excreta for utilization as fertilizer. He is supervised in his work by production-team health aides, who are responsible for the overall production of the commune.

While his central responsibilities are in the areas of preventive health care, he does have at his disposal about fifty different modern and traditional pharmaceuticals for treating basic illnesses. Individual commune members pay a minimum annual fee (about one day's salary) for medical expenses and additional support comes from special local or brigade funds.

The "barefoot doctor", while by far the most common health worker in China, has a number of other health personnel to whom he can refer his more complicated cases. Each commune has its own hospital staffed by physicians trained in either western or traditional Chinese medicine. Likewise, there are a number of other workers, including family planning workers, midwives, and sanitarians who assist him in improving the environment for health at the local level.

EVALUATION

Evaluation about the actual effectiveness of barefoot doctors has been hampered by the lack of information coming from China. However, there seems to be little doubt on the part of Westerners who have had the opportunity to observe health care in China that the grass-roots approach to health service has had an impressive effect upon eliminating epidemics, organizing immunization programs, improving environmental conditions and spreading the concept of family planning.

COMMENTS

While one of the reasons why China has been successful in launching a rural health program capable of effectively meeting the needs of a great majority of its people has been its well developed political structure which reaches down from Chairman Mao to every hamlet, perhaps the underlying factor in its success has been the priority which the Chinese government has given to health improvement in its overall scheme of national development. China has never questioned the need for health as a major component for modernization and has made investments in health care as a route to improvement in their overall agricultural and industrial production.

SOURCES

OF

There are few sources of information about health care from within China itself. If the reader is interested in more detail about their health system than this brief description provided, he is advised to read either:

ADDITIONAL

INFORMATION

Health Care in China - An Introduction
Susan B. Rifkin, Secretary - China Health Care Study Group 1974
Christian Medical Commission
1501 Route de Ferney
Geneva, Switzerland

or

... Away with all Pests
J. Horn M.D.
Paul Hamlyn, London 1969
(Dr. Horn is a British physician who worked for fifteen years in China)

or

The Delivery of Medical Care in China
Victor W and Ruth Sidel
Scientific American, April 1974, Vol. 230, No. 4

15.

Guatemala - Health Care Extenders

BACKGROUND

The "Doctor Shortage" in developing countries has two causes - an inadequate number of trained physicians and the unequal distribution of existing physicians throughout the country - the majority of doctors choosing to practice in the relative comfort and medical sophistication of urban areas. In Guatemala, the government is developing a program for rural health care which will use a variety of health workers, including health promoters, native midwives, auxiliary nurses and rural health technicians to extend the reach of health services down to the level of the village, with only the minimum need for highly trained, highly paid physicians.

DESCRIPTION

OF PROGRAM

Early in 1971, Guatemala's Ministry of Public Health and Social Assistance began a program intended to improve the level of health care available to rural peoples. The plan envisaged a four-level system of care using health promoters and native midwives at the community level (level 1) and at the level of the health post (level 2) using rural health technicians and auxiliary nurses to provide preventative, promotive and simple curative services. Levels 3 and 4 were to be made up of a regional and specialty care service using doctors and other highly trained health professionals to treat patients referred from lower levels in the system.

Level 1

Health Promoters - These community health workers are modeled after the health promoters at the Behrhorst Clinic in Chimaltenango. (See "Health Promoters - Village Health Entrepreneurs"). Communities are invited to provide a volunteer for a one month training program conducted by a doctor and a nurse, emphasizing public health, sanitation, nutrition and treatment of the most common, most easily diagnosed diseases such as worms, skin infections, and diarrhea. After completing their training, health promoters return to their own communities to work under the supervision of their training team.

Native Midwives - Over 66% of all births in Guatemala are attended by local midwives. These women, who have considerable status in their communities, are invited to a special three week training program at a local hospital. Food and lodging are provided and upon completion of the course each midwife is presented with a bag containing instruments, dressings and antiseptics. Periodic supervisory visits are made by the doctor/nurse training team and midwives are encouraged to refer to the local health center or hospital any case in which complications are present or expected. The principal objective of this Native Midwife program is to significantly decrease Guatemala's relatively high maternal mortality rate of 2/1000 live births.

Level 2

Auxiliary Nurses - These are the most numerous health personnel in Guatemala, making up the backbone of the existing rural health service, single-handedly staffing the country's 329 health posts.

Auxiliary nurses receive 14 months of training at hospital associated schools. Their curriculum presently leans heavily towards hospital care but is being revised to give more emphasis to rural public health and preventive medicine.

The Rural Health Technician - These paramedical workers are recruited from the provinces where they will eventually be assigned. The community, through local leaders, participates in the selection process, with final selection being done by the staff of the training institute based on criteria of personality, intelligence and motivation. All trainees must have completed at least 9 years of formal education and at the completion of their two years of training receive the equivalent of a high school degree.

The training program, carried out at a training institute located in the rural part of the country, prepares rural health technicians to improve health in its widest sense, and not to practice medicine in its restrictive curative sense. The curriculum includes topics in environment and public health, with only 17% of the courses being devoted to curative medicine. Almost 70% of the instruction takes place in field settings, with second year trainees acting as instructors to the first-year students.

After completion of the training program, the newly graduated rural health technician is assigned to a health post as near as possible to his home. Together with an auxiliary nurse, he is responsible to provide care to 6 - 10 villages with a total population of about 9000 people, giving emphasis to promotive and preventive health services. Each RHT is expected to be at the health post no more than one third of his time, the remainder being spent traveling through his area visiting village health promoters and midwives and providing preventive and curative care. Each RHT is provided a motorcycle or horse for access into remote villages. Included in his medical supply kit contents are a number of basic drugs and contraceptives (condoms and pills) to be used in promoting family planning.

Activities of rural health technicians are supervised on two levels: radio and telephone calls to regional hospitals and visits to the health posts by a supervisory team of a doctor and nurse.

After serving a mandatory four years in rural areas rural health technicians will be eligible to enter the National University as medical students.

EVALUATION

The first group of rural health technicians in Guatemala has just completed their training and been assigned to their health posts, thus it is premature to attempt to evaluate their effect upon the health of rural peoples in Guatemala. A complete evaluation of the entire health extenders program has been designed, however, which will measure health indicators, especially for maternal and child health care, in four representative villages. Morbidity and mortality statistics, nutritional status, sanitation, family planning acceptance and community action for health will be measured at the

start of the study and each year for six years during the program.

One of the objectives of the Guatemala government has been to reduce the cost of delivering health services to rural areas. Preliminary analyses of the cost of the health extender program are available. As the table below indicates there is a very wide discrepancy in the cost of training and fielding various health workers. For example, it costs ten times as much to train a physician as a rural health technician. The question must be asked whether, given the sets of health problems in any rural setting in a developing country, a highly trained physician is ten times more effective than a rural health technician who has been trained to focus his attention on a limited number of specific curative and preventive health problems of rural people. While this evaluation must await more data from the field, preliminary indications would be that the use of paramedical personnel is an economical way to extend basic health services to a broad range of the population.

Cost of Training and Maintaining Health Workers in Guatemala

	Training Period	Training Costs (\$)	Salary (\$)
Physician	84 mos.	19,150	400 mo. (part time)
Rural Health Technician	20 mos.	1,920	160 mo. (full time)
Auxiliary	14 mos.	800	120 mo.
Health Promoter	1 mo.	65	0 *
Midwife	.75 mo.	30	0 *

* Health Promoters and Native Midwives are paid by the individuals in their communities for the specific services they perform, and receive no direct payment from the government for their work.

COMMENTS

Although few Guatemalan physicians are eager to practice in rural areas there was some question of how the medical community would accept the concept of non-physicians performing the functions which are ordinarily reserved for those with medical training. This question has not arisen as a problem, however, mainly due to the fact that by law the rural health technicians can work only in rural areas and therefore pose no threat to the medical establishment and their professional and economic interests.

One of the unique and potentially most valuable aspects of the rural health technician program is the eligibility of the RHT for medical school after he has completed four years of work in the rural areas. Combined with a vigorous program of recruitment on the part of the medical school, as well as adjustment of the curriculum to meet the peculiar needs of students with considerable practical health experience but perhaps deficient in academic qualifications, this program could, in the long run prove to be one of the most beneficial aspects of the program. The question which remains, however, is whether rural youth trained in rural health care will upon completion of medical school return to serve their rural communities or whether they like most of the other doctors in the country will seek out the comforts of the cities.

SOURCES

OF

Dr. Alberto Viau
Ministry of Public Health and Social Assistance
Guatemala, Central America

ADDITIONAL

INFORMATION

Navajo Indians (U.S.) - Traditional Healers as Mental Health Workers

BACKGROUND

People's perceptions of illness, their beliefs and attitudes about its cause and the pathways they follow to receive care are to one extent or another determined by their culture. The conflicts which arise when a new set of concepts of disease and a new set of health services are introduced into a society which is in the process of modernization can be a cause of anxiety and mental disturbance among those who have medical need. Among the Navajo Indians of South-western United States, traditional healers (known as medicine men or singers) are being used to help close that cultural gap between traditional and modern health care.

DESCRIPTION

OF
PROGRAM

The Indian Health Service (IHS) of the Public Health Service, which has responsibility for the provision of health services to American Indians, has recognized the importance of understanding the traditional health systems of the Indians they serve and has learned to identify certain categories of disease for which traditional care proves more effective than modern. Mental illness is a premier example of such an illness which often responds much more favorably to treatment by Indian practitioners than to care by Public Health Service physicians.

At the IHS Hospital on the Navajo Indian Reservation at Rough Rock, Arizona a program has been begun to enlist the traditional Navajo healer, the singer, into the treatment of patients with psychological problems. Initially, singers who were serving the community in traditional ways were identified and approached to determine their willingness to work cooperatively with the hospital. A working arrangement was then developed with a number of singers by which physicians from the hospital referred patients to them for treatment of specific disturbances. Joint therapy was practiced in some cases and in others the patient was turned over to the singer for exclusive care. Singers were in turn encouraged to refer their problem cases to the Hospital for cooperative treatment.

Having realized the importance of the singer's role in the traditional Navajo society and the fact that very few of the younger members of the tribe, being brought up in a culture that was an amalgam of the old and the new, were selecting to learn to become singers, the Indian Health Service began a program to prepare youths to carry out the important role as Navajo healer. A number of famous old singers were recruited to teach their elaborate chants and curing ceremonies to twelve young men who had selected to learn the art of traditional medicine. The training program for singers, which included many of the aspects of modern medicine, was designed to prepare the young men to recognize and deal with many of the psychological problems facing the people of the tribe. At the completion of the training, the singers work with the IHS health professionals, both at the hospital and in the community, to bridge the canyon between the Indian and non-Indian approaches to the prevention and treatment of mental illness.

Navajo Indians - Traditional Healers...2

EVALUATION

This program, which represents an innovative approach to providing health services and a departure from the usual way that modern trained physicians view health programs, has demonstrated moderately successfully that it is possible to combine elements of two different systems of health care to bring benefit to the sick.

While there has been some variance in the quality and enthusiasm of those who have received training as singers in this program, there are indications that the concept of the traditional healer trained for both systems of care can be a valuable one. One specific area where these new singers have proven valuable has been in assisting Navajo Vietnam veterans to readjust to life among their fellow tribesmen after having spent a number of years in the white man's culture.

COMMENTS

More information and followup on the program is being sought and will be supplied when available.

Central America and Iran - Mobile Health Teams

BACKGROUND

Widely dispersed rural populations, especially in pastoral areas, present special problems in health delivery. Static health centers cannot usually be set up in the number that would be required to meet health needs of these populations, particularly if these people are subject to seasonal migration. One approach to meeting these problems, which has been tried in such diverse settings as Central America and Iran is to bring health services to the people through mobile health teams.

DESCRIPTION

OF PROGRAM

Central America and Panama - In 1962 a program was inaugurated by the Organization of Central American States (ODECA) to bring basic medical care and preventive medicine services to more than two million people living in the rural areas of the five countries of Central America and Panama. In order to meet this goal, plans were made to provide 60 mobile health units which would visit 440 rural communities weekly to provide health services and organize local communities for self-help projects.

Each mobile unit which consisted of a four wheel drive jeep vehicle equipped with special compartments for medicines and supplies and space for suspended stretchers, was staffed with a physician, a nurse or nurse's aid and a sanitary inspector who also served as driver. While initially care was delivered from the vehicle, communities were encouraged to begin self-help projects to build their own fixed health facilities. Each mobile unit operated on a fixed itinerary visiting each village at the same time each week.

Basic medical services provided by the mobile unit included: treatment of the most common illnesses, vaccinations, milk powder for undernourished pre-school children and expectant and nursing mothers, health education and sanitation improvement. One of the major objectives of this program is to promote self-help community action for rural modernization and the development of permanent and responsible local groups to take leadership in improving living conditions within their communities.

Patients are requested to donate a small amount of money for medical services and for drugs they receive. The amounts collected remain within the communities under the control of the local communities and are used for community development projects.

Iran - On January 21, 1974, the Shah of Iran made the declaration that "all Iranians were to have the benefits of medical care". The immense problem of mustering resources to meet the health needs of Iran's 54,000 villages was to be met in a unique fashion - the formation of a Health Corps Organization. The underlying methodology of the Health Corps was to be that graduates of medical schools and allied professions, together with high school graduates, on entering the armed forces for their two years of obligatory military service were to spend 18 months of this period in the villages, providing health and medical care in the most economical and practical manner.

Central America & Iran - Mobile Health Teams...?

The mobile clinics themselves in the period 1965 - 1969 were responsible for the following activities:

Outpatient Visits	13,091,703
Hospital Referrals	42,216
Vaccinations	6,148,107
Clinics Constructed	216
Safe Water Supplies	13,409

It would appear that, by any standards, these accomplishments would have to be considered an outstanding beginning effort to meet the health needs of a widely dispersed rural population totalling over 15 million.

COMMENTS

Mobile health units, both for general health care and for special health problems such as tuberculosis, smallpox, and family planning, have been tried in a number of other places besides the ones mentioned in this review. While the degree of success of these operations has varied, some principles of operation for success have emerged including:

- .The need for a firm adherence to a schedule of regular visits.
- .The importance of carefully planning and equipping units with everything that is likely to be required in the field.
- .The necessity of local residents to be trained to work with the mobile teams.
- .The value of community involvement for health projects and building of more permanent facilities for their own health care.

There are a number of problems associated with mobile units, such as maintenance of vehicles and seasonal access capabilities to villages. Cost is also a consideration - the annual cost of fielding one mobile unit in Central America for instance, was \$22,000 (a cost supported by AID assistance). How would the cost compare with the building of simple permanent structures staffed by local residents trained in basic preventive and curative health care in each village now served by the mobile unit? Which would be more effective in improving the health of the people in those villages? These questions have not been satisfactorily answered, and until they are, mobile health units should continue to be considered among the alternative approaches considered for bringing health care to as many rural peoples as possible.

Mobile health teams appear to play an important function in the early stages of a national rural health program. They bring health services to areas that have had them before increasing community awareness of their health problems and their capability to do something about them. The result of this is often community action to procure their own health facilities and local persons to be trained in basic health services. It is possible however, that once interest in more permanent types of health care delivery has been generated at the local level, mobile health units lose some of their importance and usefulness.

Central America & Iran - Mobile Health Teams...3

Each year the Health Corps would have available to it 400 young doctors and over 1000 high school graduates.

Even with the manpower resources it could draw upon, the Health Corps faced a serious challenge in meeting the Shah's declaration of "health care for all". One approach to meeting the challenge was to organize their professional and non-professional workers into mobile teams or health units. Each unit was led by a newly-graduated physician assisted by two or three high school graduates and a driver. Each unit, although stationed in one village, serves a population of 10,000 to 20,000 living in some 30 to 40 villages.

The duties of the Health Unit are not confined purely to medical matters but also include activities of a preventive nature, including vaccinating, improvement of environmental conditions, and extensive health education.

Each ten to twelve mobile health teams are connected to a Base Center which serves as a referral center for diagnosis and treatment of illnesses beyond the capability of the field team to effectively manage.

EVALUATION

Central America and Panama - Regularly scheduled visits of mobile health teams have proved to be an accepted and effective way to bring health services to rural areas which have no other access to care. While the amount of time that the health team spends in any one village is somewhat limited, the coverage provided is greatly increased - with each mobile team being able to visit an average of over 7 rural communities a week.

Perhaps one of the most useful products of the program has been the growing enthusiasm of the communities reached for self-help programs and the willingness to give time, labor and materials to improving their lives. In the first three years of operation the mobile rural health teams were responsible for instituting a wide variety of projects such as community water supply systems, school buildings, road repair, home garden projects, and construction of permanent health centers.

Iran - Mobile health units are only one component of a total "health revolution" in Iran. The Health Corps which makes up the backbone of that revolution has, according to many observers, proven to be a model with merit for replication in other developing countries facing similar problems in health care.

Central America & Iran - Mobile Health Teams...4

SOURCES

Government of Iran
Ministry of Health
Division of Evaluation and Research
Taheran, Iran

OF

ADDITIONAL

Medical Director
Organization of Central American States
El Savidor
San Savidor, Central America

INFORMATION:

See Appendix A for another evaluation of the Central American program.

25

Haiti - The Triangle Project

BACKGROUND

An often stated long range goal of a family planning program is the improvement of quality of life. Such a goal, however, is an unrealistic one for a family planning program alone. Since family size, nutrition, health, and economic status are completely interrelated and interdependent, an attack on one will bring only limited and often short-lived change. To have a far-reaching impact, a family planning program must be a part of a wider effort. The Triangle Project in Haiti, an interdisciplinary field laboratory for community health and family planning, is an example of a program that attempts to weave family planning into the broader fabric of general improvement of life.

DESCRIPTION

OF

PROGRAM

The Triangle Project, named after the triangular target area delineated by three major towns on the Plain de Cul de Sac area of central Haiti, integrates a number of formerly uncoordinated indigenous community health resources into the formal health structure in a way that will bring comprehensive services to rural peoples.

Established by Haiti's Center for Family Hygiene, the program has as its objective the integration of family planning services into an effective program of community health improvement. To accomplish this objective, efforts were carried out to fuse a number of different community resources into a unified system of services, including:

Formal Health Resources --

Existing health centers

Medical residents fulfilling government service

Nurses

Auxiliaries

Consulting gynecologist and midwife

Other Formal Resources--

Agronomist (Projects Assistant Director)

Agricultural extension agents

Paraprofessionals --

Community workers

Indigenous or Local Resources --

Political leaders

Village midwives

Local spiritualist/healers

Existing Health Services

Health centers had been in operation at each of the three focal communities of this "triangle" at the onset of the project. These facilities, now staffed by doctors (medical residents), nurses and auxiliaries residing in the community, focus their attention on the provision of first aid, immunization and routine medical service. Family planning services are provided by a mobile team which visits the village on a regular weekly basis.

1) Community Workers

From its establishment, the backbone of the Triangle Project has been the community workers who serve as the primary liaison between the community and those who are providing services.

Community workers, male and female, ages 18 - 45, are recruited from their own home regions to undergo an intensive one month training program, orienting them towards the goals and operations of its program and preparing them to recognize and treat the most common simple illnesses they will encounter when they return to their villages. In addition, they are taught techniques for community organization and education and are introduced to concepts of family planning outreach.

Upon returning to their homes at the completion of training, the community worker receives on-the-job experience and continued supervision and support at the hands of a team made up of nurses, doctors, auxiliaries, sanitarian, agronomist and community organizers. In addition, each community worker attends a monthly meeting with all members of their zone team (other community workers and their supervisors) during which they discuss their progress and problems and receive further instructions and, importantly, motivation.

Although the community health worker's role is very broad, its major focus is on the health of mothers and small children. Each worker makes a daily round of his/her area, visiting pregnant and post-partum women and their children. They discuss with mothers the role of immunization, nutrition and mother's care in raising healthy children and provide the mother with treatment and reassurance in event of minor illness and facilitate their referral to proper medical care in the event of more serious problems. Family planning information and motivation is also stressed in these home visits and in the radio listening groups organized around the biweekly "Radio Doctor" program. Community workers follow up on women who have accepted family planning services from the mobile teams.

An important part of the community worker's job is to stimulate the community to seek joint solutions to their problems. In partnership with agricultural extension workers, sanitarians, and others they attempt to assist the communities in planning and financing projects to improve living conditions, including such things as planning gardens, cleaning wells, building irrigation systems, or setting up handicraft centers.

The community worker's role in the treatment of illness has been diminished with the arrival of the medical resident in the program - a favorable development which afforded them more time and opportunity to concentrate their attention on the other important considerations in improving the environment for health.

2) Medical Residents

All medical residents in Haiti must fulfill a mandatory two years of service to the government. One way of satisfying this requirement which has recently been approved is service in this Triangle Project. It is anticipated that these medical residents will be able to apply their medical knowledge to the rural community in a way that will augment the services already available and to give an increasing number of young doctors an appreciation for the health needs of rural communities.

3) Political Leaders

Any effort to involve a community in a development project soon becomes a political undertaking. The Triangle Project recognizing this has made special efforts to educate the "Chef de Section" or administrative heads of the district in the role that they can play in the development of projects such as sanitary improvement and water supply. This course consists of twelve sessions during which they are given an appreciation of the overview of the total project and the means by which they might contribute to its success.

4) Agricultural Extension Workers

The agricultural advisors in the area act as advisors and co-organizers of community development projects with the community workers.

EVALUATION

A specific evaluation design has been built into the Triangle Project, but unfortunately is not available as of this writing.

Subjective information is available that the project is functioning with sustained interest on the part of the community as well as the health staff. Interesting spin offs of the community development emphasis of the program have included such diverse activities as the raising of goats, planting of fruit trees, planting of new crops and the establishment of a tomato paste business.

COMMENTS

An important question is whether a health worker whose responsibilities include the provision of a broad spectrum of health and community services is a better motivator for family planning than a worker whose sole purpose is to educate and activate the use of family planning. Based on the often heard premise that women must be able to perceive an improvement in the health and well-being of their children and an associated increased probability of their surviving to adulthood before they will fully accept the idea of family limitation, it would follow that the general health worker would be the more effective family planning agent. It is hoped that this interesting project will produce data that will allow this hypothesis to be tested.

SOURCES OF
ADDITIONAL
INFORMATION

Dr. Ary Bordes, Director
Centre D'Hygiene Familiale
10 Premiere Impasse Lavaud
Boite Postale 430
Port-au-Prince, Haiti

INDONESIA - DANA SEHAT - A COMMUNITY HEALTH INSURANCE SCHEME

BACKGROUND

The improvement of existing health service and the delivery of health care to populations which previously had none usually involves an added expenditure to a national health budget - an expenditure which most developing countries cannot readily afford. One way to "absorb" the additional costs associated with the provision of increased health services is for communities themselves to pay for the services which they receive. One experiment in community supported health care is being carried out in Indonesia - the Dana Sehat or Community Health Insurance Scheme in Solo, Central Java.

DESCRIPTION

OF PROGRAM

The annual health expenditure in Indonesia is approximately \$.32 per capita. It is not surprising that, with this level of available resources, health services, even in urban areas, are severely limited. Solo, a city of about 1/2 million, is typical of urban centers in Indonesia in that it contains large segments of population that are economically underprivileged and neglected in health care, environmental sanitation and social services.

In January, 1971, the Panti Walujo Hospital, a private hospital situated on the western side of Solo, recognizing the need for community development and health improvement and its own severe financial restriction in attempting to meet these needs, introduced the concept of Dana Sehat (literally translated as "Health Fund").

According to the plan of Dana Sehat, each individual in the community pays a monthly subscription fee of Rp. 5 (about 1.2 cents) for which he becomes entitled to free outpatient care and medicines at the Panti Walujo Hospital. The program, as first initiated in two small sub-hamlets, each with a population of slightly less than 100 families, was divided into three stages:

- Stage I - Trial phase of six months followed by evaluation. During this phase only hospital based curative services were provided.
- Stage II - Extension of activities to include preventive measures, health and nutrition education, and family planning services delivered through a home visit extension program.
- Stage III - Spread of scheme to other sub-hamlets and study of the feasibility of providing more extensive care, including hospital care and dental services.

Stage I - A Preliminary Evaluation

The results obtained during the trial phase surpassed the expectations of the program's administrators. During the first four months it was evident that the members understood the aim of the scheme and that it was financially realistic. Members' subscription rates (approximately 1/2% of

their average monthly income) were adequate to cover the full expenses of services and drugs which the members received at the hospital. It is notable, however, that during a month only 4 - 5% of the members made use of the hospital services, indicating either lower than anticipated illness rates, or an underutilization of services, accounting perhaps in part, for the fact that the project was able also to operate without a financial deficit.

In addition, during Stage I an opinion survey, obtained by home visits and interviews, revealed general satisfaction with the scheme on the part of the users as well as the providers of the services. Based on these initial positive findings, the planned trial period of six months was reduced to four months.

Stage II - Extension of Preventive Services

A decision was made that the preventive health measures of the second phase of the project be concentrated on the under-fives, who although representing only 12% of the population, carry the highest risk of disease and death. The approach to child health care used was home visits by midwives, using a child growth chart to regularly measure and weigh each child and meanwhile provide mothers with information on nutrition, family planning and child rearing. The growth chart, for which an additional fee of 10 Rp. was charged and willingly paid, provided the "ticket" by which the home visiting could be provided on a regular basis under natural and acceptable conditions.

Stage III - Increased Breadth and Scope of Services

The program for the third stage was developed by the members themselves, who expressed the desire for a dental health service. Arrangements were made for members to have access to dental services at a cost of 25 Rp. per extraction, a cost comparing favorably with the 200 Rp. charged by private dentists.

During this stage an additional two sub-hamlets were enlisted in the insurance scheme.

EVALUATION

A more complete evaluation of the Dana Sehat was carried out after it had been in operation for 18 months. This evaluation, entailing observations, interviews and outpatient data collection, was intended to assess member satisfaction with the scheme, its financial viability and its effectiveness in improving the health status of the community.

As Table I summarizes, survey results indicate that the vast majority of members of the Dana Sehat view it to be economical and its service of high quality.

24

TABLE I - RESULTS OF OPINION SURVEY OF DANA SEHAT

<u>Number of Respondents*</u>	<u>Economical</u>		<u>Quality</u>	
	<u>Positive</u>	<u>Negative</u>	<u>Positive</u>	<u>Negative</u>
204 (from 3 sub-hamlets)	179 (87.7%)	25 (12.3%)	186 (91.1%)	18 (9.9%)

*Total number of member families = 253

The diagnoses made in the approximately 1000 outpatient visits to the hospital during the first 18 months of the scheme were:

Common Cold	27%
Diarrhea and digestive complaints	13
Respiratory complaints	16
Skin Disease	10
Other	32½
No medical indication	1½
	<u>100%</u>

Interesting to note is the small percentage (1½%) of visits to the clinic for which there was no apparent medical indication - a figure which tends to indicate that services were not being overused simply because they were prepaid. This usage pattern is further documented by the fact that after 18 months of operation still only 4 - 5% of members were using the health services each month - perhaps, in fact, indicating a pattern of underutilization.

At the onset of the program it was estimated that total receipts for the first 18 months of operations would be Rp. 69,000 (\$168.00). The amount actually collected was Rp. 72,666 (\$175.00), indicating that collection of fees, which took place through heads of the local sub-hamlets, was carried out extremely effectively. The actual cost of the services and drugs provided to members was Rp. 62,920 (\$151.00), resulting in a surplus in the Dana Sehat treasury. As was also found, as in the initial evaluation, members paid a relatively small percentage of their monthly incomes (½ - 2½%, a figure varying with income and number of individuals in the family) for membership in the program.

Unfortunately, no data is available on the effectiveness of the preventive health scheme launched in phase two of the project. Information about the number of home visits carried out, the types and varieties of services provided and their impact on health would appear to be a minimum set of data that would be essential to evaluating this aspect of the program and is not available at the moment.

The third stage of the scheme can be judged to be only a partial success. During the six months that dental services were available, only 24 subscribers took advantage of them - a figure undoubtedly not justifying a special dental program. During this stage, two additional

communities were brought under coverage in the scheme. The level of cooperation of these new communities, however, did not equal that of the first subhamlets recruited into the Dana Sehat, perhaps accounted for in some degree by the fact that the newer subscribers lived at greater distances from the hospital and were, in general, of lower income than the initial group.

COMMENTS

At this stage in its history, it is difficult to adequately and fairly assess the successes and shortcomings of the Dana Sehat experiment. Several preliminary conclusions appear to emerge from the available data, however, including the facts that:

- . Community members in Indonesia are willing to contribute to the cost of health services that they receive.
- . Cost of providing basic health services can be scaled to fit the capability of the client to pay.
- . The involvement of a community in paying for its health services can encourage the participation of that community in the setting of goals and planning for its own health services.
- . The concept of health insurance or prepayment is one that can be introduced effectively in a setting where it may not be an experienced concept.

A question that has not been answered by the Dana Sehat project, up to this point, is whether it is possible to improve the health of a community by improving its access to preventive and curative health services.

- . What effect has the scheme had upon the mortality and morbidity rates of the community it serves?
- . What difference did the curative and preventive treatments make? Of those treated at the hospital, how many would have gotten better without treatment? Of the services provided by home visitors, which have had an effect upon the health status of the under-fives they were designed to serve?
- . In what ways is the health and well-being of the people of Solo better off now than it was before this program was begun?

Finally, the question must be asked, to what extent is that which is good in the project expandable to other localities and other countries? Does the implementation of this project owe its success to the unique type of leadership available at the Panti Walujo hospital? Could it be repeated in other places where there is not an established health service with the same level of community awareness and the same leadership? Would the financial and administrative structure of the Dana Sehat function in rural Indonesia? Would the concept of the sick in a community being supported by the healthy be received in another country as well as it has been in Indonesia?

SOURCES OF
ADDITIONAL
INFORMATION

Dr. Gunawan Nugroho
Solo, Central
Jl. Brigjen, Soediarso 484,8
Solo
Indonesia

Republic of Vietnam - Village Health Stations

BACKGROUND

Vietnam - the scene of much chaos and turmoil over the past decades - faces many of the challenges in providing health care to its predominantly rural peasant population as other developing countries. The rural health program of the central Department of Health has for many years attempted to meet this challenge by the establishment of an infrastructure of village or hamlet health stations, designed to provide simple curative medical care.

DESCRIPTION

OF PROGRAM

The rural health program in South Vietnam, as operating in 1964, was based on the premise that local persons could be trained to provide medicines and treatment for the most common afflictions of rural people. According to the plan, the government would support the establishment and activities of a health station for any locality with 500 or more people. The health station itself, which was provided by the community was to be simple - in many cases simply a corner of a school house or part of a private home.

The health station was manned by a health worker - usually selected from the local area. Each health worker, after successfully completing a two month training program conducted by the Department of Health, was issued a standard kit of drugs and equipment comprised of about ten basic drugs, a first aid and treatment manual, record book and supply order forms. This kit - costing about 50 dollars to supply - represents a compromise among elements of cost, the training of the health worker and the health problems prevalent.

With the training and equipment he has available to him, the health worker is able to recognize and treat a broad range of problems including burns, wounds, sprains, skin infections, diarrhea and uncomplicated injuries. In his work, the health worker was able to rely heavily on the treatment manual that is part of his kit. For each condition he is likely to encounter, there is outlined in simple language a description of the symptoms, cause, treatment and referral procedures to be followed. Cases beyond their scope are referred to district health nurses who act as supervisors for the village health workers.

Health workers received a salary of 600 piasters (about \$8 U.S.) but is expected to augment his salary (approximately comparable to that of an unskilled plantation worker) by payments from those he serves.

The drugs contained in the health worker's kit and their uses are:

Chloroquine	- Malaria
Aureomycin ointment	- Eye Infections
Sulfathiazole	- Skin, Ear, Throat, Lung Infections
Aspirin	- Aches, Pains, Fever
Benzyl benzoate	- Scabies
Bismuth and Morphine tablets	- Diarrhea
Brown's mixture	- Cough
Vitamins and Iron	- Anemia and Fatigue
Piperazine tartrate	- Intestinal Worms
Sulfadiazine ointment	- Skin Infections
Assorted First Aid Supplies	- Injuries

Supplies could be reordered from the Department of Health as needed.

EVALUATION

The decades of war have played havoc with any attempts to evaluate development projects in Vietnam. Little is known of the continued efforts of the village health stations and their effects upon the health of the Vietnamese. Nor is there any information about the continued role that the health worker is playing. Interesting to learn would be the roles that the health workers have played since the government support for the program has diminished in recent years. Perhaps, based on previous training and experience and with the possibility of obtaining supplies from private sources, they are continuing to provide simple medical care in villages on a private enterprise basis.

COMMENTS

One of the most severe limiting factors on a government supported village health program is cost. Although the cost of providing a village health worker and his "kit" may seem rather small at first appearance, the cost when multiplied by the number of villages and hamlets in a country would readily make such a nation wide program prohibitive. A more cost/effective way for this type of care to be delivered might be for the drugs to be purchased from the health worker by the patient and the health worker - in turn - paying for the drugs which he is supplied by the Department of Health.

SOURCES OF ADDITIONAL INFORMATION

Willard H. Boynton, M.D., M.P.H.
Office of Population
USAID
Washington, D.C. 20523

The Philippines - "Botica Sa Baryo" - A Cooperative Pharmacy Scheme

ACKGROUND

One of the most important outcomes of any development project is the generation of community self-reliance. This is especially true of health programs in developing countries - few of which have adequate resources to meet continued needs of large populations for medical services and drugs. One experiment in self-reliant community health service is the cooperative pharmacy program - "Botica Sa Baryo" - being carried out as part of the Cebu Institute of Medicine, Community Medicine Program in the Philippines.

DESCRIPTION OF PROGRAM

It has been estimated that a large percentage of the total deaths in the Philippines occur to persons who do not have access to modern drugs - even though they may have received some form of medical attention during the course of an illness. For instance, a survey of the 121 municipalities of one province showed that 50% had no pharmacies. Where drug stores do exist, there is often the problem of the sick not having the money to buy the drugs they require. The net result of this "unavailability" of drugs is prolongation of illness, increased need for hospitalization for cases which could have been treated under self care, and, not infrequently, death.

The objective of the "Botica Sa Baryo" is to make appropriate drugs available at low cost whenever and wherever they are needed. The mechanism by which this is carried out is the establishment in each community of a cooperative drugstore.

The first step in organizing a "Botica Sa Baryo" in a community is the presentation of the idea to the local governing council, members of which often have their own tragic experience illustrating the immediate need for access to medicine, usually does not need strong arguments to convince them of the need for the program.

The actual implementation of the program is often more difficult. First, initial capital is required. An adequately stocked drug store requires an initial capital investment of between 30 to 50 dollars. In the Philippines this amount has been raised in a number of ways including household contributions, proceeds from events such as dances, raffles and festivals, and from loans. Regardless of the means of initial capitalization, however, each pharmacy is owned by the cooperative and each member of that cooperative has equal access to its services.

The pharmacy is stocked with a set of basic drugs to treat the most commonly occurring illnesses in a particular community. All drugs are purchased in their most economical form and are sold to members at only a small percentage above their cost. Any profit which the cooperative makes is put into a health fund to be used for special health needs in the community, such as well building and health education materials.

Philippines - Cooperative Pharmacies

Members may buy drugs on credit, but as the success of the project depends on adequate capital to purchase resupplies for the drug-store, regulations are usually put into effect to minimize default. No members are ever refused needed drugs, however, because of their inability to pay.

Ordinarily the "Botica Sa Baryo" provides drugs only to those who have a prescription from a physician. However, the aide assigned to dispense drugs and conduct simple accounting for the Botica can always dispense simple home remedies, first aid and sulfa drugs.

To maintain low costs it is often necessary to educate the medical personnel in the art of prescription and the economical management of an illness. For instance, care is taken to guarantee that the appropriate quantity of drugs are dispensed for a particular illness. Similarly, the medical personnel are encouraged to prescribe the lowest cost drugs that will effectively treat a particular illness.

EVALUATION

The earlier experiences in the 11 communities where the "Botica Sa Baryo" have been established tend to support the feasibility of this type of approach to health care. The cooperatives are reported to be operating effectively and on a sound economic basis. Utilization rates are high and members have learned to allocate a portion of their incomes for drug purchases.

The rate of loss reported due to bad credit has ranged from 8 to 12% - an amount which in most cases has been adequately made up from profits.

COMMENTS

The development of a community cooperative requires as a prerequisite a certain level of community trust and loyalty. It would be of interest to determine whether the same mechanism could be successful in other cultures where concepts of community cooperation may not be as well developed as in the Philippines.

The communities served by the cooperative pharmacies in the Philippines rely on doctors to make initial diagnoses and to prescribe needed drugs. It would be interesting to determine whether the concept of a cooperative drugstore could function in communities which do not have access to a physician. For instance, auxiliaries might be trained to prescribe medications, with minimal medical supervision, using diagnostic and treatment aids such as the protocols currently being used by some health auxiliaries in the U.S.¹

¹ Kamaroff, Anthony L., M.D., et. al. Protocols for Physician Assistants. The New England Journal of Medicine. February 7, 1974. p. 307 - 312.

Philippines - Cooperative Pharmacies

Also worthy of exploration is how the same concept might be brought into effect using existing pharmacies. For instance, would the owner of a drugstore be agreeable to contracting with the community to supply drugs on the same low cost basis using a cooperative funding mechanism. In as much as a "Botica Sa Baryo" would provide serious competition to a regular pharmacy in a community, it could be predicted that the existing network of pharmacies could be motivated to change their methods of operation by the introduction of the plans for cooperative drugstores in the community.

SOURCES OF
ADDITIONAL
INFORMATION

Florentino S. Solon, M.D., M.P.H.
Executive Director
Nutrition Center
Population Center
Foundation Building
South Super Highway
Makati, Rizal
Philippines

Philippines - Barrio Resupply Points

BACKGROUND

Family planning programs throughout the world have encountered difficulties in ensuring continuation in clients use of oral contraceptives. This problem has been especially acute for clinic-based programs serving dispersed populations. In the Philippines, the Population Commission (POPCOM) and such service delivery agencies such as the Institute of Maternal and Child Health have jointly set up a network of barrio (neighborhood) resupply points in an effort to increase access to contraception and to encourage continuation.

DESCRIPTION

OF

PROGRAM

In the Fall of 1974, 1000 Barrio Resupply Points (BRP) were established in 100 municipalities in the Philippines to allow family planning clients to pick up pill supplies at locations close to their homes.

In each site, the Municipal Health Officer, in conjunction with clinic staff, selects a reputable individual or organization to manage the BRP. Examples of the diverse range of managers selected include barrio councils, shopkeepers, women's clubs, school teachers and hilots (traditional midwives).

Each BRP, designed to serve 30 to 40 clients, receives a "basic kit" which contains oral contraceptives and record keeping forms. In addition each worker receives training in the operation of the resupply center from the Municipal Health Officer.

The BRP may be located in the workers homes or shops or in a convenient community building. Workers are paid a dispensing fee of 35 centavos (about 5 cents) by a client for each cycle of pills that she receives, an amount that is generally less than it would cost her to travel to the clinic. As in the clinics, there is no charge for the pills themselves.

In order to obtain pill cycles from a BRP, a woman must be a registered patient at any official family planning clinic and must have been seen for at least one initial and one follow-up visit. At the second or subsequent visit, she obtains a six-coupon card; each coupon good for one cycle of pills at the Barrio Resupply Point. At her first visit to the BRP, she must register as a customer. As a card is good for only six cycles of pills, she must return to the clinic at least twice a year for a new card - during which time a medical checkup is carried out.

Simple but adequate records are kept both at the BRPs and the clinics, allowing clinic personnel to follow-up their patients and minimizing the chance of abusing the system.

EVALUATION

Since the Barrio Resupply Point scheme was launched only a few weeks before this writing, no evaluation data is presently available. However, the record keeping system which is an integral part of the system will allow for subsequent evaluation.

At the clinic, the coupon card is filled out in duplicate. The patient gets the top copy of the card, the coupons of which she later exchanges for pills. The second copy is filed in a folder

42

indicating the BRP at which she will obtain her supplies.

At the BRP a log is kept of all its customers. Next to the customer's name are spaces to indicate the day of the month the customer has obtained her supplies and the number of cycles obtained that month.

Each month a clinic worker visits the BRP and compares the coupon stubs in her file with the BRP log to see which patients have registered with the BRP and which have not. By looking through the log itself, she can see which customers already registered are delinquent in picking up that month's pills. The clinic worker can then follow-up all delinquent patients. This same data will also allow for monthly evaluation of utilization.

The coupons also act as an inventory control mechanism. To restock, the BRP worker must exchange the coupons he or she has collected from the customers for an equal number of pill cycles. If the supply becomes depleted to a greater extent than the coupons indicate, abuse of the system will be evident.

COMMENTS

It is hoped that by making pill supplies available to clinic patients at more convenient locations, pill continuation will be enhanced. However, it will be interesting to see whether the payment of the 35 centavo/cycle dispensing fee will be seen by the patient to be more or less of an obstacle than traveling to the clinic for her supplies. It will also be interesting to see whether this fee will serve as sufficient incentive to the BRP worker to maintain his or her stock.

ADDITIONAL SOURCES OF INFORMATION

Philippines Commission on Population
Population Center Building
South Super Highway
Makati, Rizal
Republic of the Philippines

Thailand and India - "New" Indigenous Practitioners

BACKGROUND

Virtually every society has developed a mechanism to provide for the health needs of its people. In many parts of the world these needs continue to be met by individuals in that society with specialized talents for using traditional practices and medicines to relieve the illness of their fellow man - herbalists, medicine men, bonesetters, spiritualists, midwives, and "traditional physicians". There is emerging, however, an important new class of practitioner - traditional in his role but new in the tools he uses. The examples that follow provide two examples of the types and potential importance of the "New Indigenous Practitioner".

DESCRIPTION

Thailand

In Thailand they are called "injection doctors". Typically they are men, living in or near a business district who devote full time to their occupation. Their training may have come from previous work as an auxiliary or orderly in a health station, hospital or pharmacy or from an apprenticeship with an established "injection doctor".

Normally they practice in the homes of their clients, travelling from village to village on bicycle or perhaps motorbike, if their practice is a successful one. Some own medicine stores in the market, where they also see and treat patients. A few are licensed by the government as "ancient doctors" but most practice outside the law which forbids their practice - a law which is scarcely enforced.

A fee of 5 - 10 baht (25 - 50¢ U.S.) per injection is charged, and many "injection doctors" provide as many as 300 injections per month. It is a rewarding occupation, with most receiving more than a secondary school teacher or even a young district physician - a fact that explains why so many well educated young men eventually take up the trade.

The "injection doctor" is usually paid for his service by the visit, but regular patients may pay at the end of a series of injections. The fee paid includes diagnosis and treatment as well as the medicines used. Fees are often adjusted to meet patient's incomes. At times payment is made in the form of goods such as rice, cakes, or honey, but, in general, cash is preferred.

No prescription system exists in Thailand to restrict the purchase of drugs. "Injection doctors" purchase their supplies in monthly amounts from pharmacies in the provincial capitals - often buying from only 1 or 2 stores and receiving a discount. The "injection doctor" relies on pamphlets from the town pharmacies, health manuals from bookstores, drug instructions written in Thai and, most importantly, on the advice of pharmacists in selecting the drugs that they use. Although few speak English they learn how to identify drugs by their labels.

Among the most common drugs used are sulfa, penicillin, streptomycin, camphor vitrol, vitamins, and glucose - all in their injectable forms. Recently some "injection doctors" have been reported to have added Depo Provera (a long acting injectable contraceptive) to their basic medical kit. Oral medicines are seldom used by the injection doctor -

45

a trait that he shares in common with the Thai "modern doctor".

Typically, when arriving at the patient's house the "injection doctor" asks for boiling water in which to place his needles and syringe. If there is none available he can prepare it with the alcohol burner he carries. The equipment is boiled while he examines the patient and engages in conversation with family and friends who gather to watch. No modern instruments such as thermometers or stethoscopes are ordinarily used; reliance being placed on touch and query in making a diagnosis.

There is little specialization among "injection doctors" and little referral between them. If an illness is unfamiliar or beyond the "injection doctor's" competence he will usually refer the patient to a modern doctor or to a district hospital.

It has been estimated that up to 75% of the rural population of Thailand uses the "injection doctor" for at least part of their medical needs. It has also been estimated that it costs seven to eight times as much for a villager to receive a treatment from an "injection doctor" as from a government health station.

EVALUATION

How effective is the treatment that the "injection doctor" gives? No studies have been conducted on the effectiveness of the treatment that he offers that would allow the question to be answered. Informal observers of the "injection doctor" in Thailand have, however, expressed the opinion that their services are more beneficial than harmful and, at least, better than no medical care at all. Urban physicians, for example, have been known to make use of them when a patient must have a sustained treatment. Likewise, it has been noted that patients arriving at the hospital with appendicitis are often in improved condition as a result of having received an injection of penicillin from the "injection doctor" in conjunction with his referral of the case to the hospital.

There can be little doubt that the "injection doctor" has been successful for one important reason - he fulfills an important need. There are few "modern" health professionals who have the time or the inclination to bring medicine to the level of the people. The "injection doctors" practice medicine on terms that the Thai villager understands and provides a service that no other individuals are currently ready to perform.

DESCRIPTION

India

In India the "new indigenous practitioner" is represented by diversity of practitioners, including Vaids using the Ayurvedic system, Hakims practicing the Unani system, Homeopaths following the Homeopathic system and those using no one system of medicine but borrowing freely from all systems. Regardless of their orientation, the "new indigenous practitioners" share in common their willingness to use modern medicines where they have demonstrated their value or in cases where their clients have begun to demand them.

uk

Studies in two parts of India, Pujab and Kerala, paint a composite picture of the "new indigenous practitioner" as a male with education beyond that of the average villager, many of whom have completed some formal training in either the Ayurvedic or Unani tradition. Nearly all have engaged in some type of apprenticeship - some for as long as five years.

Most practice in the villages in which they were born or close to them, in clinics or offices which have been established for many years. In general, they will treat any condition which is presented, although some decline to treat tuberculosis, cancer and diseases of women. A practitioner may see as many as twenty patients a day, for a fee averaging about 2 - 3 rupees a visit often making the practitioner one of the wealthiest men in his village.

History taking of the patient is with few exceptions limited to chief complaints. Physical examinations which are performed vary, but in some cases "western" instruments such as thermometers, stethoscopes, and ear speculae are used - although not always in the correct manner.

According to Indian law many drugs can not be sold without the prescription of a registered medical practitioner. Nonetheless, most "new indigenous practitioners" are able to procure the drugs which they need through commercial channels. They obtain information about the indications of use of modern medicines and the appropriate dosage from reading materials enclosed with the drug manufacturer or from their contacts with pharmacists. Injections are commonly given, with penicillin alone or in combination with streptomycin being favored.

Fees are most often paid in cash but some practitioners have arrangements for treating their patients on a credit basis.

VALUATION

The "new indigenous practitioner" in India is not a homogenous classification and thus it is difficult to evaluate their effectiveness as a group. They vary from extremely traditional practitioners who make use of aspirin and other simple medications to sophisticated curers who make use of modern instruments, techniques and a wide variety of modern medicines.

What can be said is that "new indigenous practitioners" are common in India and destined to become even more so as more and more people begin to demand modern medicines. Studies have shown that only ten to twenty per cent of rural Indians utilize government health services. (See Appendix C for a description of India's rural health system and reasons for its low utilization). Given the call for modern medicines and the lack of other resources to provide it there is reason to believe that there will be an accelerated evolution of the role of the "new indigenous practitioner" in India and an increased need to study their effectiveness in providing health care.

COMMENTS

The "new indigenous practitioner" represents a valuable resource - up until now unexploited - for expanding the delivery of needed health service to rural peoples. They possess two characteristics which should be especially attractive to anyone planning health services:

- They function within the cultural milieu of the people they serve. The indigenous practitioner is a member of the community he serves, familiar ~~not~~ only with the customs and beliefs of that community but also with the individuals that make it up.

- The practices of the "new indigenous practitioner" are in most cases fully compatible with scientific concepts of illness. The "new indigenous practitioner" has already of his own initiative accepted innovation, and in many cases stands ready to accept additional ideas which have the potential to satisfy his clients and, in turn, improve his own standing among his fellow villagers.

The challenge is to bring this unique resource into the organized health delivery system. To do this, efforts must be made to learn more about their existing methods of operation, methods of bringing their procedures up to date, and supervising their activities. Most importantly, actions must be taken to recognize and legitimize this resource which, regardless of any efforts launched by government to provide modern health services, will undoubtedly remain the primary source of help for many people for years to come.

ADDITIONAL
SOURCES OF
INFORMATION

The information presented in this section has been taken from two excellent studies:

Role of the Indigenous Medicine Practitioner in Two Areas of India - Report of a Study.

Alfred K. Newmann, M.D.

Social Sciences and Medicine, 1971, Vol. 5, pp. 137 - 149

Pergamon Press. London

Thai "Injection Doctors" - Antibiotic Mediators

Clark E. Cunningham

Social Sciences and Medicine, 1970. Vol. 5, pp. 1 - 24

Pergamon Press. London

Correspondence can be made with the authors at the following addresses:

Alfred K. Newmann, M.D.

Head, International Health Program

Division of International Health

School of Public Health

University of California

Los Angeles, California 90024

Clark E. Cunningham

Department of Anthropology

University of Illinois

Urbana, Illinois

Appendix A - An Independent Audit of "Successes" in Health Programs

Reviewing health programs from a distance is much like ordering a bride (or groom) through the mail. The descriptions that you get may sound elegant but you certainly want to reserve final judgement until you have seen the real thing. William and Elizabeth Paddock were able to do what the assembler of this review was not able to do - take an in depth look at two of the Central American health projects reported on here.

While their views may be much more critical than other sets of observers and the issues they focus on different than a health manager might select, their comments do strongly support the notion that illusions are often constructed that obscure the outsider's vision of reality.

Financing a Charity

ABOUT FIFTEEN YEARS AGO Carroll Behrhorst, M.D., was practicing medicine in Winfield, Kansas, a small prairie town near the Oklahoma border. As he reached his midthirties, he faced up to the fact that the town had twenty doctors for 10,000 people. "I felt frustrated. I had studied medicine to help people, but no one's life in Winfield depended on my help."

So Behrhorst began looking around for a change. He saw a notice in a Lutheran paper soliciting the services of an American doctor for Guatemala. Within a short time he and his family of six children had settled there.

The Lutheran Church paid him while he studied three years to procure a license to practice medicine in Guatemala. He would then reopen the clinic and hospital which the Lutherans formerly had operated in Antigua but had had to close for the lack of a doctor.

But Behrhorst, once he had his diploma and license, decided against this. As he told it to me, "I found that the Lutheran mission was not interested in helping the Indians, but only in saving souls¹ and sending back reports to the mission board in St. Louis . . . so I left the Lutherans and began working independently." As a result, the Lutheran clinic and hospital in Antigua which had been designed to help the Indian remained closed.

Behrhorst now moved out on his own to open a clinic in Chimaltenango, a large town with good accessibility and visibility for travelers. It is about half an hour from Guatemala City on the paved Pan American Highway north to the Mexican border via Lake Atitlán, the nation's number one tourist attraction. This is also the main route for tourists who go to see the Indian highland culture, located beyond Chimaltenango. Here Behrhorst has spent the last decade. Most of his patients are Indians from the rural areas.

His clinic was on my list of effective development projects I wanted to visit in Mexico and Central America. In this case my interest had been first aroused because of the great number of reports and newspaper articles which had been written about him by traveling American doctors and journalists. In these he was consistently praised; in fact, "adulatory" is the only adjective.

In an official Lutheran publication, Behrhorst was described as a "physician, teacher, dentist, agricultural expert, anthropologist, diplomat and public health expert."² But more significant to me: in Guatemala City, AID's public health advisor told me Behrhorst was operating the country's most effective birth control clinic.

Edwin Newman, introducing him on NBC's Today Show, said, "No doctor has a practice which serves more people . . ." (October 7, 1970). He has been compared with the late Dr. Albert Schweitzer, who established a world-famous medical operation in Africa that provided primitive medical facilities for the natives. Behrhorst has been called "The Schweitzer of the Third World"³ and is said to have "out-Schweitzered Schweitzer." A book about Behrhorst began with this sentence: "To write of a giant who does not exist is easy compared to writing about one who does." He is credited with running an educational program in which village leaders are prepared to become village doctors; with organizing a wide variety of other instructional courses, e.g., family planning; with promoting better farming practices by organizing courses and demonstrations in which "young men learn agricultural basics, including the proper use of insecticides, fertilizers, and treatment of animal diseases." He has taken on the job of selling fertilizer so the Indian can have a source of obtaining this vital product. Organizing cooperatives, he lends chickens and pigs to the Indians, having them pay him later with eggs and part of the litter. Conducting experiments with apple varieties and vegetables, he is bringing new opportunities to the local Indians.⁴

With my long interest in the developing world's agriculture, I was deeply curious to see how the doctor managed such an extremely broad and time-consuming agricultural program in addition to his medical practice.

The drive up out of the Guatemala City valley to the Chimaltenango plateau is one of the most pleasant along the Pan American Highway. Arriving in Chimaltenango, I found the Behrhorst clinic located in an old, typical patio-style house facing the town square. The entrance from the cobblestoned street opened onto an empty room: no chairs, tables, benches, or stools.

The only adornments were two very fleshy photos of bare, healthy Anglo-Saxon babies, cut out of magazines.

A receptionist, sitting in a cubicle behind a temporary wall and in front of some files, was the only sign of life. I asked for the doctor and was motioned toward a door. I stepped into a tiny room crammed with six or seven chairs already occupied by patients. There were two cots, also occupied, and the doctor's desk, behind which the last empty chair stood in lonely splendor. The doctor had not yet arrived and I stood in a vacant space beside the desk. The longer I waited, the more I felt inundated by coughing babies and sick adults.

Finally, he arrived. A stocky, blond man, Behrhorst told me first about himself, his move from the small Kansas town of Winfield to Chimaltenango. "I was shocked to find 200,000⁵ natives, the Cakchiquel Indians, with nowhere to turn for medical care." I asked him about the modern looking clinic I had seen on the edge of Chimaltenango. Behrhorst said the Indians are suspicious of the government, that they distrust the "white man's" medical care, that in the past they have been poorly treated by the doctors and nurses, and that this is a traditional fear from the time of the Spanish settlers who took away the Indians' land and enslaved them. The Indians had retreated into the mountain country and they still shun modern science and medicine. "I have tried to overcome their distrust. I keep things simple so the Indians are not suspicious. I offer my help on their terms."

That he adapts his practice to the level of existing Indian mores was apparent when I returned another day to make the rounds of his entire operation. The hospital building was made of plastered adobe brick with a tile roof and brick floor and had a dozen or so rooms. The cots and cot pads were supplied by the hospital, the bedding by the patient himself. Behrhorst said, "The patient pays fifty cents a day for a cot and a visit from the doctor. All his other needs are provided by members of his family. They cook his food over a charcoal fire by his bed or in the caldron out in the patio. They take care of everything else, from back rubs to bedpans. We don't give hotel service."

That day Behrhorst was accompanied on his hospital rounds by a nurse and five or six of what he called his "medical Indians." After examining one woman for a moment with a stethoscope Behrhorst said, "She has phlegm in her chest." He prescribed penicillin and a decongestant.

We moved on to the next patient who had phlebitis, accord-

ing to a diagnosis by one of the medical Indians accompanying us. Again Behrhorst used the stethoscope and then confirmed the diagnosis. Behrhorst used the stethoscope on every patient, even if only for a moment.

Later I talked about the stethoscope with Dr. Phillip Stubblefield, a doctor for the Peace Corps volunteers in Guatemala. The Corps had allowed him to come to the Behrhorst clinic as a visiting doctor one day a week, for a year. I said that to a nonmedical person like myself this use of the stethoscope seemed strange. "No," he said, "Dr. Behrhorst emphasizes this is the procedure to use, no matter if it is an ingrown toenail; always use the stethoscope on every patient, even if just for a moment."

I said this still did not seem very professional. In fact, it would have been something like my handing corn seeds to an Indian farmer and telling him to plant them in the dark of the moon, and just as fraught with possible future misunderstanding.

Stubblefield answered, "Well, Behrhorst says the Indians believe the stethoscope has magical qualities of healing. He always gives medication by injections, too, because they feel better afterwards. They like the needle."

I asked Stubblefield about the quality of medicine at the clinic. He said it was "not as good as in the government hospital in Antigua (20 miles away) or in Guatemala City. But there you might have to wait all day, with a dying child in your arms, and even then might not get in. At Behrhorst's you can always get in."

Stubblefield then analyzed Behrhorst's kind of medical practice, characterizing it as "empiric." He added, "In the United States we think of our medicine as being scientific. The doctor waits until all the tests have been run before making his diagnosis and prescribing treatment, and always with a minimum of drugs." In contrast, under the empirical, or Behrhorst, method, "the doctor takes a look at the patient, makes his best guess as to what's wrong and treats the patient with a spectrum of broad-gauge medicines. He can do this because 90 percent of his cases fall into one of three categories: diarrhea, pneumonia, or malnutrition." The doctor can work fast in prescribing for these ailments. Stubblefield said Behrhorst could see as many as 150 to 200 patients in a single day, and often did. He frequently examines two at a time and may see as many as 30 patients in an hour, roughly two minutes per patient.

Behrhorst himself told me of the need for this "country doctor medicine." "Few Indians will make the trip to the government

hospitals for the laboratory tests or the X rays which my hospital and clinic do not have. It is too far away for them to go, too long a trip."

I was curious about this line of reasoning. Was Behrhorst's the only medical help available locally? I remembered having seen a new clinic on the way into town. Actually, as I eventually found out, Chimaltenango must be one of the best medically equipped towns of its size in Central America. Several facilities are specifically designed for these same Indians who go to the Behrhorst clinic.

MEDICAL FACILITIES SERVING THE CHIMALTENANGO AREA:

1. Public Health Clinic—one resident physician and three nurses; all four live in Chimaltenango. In addition, the clinic has the services of three pediatricians who come on weekdays from Guatemala City and a dentist who comes three days a week.
2. National Social Security Hospital—one resident surgeon and six male nurses; all seven live in Chimaltenango. Facilities include fifteen beds. However, this is open only to persons covered by the national social security plan.
3. Maternity Hospital—one obstetrician-gynecologist, twelve nurses and four midwives; all seventeen live in Chimaltenango. Facilities include twenty-five beds.
4. Children's Nursery—nurse and three social workers who care for children during the day.
5. National Health Program (PROSA)—six last-year medical students who work out of Guatemala City. This program, primarily aimed at providing medical care for Indians, is supported by the Institute of Nutrition of Central America and Panama (INCAP) and the University of San Carlos (which has a medical school in Guatemala City).
6. PUMAR—one physician and one nurse who supposedly visit villages in the Chimaltenango area on regular schedules with a mobile health clinic. This is aimed primarily at providing medical care for rural Indians and is supported by U.S. government aid funds.
7. Acción Conjunta—one physician and three nurses; all live in Chimaltenango and make the rounds of outlying villages. Acción is aimed primarily at providing medical care for Indians.
8. Doctors in private practice—five physicians; all live in Chimaltenango. Four of them also work at the facilities mentioned above.

Apart from the Behrhorst Clinic, then, ten doctors, according to my count (assuming no duplication), plus nurses and social workers, and the six medical students are available to serve the people of the Chimaltenango area.

This is all quite contrary to what is believed by most of those who have talked with Dr. Behrhorst. Thus Dr. Jessie L. Brodie of the Pathfinder Fund in Boston wrote me, "As you know, Behrhorst has the only clinic and hospital for an area with 400,000 Cakchiquel Indians."⁶ Similar statements that the Behrhorst Clinic is the *only* one in Chimaltenango have appeared in other publications.⁷

When the clinic's American and British volunteers were questioned about the other medical facilities in the area, all told me essentially the same, "Oh, but those are for the *ladinos*. Indians won't go to them." When I asked Dr. Emilio Mendizábal, head of the government's public health service for the Chimaltenango area, he said that in the two health centers he runs and thirteen auxiliary clinics (in the Department of Chimaltenango) they treat approximately 500 Indians a day, five days a week. How did the story get started that Indians won't go to the government clinics? Mendizábal, who has headed the Chimaltenango program for eight years, said, "I do not believe Behrhorst has ever visited the Chimaltenango clinic to see what we do or how we do it." (While I was with him, he confirmed this with his head nurse and the head of PROSA, Dr. Gustavo Vichy.)

Then he added, "Nor do I believe any correspondent or writer who has written about the Behrhorst program has visited our government program."

I asked Dr. Stubblefield about the Guatemalan medical efforts designed specifically for the Indians. He said, "PROSA is a great idea. It is a joint effort of INCAP, medical schools, and the government medical services. Behrhorst is beginning to work with them a little. But sometimes Behrhorst acts as if these others are in competition with him. There is no reason for him to feel that way. There are certainly enough sick Indians to go around for everyone."

To REACH the Indians who do not come out of the hills, Behrhorst has a program for training Indians to perform medical services in those villages where medical facilities supposedly do not exist. Behrhorst said the object is "to take people who are not educated

and make good doctors of them." He added, "Such persons can make a good living this way, too. I believe in the profit motive and in charging a small fee. These medical Indians come here every Tuesday for their course. They make the hospital rounds with me and then they have classes in agriculture. After a year they get their diplomas and can sell medicines back in their villages, and some fertilizer, too. It is a good business for them; some earn from \$300 to \$500 a month." My reaction: if true, these must be among the most highly remunerated villagers in the country. Certainly it seems to be a large sum to come out of a subsistence level community.

To help explain the work of these medical Indians, Stubblefield gave me a report entitled "Analysis of Rural Empirical Practitioners," by C. Michael Murphy of the University of Kentucky College of Medicine. A third year medical student at the time he conducted his two-month survey of Behrhorst's medical training program in 1966, Murphy reviewed the work of the medical Indians in the communities they were serving, providing sketches of eight of the Indians.

Of these, one was working in a town which had two pharmacies run by former practical nurses, as well as a public health center staffed by one practical, or auxiliary, nurse.

Another was working in a locality where three pharmacies were available and to which two physicians devoted a total of three days a week.

Still another was located in an area served by one pharmacy and a doctor who had a clinic one day a week.

This sampling indicated the possibility that the situation of Chimaltenango, with its several established health facilities, is duplicated to some extent in communities served by Behrhorst-trained Indians. Thus while it is undoubtedly true that a need exists for more medical care in the Indian villages, it is a gross exaggeration to say that only Dr. Behrhorst, his clinic, and his medical Indians serve the villages.

Murphy noted that making money was an important motive for becoming a medical Indian. Of one of these Murphy wrote, "He is in the business strictly for the money and freely uses such tricks as saying not to go to the doctor because he costs so much, treating the disease after it is cured, and treating people without proper indication." Murphy described another of the eight who is similarly motivated and who "goes to the adjacent towns and seeks out the sick, but does not enjoy his practice." Of still another

He said his annual budget was about \$76,000. He mentioned contributions to his support from various sources, such as AID, World Neighbors, and a newly organized Behrhorst Clinic Foundation. He said he also collected fees from his clinic patients but "a good many Indians cannot pay the \$1.25 fee so I charge them less, which means there is an annual loss in the operation of about \$8,000."

Behrhorst said he did not have permanent sponsorship by any philanthropic, humanitarian, or religious organization. He said he had begun his work in Guatemala as a Lutheran medical missionary, but had left because he wanted to work independently, "not with a group directed from outside Guatemala." This was not the reason he had given me in an earlier conversation (as quoted at the beginning of this chapter), nor was it the reason I later heard: he had resigned rather than comply with the medical requirements of the Lutheran Mission Board for its overseas personnel and their families. In the beginning it had cost the Lutheran Church substantially to bring Behrhorst and his family to Guatemala and to support them while he obtained a Guatemalan license to practice medicine. By the time he had had, as he phrased it, "a falling out" with the Lutherans, the church had invested more than \$50,000 in him.

Since, however, a general impression remains among officials with whom I spoke in Guatemala that Behrhorst operates under Lutheran sponsorship, I wrote to the Lutheran Church—Missouri Synod. William H. Kohn, executive secretary of the Board for Missions, replied, "Dr. Behrhorst's clinic and foundation is not under the responsibility and direction of our Board for Missions. For that reason we have no jurisdiction in the matter. At the same time, however, it should be noted that individual Lutherans and occasionally Lutheran organizations have provided support for the project."¹¹

The letter went on to say that "the Medical Secretary on our Board has not made a formal evaluation of the effectiveness of the clinic."

While in Guatemala I asked U.S. AID officials about their support for the Behrhorst Clinic. They praised his work, but expressed surprise that Behrhorst had said their organization was supporting it.

Dr. F. J. Vintinner, who was in charge of U.S. government assistance for medical projects throughout Central America, said he was not quite sure whether Behrhorst was receiving any U.S. aid

money or not. He was under the impression the doctor's support came from the Lutheran Church and from private citizens.

Dr. James King, medical projects officer with U.S. AID in Guatemala, had been in Guatemala for three months when I talked to him. He had just visited Behrhorst to "offer him U.S. support," but Behrhorst had told him he did not need it. King knew of no U.S. foreign aid money going into the Behrhorst clinic.

A couple of days later King phoned me. With some chagrin he explained that his organization had granted Behrhorst \$5,000. I asked King if he had ever seen Behrhorst's financial statement. He replied, "Oh, no, we would not ask for that kind of information. His is a nonprofit organization with which we are dealing."

And that was my introduction to the fact that nonprofit organizations have an implied immunity against questions about money. The U.S. government had not investigated the clinic's financial background before making a contribution. Such financing can be sanctified by *association*, i.e., AID "thinks" the Lutherans are funding the operation; therefore, that is a good enough recommendation.

For budget details about his work, Behrhorst referred me, via the New York advertising firm of J. Walter Thompson, to Columbia University's Edwin Barton, who spearheads a fund-raising program for the Behrhorst Clinic Foundation. Barton, author of a book on Behrhorst, *Doctor to the Mayas*, became somewhat annoyed when I asked about finances; but when I assured Barton my question was meant merely to find out the source of the \$76,000 annual budget and not the private income of Dr. Behrhorst, he said, "Oh, well, in that case, what the Foundation has raised is insignificant."

From World Neighbors I learned that this organization contributes about \$50,000 a year.¹² Thus this would seem to be his major support.

The more I probed the financial structure of Behrhorst's operations, the more confused I became. Word of my inquiries must have filtered back to Chimaltenango. A letter came from Behrhorst, saying, "If you were to write about us adversely, it would be a distinct disservice to many people and organizations. These include the Pan American Development Foundation and its leaders such as Gale Plaza and Sy Rotter; the Agency for International Development and its Mission to Guatemala; World Neighbors; OXFAM; the United States Ambassador to Guatemala, Nathaniel Davis; Assistant Secretary of State for Inter-American Affairs, Charles

Murphy said, "Medicine has made him rich enough so that he plans to build a new house of his own."

In part, making money was inculcated during their training when, according to Murphy, two general rules were established "out of a desire to satisfy local expectations of what a 'curer' should do: (1) every patient must receive an injection; if no injection is indicated by the symptoms, an injection of vitamin B complex is given; (2) if a patient has chest or abdominal complaints, a stethoscope must be put to the affected area."

Finally, the medical Indians were admonished during their training that "fees were to be charged to the patients only for medicines given, not for services rendered. Thus if the 'curer' had no drug therapy to offer his patient, no charge was to be made."

I asked Behrhorst how he justifies sending out his hastily trained Indians to compete with local pharmacists and doctors. Behrhorst said, "Well, I know these students are really practicing medicine. It is against the law for them to do it officially. Actually, the head of the public health service here doesn't like me too well." (Dr. Mendizábal later told me, "These men Behrhorst sends out as medical aids, operate without supervision, have no kind of license, and often call themselves 'doctor.' In every respect they operate illegally and outside the Guatemalan law." Incidentally, a government-financed program in the maternity hospitals which no one at the Behrhorst clinic mentioned, trains Indian women to be midwives. The women are tested at the end of their training and issued a license bearing their photograph, which is validated by the Ministry of Health.)

Behrhorst then changed the subject and mentioned that "the agricultural extension work is basically the most important part of the work of these men." But its effectiveness is open to question, according to a second report written by Murphy. He said, ". . . the student has a strong financial motive to do well in his medical work. Unfortunately, there is no such system to reward the student for his knowledge of agricultural science. The financial reward for applying the latest advances in agriculture . . . is of far less magnitude than the possible financial gain to be made from a successful practice of medicine."⁸

Behrhorst invited me to attend the lesson being given for his medical Indians that day in agriculture. Sure enough, the same men from the hospital rounds were in a class—not in agriculture, however, but in human reproduction. It was given bravely by young Mrs. Paul McKay, who, joking about being very pregnant

herself, did a first-class job of teaching the men about human reproduction. She explained to me later they had to understand human reproduction before they could understand birth control. Mrs. McKay and her husband (a trained agriculturalist) were not supported by the Behrhorst Clinic but by an organization called "World Neighbors." Although Dr. Behrhorst is credited, by himself and by others as I earlier indicated, with having organized a variety of instructional courses in improved farming practices, establishing cooperatives, and conducting variety trials with apples and vegetables, I found that in fact this effort was originated by and is *entirely* funded, staffed, and operated by World Neighbors, which rents space from the Behrhorst Clinic. It also finances the Behrhorst birth control program, quietly paying him a salary.

I had heard occasionally about World Neighbors before, but no one in my preliminary interviews for this book had recommended one of its projects. Thus I had given its work no heed. Based on my talks with the McKays and later by visiting their Oklahoma City headquarters, I concluded World Neighbors to be a self-effacing, unpretentious, but effective organization. It has, in my opinion, a most sensible and simplified program for the developing world: agricultural improvement and family planning at the village level. No more, no less.

One of my major reasons for visiting the Behrhorst Clinic was the strong recommendation by U.S. AID officials; they said that Guatemala's best birth control effort was "probably that of Dr. Behrhorst" because his clinic had inserted more IUD's [intrauterine device] than any other. I mentioned this to him and he said he did indeed have an active program and estimated he had inserted "probably 1,100 IUD's."⁹

I asked, "What has been the retention rate?" He said two women had become pregnant with the loop in place, and added, "I have had two patients become pregnant by losing the loop without knowing it, another four or five have lost the loop. Thus only six or seven of the total number have been lost. I have also had to remove fifteen to twenty because of bleeding."

In this aspect of his medical practice it would appear his performance is unique. Statistics from IUD programs in other countries show a retention rate of about 70 percent at the end of the first year.¹⁰ This would mean that one should expect somewhat more than 300 not retained (if 1,100 had been inserted) rather than his 25. And where malnutrition is severe, as he says it is with his Indians, the expected loss could be still higher.

I asked Dr. Behrhorst, "How do you finance your operation?"

Meyer; all of whom are loyal and consistent supporters of our program."¹³

The name game is an indispensable part of charity donations. However, I wager that with the exception of World Neighbors none of these "loyal and consistent supporters" has any idea of the finances of this operation, or knowledge of the effectiveness of the sort of hocus-pocus approach being used with the Indians.

So what is wrong with the Behrhorst Clinic? Dr. Behrhorst is treating Indians and he is providing a service for which facilities will never meet the demand. So what if the doctor wants the world to think he is the only one serving 200,000 (or 400,000) Cakchiquel Indians—his desire for recognition may be no greater than that of the next man's. No, the problems are more fundamental.

For one, Dr. Behrhorst is competing *against*, not working with, the local Guatemalan medical organizations designed by Guatemalans to help Guatemala's Indians. By denying the very existence of this service, he undermines the potential effectiveness of it. Guatemalans are unlikely to turn to him for advice or to accept any potential Behrhorst inputs to their program. In fact, if I were a Guatemalan M.D., I would probably want to run him out of the country for turning loose on the innocent Indians inadequately trained and supervised medical "doctors" that exploit the superstitions of the uneducated.

But this is secondary to the concern an American might have over the apparent lack of guidance churches give their parishioners wishing to donate to overseas programs. Assuming the Lutheran Church—Missouri Synod is typical, we have the situation where on the one hand it emphasizes it has no responsibility for the Behrhorst program and has made no evaluation of its effectiveness, and on the other hand allows its publications to imply that it both supports the Behrhorst program financially and endorses it medically. For instance, the *Lutheran Layman* (Sept. 1970) said Dr. Behrhorst derives support "from many sources, including the Lutheran Church—Missouri Synod . . . [and] by Lutheran youth organization's 'Hikes for Hunger.'" An entire issue of the Lutheran Medical Missions Council's publication was devoted to Dr. Behrhorst.¹⁴

How then, does the man of goodwill decide to whom to donate his charity dollar?

My feeling is: if you want to give to a worthy cause, choose one near home as there is a better chance to check its background.

And, if your "thing" is helping Indians, pick a reservation in the United States.

P.S. Senator Fred Harris of Oklahoma (a state full of Indian problems and only eighteen miles from Winfield, Kansas) in a Senate floor speech said recently, "Physicians in [U.S.] Indian hospitals frequently have an impossible patient load, and those physicians going to field stations or clinics see as many as 80 patients a day. One physician at an Indian hospital in Oklahoma has a patient load which allows him only 3 minutes per patient per day. The result is long lines and degrading treatment."¹⁵

Mobile Health Clinics Become a Shell Game

PRESIDENT JOHN F. KENNEDY had been in the White House only a few months when he proposed the Alliance for Progress as a massive U.S. aid plan for Latin America. What was going to distinguish the Alliance from the efforts that had gone before, the administration claimed, was the new concept that programs would now be designed by the beneficiaries—the Latin Americans themselves. This made for good rhetoric; but there was never much doubt from where most of the ideas and money were to come.

In June 1962 President Kennedy called in three key advisers: Fowler Hamilton, administrator of the Agency for International Development (AID); Teodoro Moscoso, U.S. coordinator for the Alliance for Progress; and Edward R. Murrow, director of the United States Information Agency (USIA). The president already was looking ahead to the first anniversary of the Alliance and, like officials anywhere, wanted some ammunition with which to praise his program.

The president reportedly told the group, "We must have some kind of fast impact program to show that the Alliance is really moving. Give me ideas for five such programs that can be supported from funds you already have. I don't want to go to Congress for more money."

Hamilton and Moscoso, the two officials most directly involved, called in their aides. Although it was never clear whether the president meant five different kinds of projects or projects in five different countries, within a week Hamilton and Moscoso returned to the president with a plan for putting mobile health units into operation in Latin America's rural areas. The program would begin in the five nations of Central America (it was later expanded to Panama), and would be called PUMAR (Programa de Unidades

Móviles para Areas Rurales). (A program known as "Operation Niños" was also proposed to President Kennedy at this time.)

Credit for thinking up PUMAR is generally given to Dr. Edgar F. Berman, a physician with previous experience in an international health program. At the time Berman first formulated his suggestion, however, he was private physician to Senator Hubert H. Humphrey. This is the same Dr. Berman who in 1970 was to attain national attention for saying women were not qualified medically to be president of the United States and thereby called down upon himself the wrath of the American feminist movement.

Berman, an aggressive, confident, and articulate person, described the early history of PUMAR to me in a letter dated June 26, 1969:

Prior to 1962, I had worked up an idea for a mobile program, which I thought was rational for underdeveloped countries, for the then Senator, Hubert Humphrey. It was geographically feasible, it had visibility, emotional content (life saving), was inexpensive and was a means of initiating community development.

When it was begun, it was set up for 10 mobile units for each Central American republic and was supposed to continue expanding into the rest of South America. However, in 1963 the budgets were cut and soon funds were no longer available. Most of the Central American nations thought the idea valuable enough (one President told me that it helped reelect him) to continue their own financing.

However, the mobile health unit as an idea was only a foot in the door to Community Development. For each patient was charged and the fund went to an elected committee in the village which decided once a year on its use. In 1963 we added credit unions, agricultural extension agents, a seed and small animal program, increased our health education and later (in some nations) initiated population control. The moneys gathered by the community were frequently used for teachers, building schools through self help or even acquiring a dentist.

As so often happens with such programs, Berman, who helped organize it, soon left it. (As told in his letter, alliance coordinator Moscoso had called upon him late in 1963 "to organize the population control division for the State Department in Latin America.") In retrospect, Berman noted ruefully, "If the program would have gone as I saw it, there would be at least one unit . . . visiting twelve villages a week, catering to approximately a two hundred thousand population in each Latin American nation."

Even though his grand vision for the program was scaled down, Berman could still write, "I think effectiveness of the health programs for the most common diseases (which are the greatest pro-

53

ducers of mortality and morbidity) is excellent and I think we were treating somewhere around one million patients a year. However, my real goal was the utilization of this program in initiating community organization, community self-help and involvement, and the development of the Democratic process."

The original blueprint of PUMAR was impressively simple. A doctor and a nurse were to make regular circuits in a rural area by jeep, spending one day every fortnight at each of twelve towns on their run. At each town a small medical center, stockpiled with basic medicines, was to be supervised by a local resident called a "sanitation inspector." Among other duties, he would make sure the patients were ready when the medical team arrived.

Each patient would pay approximately twenty-eight cents for treatment. This money would go into a fund to be spent locally on community development projects. The sanitation inspector would encourage the local people to organize a village committee by an election. The committee would vote on how the accumulated funds were to be spent, presumably on such projects as road building, construction of a health center, digging of a well, purchase of a pump, and so on. The doctor would meet with the village committee members on his visits and offer professional, mature guidance on community projects.

In all, effectively simple.

Equally important, even the nonprofessional in development could grasp at once the impact such a program could have as a device for introducing new ideas to backward, isolated villages and thereby help lead them to a better life.

Before undertaking field research on PUMAR's mobile units, at the suggestion of Assistant Secretary of State Covey Oliver, I interviewed the pertinent officials in Washington and their counterparts in Central America. I read reports. I was briefed. The gist of this background material was summarized by Frederick J. Vintinner, AID's chief public health advisor in Central America, in an article he wrote for a public health journal in 1968, five years after the program was inaugurated.

[PUMAR] provides basic medical care and preventive medicine and services for two million people living in the rural areas of Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, and Panama . . . Self-help is a cardinal factor and through cooperative community actions basic health facilities have been constructed, health programs implemented, environmental sanitation improved, and roads, bridges, schools, athletic fields, and other community facilities built or established. Foundations

have been laid for permanent responsible local groups who can take leadership in community health and development activities and there is a growing change of attitude toward civic responsibility and pride in local organizations and achievements. With improved health and a feeling of new hope for a better life in the spirit of the Alliance for Progress, the people in the rural areas of the five countries in Central America and Panama will become an important component in the total economic and social progress of the region.¹

Vintinner included a catalog of PUMAR-inspired, self-help community development projects in Central America and Panama:

Health clinics established	443
New buildings constructed	74
Communities employing full-time nurse aides	209
Community centers established	64
New buildings constructed	38
Piped water systems installed	203
Community wells constructed	180
Community wells reconditioned	204
Latrines installed	7,459
Latrines rehabilitated	2,251
Garbage disposal programs initiated	3,799
Community clean-up programs initiated	202
Animal-penning programs initiated	420
Public barns constructed	154
Public laundries constructed	281
New access roads constructed	65
miles	235
Roads improved	49
miles	350
Bridges built or repaired	60
Schools assisted (construction, renovation, supplies)	163
Home garden programs started	581
Small animal-raising programs started	33
Communal industries started	24
Credit unions and cooperatives assisted	64
Communal parks built or improved	18
Athletic fields constructed or improved	38
Libraries started or assisted	28

For my field research it was necessary, in accordance with my pattern of selecting specific development projects, to determine which Central American nation had the most effective PUMAR program. It did not take long to establish that in Washington the Nicaraguan program was reputed, by all odds, to be the best. The late Aaron Brown, who had just retired as U.S. ambassador to Nicaragua, confirmed this conclusion, stressing that the PUMAR

program there was "excellent because it includes a community development program." James P. Lockard, development officer on the Central American desk of AID, informed me that plans were afoot to provide the Nicaraguan government with a loan to increase the number of mobile units from eleven to twenty. Since Nicaragua was the only country slated for such an expansion, this seemed to be additional evidence that its PUMAR program had special merit.

When I arrived in Managua, I was particularly impressed by Louis Gardella, AID's articulate public health advisor assigned as liaison with PUMAR.²

Gardella had a direct, open personality, and he did not beat about the bush when discussing anything. Besides being a breath of fresh air in the hierarchy of officialdom, he was experienced in AID, having spent six years in Nicaragua and had worked previously in Libya, Paraguay, and Costa Rica. Gardella was considered an expert concerning the health problems of the hungry nations. Actually I hazard that his enthusiasm and his effectiveness as an advocate for the PUMAR program are the underlying reasons the Nicaraguan program is held in such high esteem in Washington and elsewhere.

"We have been too successful in public health here," he told me, referring to the dramatic decline in the local death rate. "We have failed to realize the effect of our success on population growth until recently. We should have started family planning when we began our public health programs here twenty years ago.

"Nicaragua has a lot of good land to expand into," he said. "PUMAR brings medical services to these new areas." (I was surprised to find this able, seasoned official repeating the old, pernicious myth about uninhabited land automatically being good land for farming.)

I asked, "Do these mobile health units offer family planning service?"

"No," he said. "We have too much to do already. When a unit arrives in a town, the doctor has some eighty patients to see that same day. He also has to meet with the local committee to plan community development projects. There is a limit to what one man can do."

Gardella added, "The headaches of just keeping the units on the move tax everyone's ingenuity."

At the time I interviewed him, Nicaragua had eleven mobile units, four of them boats which served communities along rivers near the Atlantic Coast. The boats had been inaugurated by former

President René Schick Gutiérrez as a political gesture to show people he was doing something for the nation's isolated citizens. Gardella said that keeping the boats in operation is a frustrating job because their outboard motors are always breaking down. Since the number of people living in the remote areas is small, the cost of maintaining the waterborne units per person served is high.

But, Gardella emphasized, as had Dr. Berman in his letter, PUMAR's success should not be judged solely by the medical services it provides. He pointed to the importance of the creation of village committees and said they had been an essential factor in teaching people how to operate through the democratic process. "In the past," he said, "there has always been some local czar who ran everything in these villages. We are using the committee system to teach the people they have certain rights." Gardella's enthusiasm was contagious as he spoke of developing democracy this way and of the need to neutralize the "Commies."

I asked how he would evaluate the effectiveness of PUMAR. He said, "It depends, of course, on what criteria you use. Our medical care is only fair and the cost is high. However, our community development aspect is very successful. As far as Washington is concerned, PUMAR's success is measured by the degree the little people in the rural areas gain a knowledge of what the Alliance for Progress means. To them the Alliance is the jeep they see!"

However, I received a diametrically opposed opinion from a young Nicaraguan government official, Dr. José Antonio Cantón, a Johns Hopkins graduate who heads PUMAR for the whole country, and Señora Ortega de Castillo, who is in charge of PUMAR nurses. Both of them said categorically that community development (and, to a lesser extent, the itinerant doctors) is a side issue. The main objective, they emphasized, is to construct a health center in each village.

These differing objectives made my job of evaluating the program difficult. Which to study? The building of health centers? The medical care? The community development? The visibility of AID? The quick impact? I began to feel as confused as an on-looker at a fast-moving shell game.

When I asked Gardella to recommend a mobile team for me to visit, he was emphatic in saying I should visit that of Dr. Augustin Brenes Bojorge, who had just been named Nicaragua's "Doctor of the Year." Brenes' unit was the best of the lot, Gardella said.

So I went to Nancimí in the Department of Rivas, a town some seventy miles from Managua. It was a small cluster of houses that belied the 2,000 people said to live in the area. Brenes was late in arriving because his jeep had broken down (that bedevilment of all development activities in rural areas). He was a shortish, stocky fellow wearing a baseball cap and, as I soon discovered, he does not just talk to you, he shouts. The creed of this dynamic, tireless fellow is: "Doing good works in this world will bring you your reward in the next." He wore me out, but the villagers loved him.

About a dozen people were waiting for him when he arrived. By the time he left he had seen twenty-eight people. Dr. Brenes was assisted by a young nurse who seemed disinterested and bored with her job. She handed out medicines with the detachment of a tired drug store clerk.

PUMAR's publicity emphasizes that the sanitation inspector and at least one member of the village committee are present each time the doctor makes his visit. Neither was on hand the day I was at Nancimí. Dr. Brenes indicated this was par for the course. "Quite frankly," he said, "I don't know much about the committee, what it does or who its members are." Brenes estimated that less than 40 percent of the people he treats are interested in the community development part of PUMAR.

Before leaving Managua I had learned five PUMAR projects were listed as completed at Nancimí: a credit cooperative, several wells, the improvement of the road leading to the main highway, a new schoolhouse, and a health center.

Here in the field these "accomplishments" were unrecognizable. I list the projects:

1. A credit cooperative had been started during the first burst of enthusiasm over PUMAR in 1964, functioned for six months, and then died. Of the several loans which the cooperative had made during its brief life span, only two have been repaid.

2. I could not determine exactly how many wells had been built, but I was shown one well dug in 1964. This well was not working because the pump had broken down. Local interest was not sufficient to get the relatively expensive spare parts necessary to repair it. As matters now stood, water technology in Nancimí consisted of a bucket and a rope. A sidelight on the broken pump was provided by Milclades Chávez, head of PUMAR for the eastern half of Nicaragua. He told me, "Most of the pumps in my villages seem to be broken." The reason, he said, was that AID required the pumps be purchased in the United States and they were never powerful enough.

3. The story of the construction of the road out to the main highway, as told me by local people, bore little resemblance to its description at PUMAR headquarters. PUMAR claimed credit for making it into an all-weather road. "Not at all," said Juan Rodríguez, who was president of the town's road committee. The road had been improved because a total of 300 people had been paid, largely with food, to work on it for one day or more over a period of four months. This work was financed by a special tax levied on Nancimí real estate, not by PUMAR fees.

4. In Managua, PUMAR took the credit for building a six-room schoolhouse, saying it was financed out of Nancimí's 28¢ fees. Armando Ruiz, secretary of the local PUMAR committee, set the record straight. He said the school was built entirely with AID money, the land and some materials were given by the village. The project had nothing to do with the local PUMAR committee.

5. Dr. Cantón, the Nicaraguan head of PUMAR, had told me the program's principal objective was building health care centers. Since Brenes was such an outstanding doctor, I fully expected the town would have at least an adequately effective center. Not so. In 1963 the local PUMAR committee used a borrowed house as a center. This was considered inadequate because of its small size, lack of windows, and dirt floor. So three years later a second committee rented a building with running water and a tile floor for \$9.80 per month. At about the same time, in a moment of enthusiasm according to Dr. Brenes, the villagers manufactured 4,000 bricks with which to build a new health center. By 1968 the community had become tired of paying the rent and returned to the original dirt-floored building. Thus after six years, Nancimí's health center project is back where it started except for the 4,000 bricks still piled up, unused.

I recapitulate what I found in Nancimí, served by PUMAR's "most effective mobile unit" and headed by Nicaragua's "Doctor of the Year." The town does have a new surfaced road to the main highway and a new six-room school, neither of which can be attributed to PUMAR. The local village development committee, since the first spurt of energy in 1963, seems to have accomplished nothing at all. The health center is still in the original decrepit building. Whatever community development spark may have once flickered in Nancimí has long since sputtered out.

The pile of bricks covered with dust is PUMAR's monument here. When I said this to Dr. Brenes, he said: "Nothing is perfect, only God."

I visited two more PUMAR villages. The trip to La Orilla—

a wide place in the road for 250 families and more destitute and dusty than Nancimí—proved to be delightful because of the doctor and the nurse. Dr. José Ramón Carvallo, a country-type doctor seventy-two years old, was accompanied by Nurse Sylvia Hurtado, who was as warmly sincere as the doctor. They were both in agreement that health customs had improved in La Orilla since PUMAR began. They mentioned as examples: some seventy-five cement latrines have been built, mothers now cover the nipples of baby bottles to keep them from flies and the danger of typhoid, and fruit is washed before it is eaten.

However, I found the results of community development just as elusive here as in Nancimí. The town did indeed have a health center, a small building with a tile floor. The center had cost \$420, a sum which had been paid, I was told, entirely out of the funds accumulated through the 28¢ fees. But the center had developed a leaky roof and it was clearly not the sort of building where a government could locate a permanent staff.

The town's development committee had not met in four months. No committee member was on hand for the doctor's visit, nor was the sanitation inspector there.

Again, the community well, dug with PUMAR earnings, had a broken AID-supplied pump. It had remained unrepaired for three months, due to the lack of money or interest or both. Each family had its own bucket and rope because a bucket and rope left at the well "would be stolen."

Nurse Hurtado railed at the lack of spirit among the villagers: "There is no sense of cooperation here, no community vigor," she said. "Always petty fights between families. They get mad at each other even when a chicken comes over the fence. Here there is no soul. There is nothing."

The doctor attended twenty-eight patients. This was three more than the twenty-five which he said was his average per visit.

The last village visited was Veracruz, population 678. Since it is only some ten miles from the capital, it is scarcely an isolated hamlet. Geographically it is in an ideal position to receive close PUMAR supervision and the town has telephone service.

From PUMAR records at headquarters I had learned that the development committee in Veracruz was considered to be one of the most effective. I drove out to see its accomplishments rather than watch a visiting doctor in action. PUMAR funds, it was officially claimed, had built a ten-kilometer connecting road to the main highway. This road, it turned out, is only six kilometers long

and, according to Señora Gregoria de Perea who had been a member of the local committee for almost six years, no PUMAR money went into its construction.

I visited the public well in Veracruz because in Managua PUMAR officials had told me it had been dug with PUMAR savings. But here in Veracruz the people were unaware that PUMAR had been a factor. They told me the central government had dug the well and installed the small electric pump and water tank. The valve had broken three months earlier and had not been repaired or replaced.

One Veracruz accomplishment listed at the Managua PUMAR headquarters was the installation of electricity. However, a former committee member said no PUMAR money had been used. Rather, the government had paid for it, and the local villagers had helped by digging holes for the poles. Twenty-six houses now had electricity.

But, marvelous to see, Veracruz had a beautiful health center, by far the finest building in town. Here PUMAR had indeed accomplished something—or was it a bureaucratic mirage? Just how the construction had been financed was confusing. The village, I learned, had borrowed \$1,190 from AID to build it. Now everyone locally seemed preoccupied with the \$14 which had to be squeezed out monthly to pay off the loan. The PUMAR fees for medical consultations barely covered this sum. Thus there would be nothing left over for any other community project until this long-term loan should run its course—some ten years off. In the meantime, the center itself could become a white elephant since the government now had no plans to staff it permanently.

Maybe I am overly critical. The construction of health centers is, after all, one of the announced goals of PUMAR. Therefore I suppose the center at Veracruz can be tabulated legitimately a success, even though it is used irregularly. For my Veracruz story, none of this is really pertinent. I went there to visit what I had been assured was an effective development committee in action. The town's location, as well as the probability of strong supervisory support from the capital, made me conclude that if a community development committee could work anywhere, Veracruz must be the place. Alas I found the committee had functioned well until it had overextended itself by borrowing that \$1,190 from AID. The debt and the obligation to pay it off had been too much. Now there was no committee.

PUMAR, which looked so beautifully simple on paper when it

was set up in 1963, is, in fact, a highly complex organization. Thus it can be publicized in a variety of ways as the need arises or as officials wish to justify their own work while ignoring other parts of the organization. On the one hand, it is a straightforward medical program; on the other, it is a rather amorphous community development program for which the goals have not been clearly defined. There is also, like a halo floating over all, the desire to train backward villagers for "democracy"—itself a vague term.

The main link tying the parts of PUMAR together is not the itinerant doctor, not the officials in Managua, but the sanitation inspectors living in the villages.

Originally it may have seemed these inspectors were to be rather unimportant cogs in the wheel. In retrospect, it is now evident that the failure to create an effective corps of inspectors has had a disastrous effect on PUMAR. The inspector was assigned an enormous and complex job. He was told to develop a democratic institution where none had existed previously, to encourage responsible leaders to come to the fore, and to show them how to run for election and serve on village committees. Yet the inspector is not a local person but one brought in for a two-year assignment from another town, often the capital. In a dull, apathetic, forlorn village (often no more than a few scattered houses), he must show the wisdom of Solomon if he is to bring success to programs, the goals of which even its own officials cannot determine. Meanwhile, of course, he must avoid the petty jealousies of these alien people among whom he has been cast.

The next step, assuming this Solomon has indeed succeeded in guiding the local people through the embryo stage of democracy, calls for him to fade gently into the background as the new local leaders take over all phases of the operation. Yet he is expected to retain enough influence to make sure the funds generated by PUMAR will be voted by the local committee into useful projects. Although these are important responsibilities, one can quickly see that only a few hours a month of actual work are thus involved. In addition he has the job, once every two weeks, of making sure the patients are lined up ready for the doctor's visit. Also he must be able to give injections himself, as he is the only "medical" person living in the village. The real curse of this job must be the deadly boredom.

In all my experience anywhere, I have seldom encountered any paragons able to bring off such an assignment. Little wonder the hastily conscripted sanitation inspectors were not up to it. In fact

any person smart enough to handle the inspector's complex role and temperamentally and emotionally dedicated to his work would already have found a fine, worthwhile job elsewhere.

In Managua PUMAR officials admitted that village committees rather frequently spent their development savings on such uneconomic projects as repairing the local church or building a wall around the cemetery. Although clearly this was what the villagers themselves wanted, excuses had to be found for such "mistakes." Often the Nicaraguan officials put the blame on AID. They said AID had changed the rules in midstream. As long as AID gave extra money to the villages to supplement the funds derived from the patients' 28¢ fees (an AID contribution not mentioned to me in Washington), the village committees did, in fact, push genuine development projects. But shortly before my visit AID had changed its policy to one of *lending* the money. The result, the Nicaraguan officials self-righteously alleged, was that the villager lost interest in PUMAR-inspired democracy as soon as they had to assess increased taxes to repay the loans.

WHAT IS the present status of PUMAR in Nicaragua? Señor Ortega de Castillo, head of the nurses, stated that the number of patients treated by PUMAR has fallen every year since 1966.

Milciades Chávez, head of PUMAR for the eastern half of Nicaragua, attributed the decrease simply to the fact that people are getting healthier—an idea not substantiated by anyone else with whom I talked.

In the end I decided the decrease in the number of patients treated was due to declining efficiency. In part, this was caused because the jeeps and launches were continually breaking down. But most significant of all, PUMAR is on the wane because local enthusiasm and support for the program are fading.

Perhaps this is so because of the collapse of the concept of PUMAR as a channel for community development. But what is community development? The term is bandied about as if we all knew. Yet everyone seems to have his own meaning. For instance the electricity brought into the village of Veracruz is used for such things as television, radios, and refrigerators. In my opinion, the electricity is a useless luxury rather than an example of community development because it does not further any form of economic endeavor. Yet the advocates of electrification, whose number is legion in the development profession, will sincerely claim the Veracruz

electricity is a valid and successful example of community development.

Others say any simple agreement on a single program by a village is development. They would thus consider the following true story to be an example of community development at its best.

A friend of mine has a vacation home in a small, somewhat isolated village in southeast Mexico. The town has little water and the people have few opportunities to bathe; during church services the air becomes rank. Thus my church-going friend decided to help the community. He told the mayor he would pay to build a bathhouse if the village would donate the land. The mayor thanked him for the offer but said he could not accept without first discussing it with his community committee. He explained, "I am a democratic mayor. Please give us ten days to talk it over."

In ten days the mayor reported, "The town is very grateful for your generosity. It is true we have been without a bathhouse for generations. But in reviewing all our village's needs we cannot ignore our reputation in the valley. During holidays we have to hire a band from a neighboring town for our fiestas. It is bad to have the reputation of being so poor we have no band. And so," the mayor concluded, "we would like to ask that instead of building us a bathhouse, would you please buy the instruments for a brass band?"

WHEN RAGNAR ARNESON, AID mission director in Nicaragua, told me PUMAR has "stimulated a sense of hope in the communities," my reaction was that mere stimulation, after six years' effort, would be a strong condemnation of this project of community development.

In Washington and Nicaragua I was told new AID money was going into PUMAR because it was an ideal vehicle on which to piggyback a population control program—the sort of effort Congress is now insisting AID must support. Therefore officials have quickly claimed the \$2 million loan for Nicaragua's PUMAR was being made primarily because of the need to support local family planning efforts.

This concept sounds meretricious. Where could the money be better spent than in Nicaragua? The population growth is a frightening 1 percent higher annually than food production. How could AID money be better spent than in family planning? Half of Managua's hospital beds are occupied by women suffering com-

plications from illegal abortions. Roberto Castillo Quant, Nicaragua's vice-minister of public health, told me there are two to three abortions for every live birth.

I discussed the implications of these figures with Dr. Carlos H. Canales, Nicaragua's director general of public health, who is charged with the supervision and planning of PUMAR. Hanging on his office walls were maps identifying the placement of new mobile units and health centers to be funded by the new AID loan.

PADDOCK: What will the centers be used for?

CANALES: They will offer maternity and infant care; family planning; instruction in nutrition, personal hygiene, sanitation, other types of health education, and in prevention of polio and parasite infections; treatment of epidemic tuberculosis, typhoid, and measles; malaria control; convalescent care; and general medical attention.

PADDOCK: And the new mobile health units will offer more or less the same thing?

CANALES: That's right.

PADDOCK: What percentage of time will these new health centers and mobile units give to family planning?

CANALES (*Puzzled look*).

PADDOCK (*Rephrasing question*): Would you say 25 percent of time and money will go into family planning?

CANALES: No, it would be much less than that.

PADDOCK: 10 percent?

CANALES: I would say it would be less.

PADDOCK: Would you say 5 percent?

CANALES: No, it would be somewhat less.

PADDOCK: Would you say about 2 percent of the funds would be spent on family planning?

CANALES: Yes, I think that is about right.

But I would say that even 2 percent is a bit high. The reason for my skepticism is that Gardella, the U.S. public health advisor on the scene, told me bluntly that doctors working with the mobile health units do not have time to become involved with family planning.

In this, as in other ways, I regard PUMAR as a classic story of bureaucracy. The reality out there, in the field, is so completely at odds with the representation here, at the home office. PUMAR began merely as a president's desire to have a fast impact program

showing something that would back up his perhaps too-fast rhetoric. It was conceived and set up within a couple of weeks as a health program, then, apparently as an afterthought, combined with the job of stimulating democracy through community development, and then with the building of health centers. Now, so it is announced, PUMAR takes on another job—family planning—for no reason other than it is the presently fashionable catch phrase needed to persuade Congress to expand the program with another \$2 million loan.

It makes AID sound like a sort of shell game.

Mysteriously the pea rolls from under one shell, representing one publicized development goal, to another which catches public attention, and then to another and another. The eyes of the on-looker become confused.

Where is AID? Where is development? Under which shell? Maybe it is not under any of them.

Conclusions: A "Miracle Drug"

PUMAR, EXPERIMENT STATIONS, supervised credit, and the others are small parts of a gigantic U.S. foreign aid program. Up to this writing, the program, excluding military aid, has cost approximately \$150 billion.¹

Why and how did the United States get into foreign aid in the first place? What was it meant to accomplish? How did it evolve into such a huge, worldwide operation?

Like most mammoth bureaucratic institutions, its origins were humble. How very humble only a few realize. It began with \$80,000 and six U.S. technicians back in 1941 on the eve of Pearl Harbor. The U.S. government had suddenly realized the need to cement relations solidly with Latin America where sympathies were often strong for the German Nazis. Also the United States, threatened by Japan in Southeast Asia, looked to Latin America as the only easy alternate source for cinchona (for malaria), rubber and abaca (for naval rope), and other essentials such as tin. To protect these interests Nelson Rockefeller, then coordinator of Inter-American Affairs in the State Department, proposed (with Secretary Cordell Hull's support) an appropriation of \$80,000 to pay the salaries and expenses of a half-dozen or so American experts to assist Latin American countries in health, agriculture, and other projects. When Congressman Thomas McMillan, chairman of the State, Commerce and Labor subcommittee, saw the request he instructed Jack McFall (whose story I am repeating here)² to inform Secretary Hull the item had not the slightest chance of passage. In 1941 the idea of paying experts to work for the benefit of foreign countries with U.S. government funds was too revolutionary for McMillan to swallow.

When McFall reported this to Hull, the secretary asked him whether he personally thought anything could be done to change

64

Appendix B - The Exportability of the "Barefoot Doctor"

Much publicity has recently been given to the health programs in the People's Republic of China - especially in their use of rural health workers or "barefoot doctors". The attached article discusses some of the cultural, political and practical constraints to the replication of the Chinese health system in Iran and points out the importance of adapting a method of health delivery to the specific sets of conditions in a country.

65

Medical Alliance

THE CHINESE "BAREFOOT DOCTOR" EXPORTABLE TO RURAL IRAN?

HOSSAIN A. RONAGHY

STEVEN SOLTER

Department of Community Medicine, Pahlavi University
School of Medicine, Shiraz, Iran

SINCE the late 1960s a great deal of information has accumulated concerning the "peasant" or "barefoot" doctors of China.¹ Most of this information originated from foreign observers who have visited a number of rural health workers throughout China and recorded their impressions. Relatively scant information has been provided by the Chinese themselves, and this has consisted mostly of data regarding numbers which have so far been trained. Certain features characteristic of the barefoot doctor system have emerged:

1) The barefoot doctor is chosen by his production team according to his proven willingness to "serve the people" in a totally unselfish way. Intelligence and ability are also important criteria, but level of formal education (beyond a certain literacy) plays no part in the selection process.^{1,2}

2) Training of the barefoot doctor closely combines theory and practice, so that short didactic periods are followed by practical experience in the village. In this the barefoot doctor is continually applying new information to specific village problems. Training takes place entirely in the rural areas, with constant supervision by physicians and nurses.^{1,2}

3) The barefoot doctor continues his normal occupation (usually that of a rice cultivator) while performing his local and public-health tasks. He is given no salary (nominal one, but is often reimbursed by the production team for his time away from cultivation).^{1,2}

4) The Chinese programme emphasises disease prevention and health education as the primary function of the barefoot doctor. Screening all patients and treating only with minor problems is also an essential component of his job.^{1,2}

5) Continuing education and constant supervision (by telephone) are of paramount importance in maintaining standards of quality in their job performance. Ability is maintained in both the training and the description of the barefoot doctor. The instructional material for barefoot doctors differs from region to region, depending on the relative importance of different diseases in a region. Also the length of training, salary, and level of skill attained can vary from commune to commune according to the various needs and resources of the area.^{1,2}

6) The most remarked upon and the unique feature of the system is the ideological zeal shown by the barefoot doctor. Seemingly, total devotion to the health of his production team, without thought of personal gain, has been observed frequently throughout the country.^{1,2}

7) For reasons the Chinese have had to rely on barefoot doctors for health-care delivery to rural areas is precisely the same as those prompting other developing countries to train rural health workers. Throughout the developing world the greater part of the population is rural, living in scattered villages.

The few physicians who have not migrated to wealthier countries prefer to live in large cities, where social and educational opportunities for their families are much better than in rural areas.³ Health care for the rural majority must rely on some kind of auxiliary health worker, since the alternative of producing large numbers of physicians and creating viable working conditions for them in rural areas would be prohibitively expensive, if it were, indeed, possible.⁴

A question that has repeatedly arisen in the minds of foreign observers is, "To what extent is the Chinese barefoot-doctor concept exportable to other countries?" Some observers have noted that the barefoot doctors are not very different from paramedical workers already on the job in other countries.⁵ But most recent visitors to China have been struck by the incredible enthusiasm and ideological zeal of the barefoot doctor—something which they had never observed in other countries.

Obviously, the barefoot doctor must be seen in the entire context of Chinese culture and recent Chinese history. He could never be "exported" without the supporting institutional and social structures being exported with him. If the barefoot doctor fervently and sincerely desires to "serve the people", it is because of the cultural context of his commune (and the reinforcement of his attitude) rather than a chromosomal uniqueness on his part.

IDEOLOGICAL AND CULTURAL DIFFERENCES BETWEEN IRAN AND CHINA

For the past year we in Iran have been most interested in exploring this question of the "exportability" of the Chinese barefoot doctor. At Pahlavi University in Shiraz we have been training health workers very similar to the barefoot doctor and have encountered cultural and political dynamics which we never expected and which differ strikingly from the Chinese experience.

The department of community medicine at Pahlavi University School of Medicine, Shiraz, Iran, has been training two kinds of health workers for rural Iran. One of these is the village health worker (v.h.w.), a man or woman chosen from a village and trained for 6 months in basic preventive and curative health care. The other type of health worker is the middle-level health worker (m.l.h.w.), who is trained for 2-4 years and becomes the eventual supervisor and teacher of the v.h.w.

A major share of rural health care in Iran is at present provided by the Health Corps. Physicians who have completed internship must serve 18 months in the Health Corps in a rural area as part of their military service. The Health Corps station at Kavar, 55 km. south of Shiraz, was chosen as the training centre for the first group of v.h.w.s. The Health Corps station at Kavar was staffed by one M.D. and two aides (both high-school graduates) and served as the only source of modern medical care for about fifty surrounding villages with a total population of more than 20,000.

An important principle of recruitment from the beginning was that the villagers should as much as possible choose their own health worker. This turned out to be extremely difficult in practice. We visited

each of about forty villages surrounding Kavar, and in every instance we met with the village headman or the head of the village council. We asked their opinion regarding which literate person in their village would make a good v.h.w. We soon discovered that, in many instances, as soon as the village headman realised that this v.h.w. was potentially an important person, the son or brother of the village headman (or even the headman himself) was chosen. There seemed to be no more democratic alternative available; given a free choice the village power structure almost invariably chose one of its own members, or a close relative.

Another cultural barrier to recruitment soon became apparent. We were interested in selecting women, for two reasons. Firstly, women play an essential part in maternal and child health and family planning, particularly in a culture where men are proscribed from participation in the delivery of babies. Secondly, since this was a pilot project, we wanted as great a variety of health workers as possible (including such variables as age, status in the village, education, and sex) in order to find out what kind of person makes the best health worker in an Iranian village. It soon became obvious that we would have a hard time in recruiting village women—the reason being simply that the brothers and husbands and fathers of the few literate village women were not going to let them out of the village for training, and hence out of their control. Eventually, however, we were able to recruit 4 women out of a total of 16 volunteers.

Already at the stage of recruitment, then, we see major differences between the Iranian and Chinese experience. In Iran, despite considerable changes in village social structure since the Land Reform of 1962–66, there is great difficulty in having the village use any criteria other than a person's blood-relationship to the élite, in the choosing of a barefoot doctor. Also, the "liberation" of Iranian women has been limited so far mostly to cities; the village women are still objects controlled by their menfolk.

It is difficult to compare the Chinese and Iranian selection procedures for barefoot doctors. The Chinese stress collective decision-making and emphasise the importance of personal qualities—particularly unselfishness, dedication to the welfare of the group, and ideological acceptability. Our method in Iran stressed decision-making by the pre-existing élite, who demonstrated loyalty to close relatives. One cannot easily generalise from this limited experience. Iranians are a highly individualistic people with a limited history of cooperative enterprise, whereas the Chinese have a long history of close cooperation (such as in irrigation works) made imperative by the intense crowding in the great river valleys.^{6,7}

The training of our v.h.w.s also introduced a number of unexpected difficulties. For one thing, the "integration of theory and practice" proved to be no easy matter. The Iranian educational system emphasises memorisation, and our v.h.w.s devoured the 260-page "textbook" we had prepared for them. We had expected them to absorb the material in 5 months; instead they memorised the entire text in

5 weeks. The "practical work" that they particularly favoured was curative medicine, in the course of which they actually made diagnoses and prescribed drugs. The "preventive" and educational aspect of their work (which we always stressed was of crucial importance) elicited less enthusiasm. The question raised by their avidity for memorisation was this: Should written, memorisable material be presented at all? For us the evidence indicated that having some material to digest made them very comfortable, since it was compatible with their previous school experience and it generated self-confidence. This material should be limited, however, since the emphasis in training is on practical skills applicable to the village environment, and these skills must be acquired primarily by field experience.

It was when the v.h.w.s completed their 6-month training course and returned to their respective villages that the differences between the Chinese and Iranian cultural context became obvious.

One of the v.h.w.s was the brother of the village headman, but there existed in his village a rival faction with a rival headman. The rival faction insisted that the v.h.w. would poison them by giving the wrong drugs in the wrong dosages. The v.h.w. became so infuriated by this accusation that we felt it likely that he would in fact do something similar to what he was accused of.*

A second village was likewise split by two factions that could not agree on the v.h.w. The candidate belonged to the majority faction, but the minority faction was politically powerful. Chinese villages must also have factions (perhaps manifested by ideological differences masking more personal division), but there are no reports of such strife in Chinese villages over the appointment of a barefoot doctor. The intense individualism of Iranian village leaders renders any effective village collective decision-making or even consensus almost impossible.

It is too soon to be sure, but apparently the v.h.w.s who returned to their own villages were less well received, on the whole, than the v.h.w.s going to villages where they had never lived. Of the 16 v.h.w.s trained in our first group, 8 were in each category. Those with the greatest difficulty in becoming accepted are those who are well known to the village and who belong to a faction (or, at any rate, to a family) with recognisable intrinsic vices and virtues. Chinese barefoot doctors are believed always to return to their own communities. No information is available concerning any consequent psychological dislocations in these villages.

Many additional problems confront the v.h.w. when he works in an Iranian village, and many of these are either unique to Iran or rare in the Chinese village.

They can be divided into the following categories:

- A. Problems associated with folk-medical assumptions of villagers. These include, for instance, the widespread belief that only injections (rather than tablets, syrups, or capsules) are effective—and the more painful the better. Another assumption is the belief in the dichotomy of foods and drugs into "hot" and "cold"

* Finally, when faced with the prospect of having no v.h.w. in their village, the rival faction gave a written promise to the Health Corps station in Kavar that they would cooperate with the v.h.w. and cease their accusations; the v.h.w. is now working in the village with cooperation from all parties involved.

—a historical legacy of the Greek humoral theory and the Hippocratic-Galenic tradition.⁸

problems associated with the organisation and delivery of health care in rural Iran. These problems relate to the vacuum in rural health care, particularly the scarcity of physicians for referral or supervision.

problems associated with village social structure. The difficulties with rival factions are in this category. Also, personality characteristics of the H.W. (such as the desire to move up from village to city, and concern with status, particularly the accoutrements of the physician, such as white coat, stethoscope, and hypodermic syringes) are important factors influencing his or her effectiveness.

CONCLUSION

On the basis of our limited experience in Iran, we believe that the Chinese barefoot doctor is not transplantable to Iranian soil, and that auxiliary

training in Iran must take into account the realities of the rural situation. There is a great deal of latent idealism and energy in the young Iranian villager. That idealism can be tapped in certain individuals, but until villages can achieve more consensus and stability the fantasy of the Iranian barefoot doctor will not become reality.

This work is supported by a grant from the International Development Research Centre, Ottawa, Ontario, Canada.

REFERENCES

1. Sidel, V. W. *New Engl. J. Med.* 1972, 286, 1292.
2. Sidel, V. W. *Int. J. Hlth Serv.* 1972, 2, 385.
3. Ronaghy, H. A., Cahill, K., Baker, T. D. *J. Am. med. Ass.* 1974, 227, 538.
4. Ronaghy, H. A., Solter, S. L. *Lancet*, 1973, ii, 427.
5. Gringras, G., Geekie, D. A. *Can. med. Ass. J.* 1973, 109, 150A.
6. Horn, J. *Away With All Pests*. New York, 1972.
7. Pickowicz, P. G. in *Modern China and Traditional Chinese Medicine* (edited by G. B. Ruse); p. 124. Springfield, Illinois, 1973.
8. Livingston, R. B., Mahloudji, M. *Pak. med. J.* 1970, 3, 38 (abstr.)

Occasional Survey

MANIPULATING THE PATIENT

COMPARISON OF THE EFFECTIVENESS OF PHYSICIAN AND CHIROPRACTOR CARE

ROBERT L. KANE CRAIG LEYMASTER
DONNA OLSEN F. ROSS WOOLLEY
F. DAVID FISHER

Department of Family and Community Medicine,
University of Utah College of Medicine, Salt Lake City,
Utah 84132

Summary Patients identified through Workmen's Compensation records as having been treated for back or spinal problems by a chiropractor or a physician (110) were interviewed to determine their functional status before and after the treatment and their satisfaction with the care received. Opinions of both the patients' perception of improvement in functional status and patient satisfaction, chiropractors appear to have been as effective as the physicians they treated as were the physicians. In two groups of patients were not significantly different with regard to age, sex, race, education, marital status, income, hypochondria, or attitudes toward the medical profession in general.

INTRODUCTION

The medical profession's disdain for chiropractic persisted since the first emergence of the practice at the end of the nineteenth century. None the less, the public turns to chiropractors for assistance in more substantial numbers. Kuby cites two studies from the mid-1950s which suggest that 5-7% of families surveyed had consulted a chiropractor in the previous year. Over 16% of the respondents expressed a willingness to use such a practitioner.

In spite of the opposition of organised medicine, chiropractors are now eligible for reimbursement under Medicare as a result of PL 92-603. Ballantine estimates the position of many physicians²:

The inclusion of chiropractic in any health care

program, public or private, is not in the public interest. There is no reason to believe that further studies of chiropractic would bring forth new facts to negate the findings previously published by knowledgeable investigators of unquestionable integrity."

Ironically, there is a scarcity of scientific data on the validity of chiropractic theory or the effectiveness of chiropractic therapy. The first experimental study of the basis for the theory of vertebral manipulation to be published in a recognised scientific journal appeared in 1973.³ However, the public continues to find solace in the services offered by these practitioners, as evidenced by the continued use of their services. In recognition of this public support and prompted by the current medical furore over the Medicare regulations, we felt it appropriate to attempt an evaluation of the effectiveness of chiropractic treatment, regardless of the theoretical validity of the methods. If chiropractors are able to improve their patients' functional levels, as judged by the patients themselves, this evidence would be a first step in bringing factual data and rational discussion to an overheated subject.

METHODS

To establish our sample, we reviewed all claims of the Utah State Insurance Fund (Workmen's Compensation) between July and December, 1972, to identify neck and back injuries (table 1). From these, those patients living within an hour's travelling time from the university were listed. Workmen's Compensation permits the injured worker to select his therapist from among physicians,

TABLE 1—UTAH STATE INSURANCE FUND WORKMEN'S COMPENSATION NECK AND BACK INJURIES, JULY-DECEMBER, 1972

	Statewide	Target area
M.D. patients	482 (60%)	336* (55%)
D.C. patients	175 (22%)	147† (21%)
D.O. patients	14 (2%)	13 (2%)
Both (M.D. and D.C.) ..	47 (6%)	44 (8%)
Type of practitioner consulted not clear in records	77 (10%)	67 (11%)
	795 (100%)	607 (100%)

* 145 randomly sampled for this study.
† Included in study.

Appendix C - India - A Case Study of Health Center Effectiveness

Nowhere is the health center concept more established than in India. Over the past twenty years over 5,000 such centers have come into being to serve the health needs of India's rural people.

The study reported on in the attached article addresses the question of the effect that this massive health input has upon the health and satisfaction of the people it serves. The results and conclusions presented are essential reading for anyone interested in understanding the problems and challenges of delivering health services to rural people of the developing world,

Health Behaviour of Rural Populations

Impact of Rural Health Services

D Banerji

A study of the interaction between the health practices that are introduced through the PHCs and the pre-existing health practices within the population can provide very valuable data for policy formulation, planning and implementation of rural health services in the country.

This article presents the conclusions of a research project undertaken to examine the nature and the current status of the interaction between the health practices introduced through the PHCs and the pre-existing health practices in rural populations in India.

How far have the PHCs succeeded in influencing the rural health culture in India?

IN the past two decades an extensive network of over 5,000 primary health centres (PHCs) — one for a population of 80,000 to 100,000 — has been established to serve as a nucleus for providing some degree of integrated, preventive and curative services to the rural population of India. In the course of time, with integration to various extents of programmes for mass campaign against certain specific health problems, such as malaria, smallpox, leprosy, trachoma and filaria, and rapid population growth, there has been considerable expansion of the activities of these primary health centres. A study of the interaction between the health practices that are introduced through the PHCs and the pre-existing health practices within the population can provide very valuable data for policy formulation, planning and implementation of rural health services in the country.

Anthropologically, the activities of a primary health centre represent a purposive intervention to change for the better some aspects of the pre-existing health culture of a community. The health culture of a community is a component of its overall culture, which responds to a variety of social, economic, political and technological forces. Among other factors, the health culture of a community is formed by :

- (a) the cultural meaning of health problems;
- (b) cumulative health practices, derived from various systems of medicine, home remedies and non-professional sources, that are acquired by the community as its social inheritance;
- (c) diffusion of health practices from outside;
- (d) active efforts to acquire health practices from outside; and
- (e) cultural innovations by the current generation to more effectively deal with the prevailing health problems.

A research project was undertaken to examine the nature and the current status of this interaction between the health services that are introduced through the PHCs and the pre-existing health practices in rural populations in India: how far have the PHCs succeeded in influencing the rural health culture in India?

DESIGN OF THE STUDY

In order to get data on health behaviour under relatively more favourable conditions, a deliberate effort was made to select, in the first instance, PHCs and villages which are much above the average. Of the 13 villages in which the depth study has been completed, 7 are not only the headquarter villages of the PHCs, serving a block of between 60 and 200 villages within a radius of 30-50 kms, but they are also the focal points for political, social, educational and economic activities of the block. The remaining 6 villages are also above the average for the blocks, being situated between 5-10 kms away from the PHC, with good transport links with it. The selected blocks, in turn, are among the better blocks of the district and the districts are among the better districts of the state. The states chosen — Karnataka (2 PHCs), Rajasthan (1 PHC), Uttar Pradesh (2 PHCs) and West Bengal (2 PHCs) — are from four regions of the country. Later on the findings from these four states were cross-checked at the state level with six other states — Andhra Pradesh, Bihar, Gujarat, Kerala, Maharashtra and Tamil Nadu — in all covering 77.8 per cent of the population of the country.

The selected PHCs are also above average: they had in position all the relevant sanctioned staff; they are also all well established PHCs, providing services to the villages for 10 years or more. Also, they are not atypical in

terms of their location, population size and other social, cultural, economic and demographic characteristics.

Considerable attention was paid to developing a methodological approach that is specially tailored for studying the health behaviour of villagers (including their behaviour in relation to the PHC services) against the background of the total village culture. The field work was started in May 1972. Research investigators lived in these villages for 3-5 months (depending on the size) and made special efforts to get themselves accepted by all the segments of the village community. Apart from collecting data through village informants — panchayat members, school teachers and other formal and informal village leaders — the investigators identified informants and some "ordinary" members from each segment of the village community and made observations and conducted depth interviews to understand the health culture of the village against the background of its total culture. They also prepared case reports to provide a deeper insight into the response of the different segments to health problems in the fields of medical care, family planning, maternal and child health, communicable diseases, environmental sanitation, etc. Their stay in the villages also enabled them to make direct observations, followed by depth interviews, of the actual behaviour of the villagers when they encountered certain specific health problems. They could also study the interaction between the PHC personnel and the villagers, both when the former visited the village and when the villagers visited the PHC. Apart from these efforts to ensure that in-depth qualitative data were obtained from all the segments of the entire village community and they were as far as possible, checked and cross-checked, a quantita-

tive dimension was given to some of the main qualitative data by framing an unstructured interview schedule on the basis of these qualitative data and administering it to a 20 per cent stratified random sample of the village households. 703 households were included for interview through these schedules.

As an additional safeguard, after completion of the field work in the villages of a PHC, some of the data concerning the health behaviour of the community were cross-checked by the investigators with the personnel of the PHCs. This interview also provided data concerning the activities of these persons. This cross-checking was extended to the level of the concerned personnel at the state directorates of health services. Interview of the state level personnel was conducted by the author. An additional six states were added to the original four states to examine how far the findings from these four were also applicable to the other states. In all 107 persons were interviewed at the state level. All of them were asked a specific set of questions which were formulated on the basis of findings at the village and PHC levels.

Note has also been taken of the findings from other relevant studies conducted elsewhere, particularly from those of National Tuberculosis Institute, Bangalore, Planning Research and Action Institute, Lucknow, National Institute of Health Administration and Education, New Delhi and Rural Health Research Centre, Narangwal. These studies varied widely in their objectives, research design, methods, data collection and analysis and interpretation of data. However, broadly, they have tended to reinforce some of the main conclusions of the present study.

STANDARDISING OF DATA COLLECTION

Recognising that the complex nature of the problem for this study calls for a new and a rather exacting methodological approach, considerable efforts were made to ensure that the data collected by all the investigators are of a minimum acceptable quality. Six investigators were carefully selected out of the large number of applicants. Apart from the research protocol, documents were specially prepared to (i) describe the research tools to be used for the study; (ii) give a detailed account of the procedure for field work, including checklists, explanatory notes and an account of the rural health problems in India and job description of the personnel of the PHC; (iii) describe in details the procedure for collecting the quantita-

tive data — sampling, schedule construction, development of interview situation and conducting the interview; and (iv) cross-check the data with the PHC personnel. Prior to field work, the investigators underwent an extensive training at the Centre of Social Medicine and Community Health of the Jawaharlal Nehru University when these documents were discussed at length. The quality of the field work was also constantly monitored by the author through examination of the weekly reports from each investigator and sending him/her feed-back instructions, cross-checking of the findings among the investigators, periodic assessment meetings of the investigators at the Centre and on-the-spot study of field work of all the investigators by the author.

Use of a wide range of social science tools to study populations which are subject to a very wide range of social, cultural, political, geographical, economic and epidemiological variations calls for an elaborate mechanism for data analysis and their interpretation. It was, therefore, realised that pending such elaborate data analysis and interpretation, a preliminary report is prepared on the basis of a general examination of the data collected thus far at the village, the PHC and the state levels, including hand-sorting and hand-tabulation of the quantitative data, to present those outstanding findings which: (a) can easily be singled out at the present state of data analysis; (b) are applicable to a large section of the rural population of India; and (c) are immediately required for formulating a more rational approach to the development of the rural health services in India.

These data have already been presented to the Union Ministry of Health and Family Planning Committee on Utilisation of Indoor Beds in PHCs and they were given due consideration in the course of its deliberations.

SOME SALIENT FINDINGS

Taking into account the social and economic status of the people, the epidemiology of health problems and the nature of the health services available, it is not surprising that problems of medical care should be by far the most urgent concern among the health problems in rural populations. But the surprising finding is that the response to the major medical care problems is very much in favour of the western (allopathic) system of medicine, irrespective of social, economic, occupational and regional considerations. Availability of such services and capacity of patients to

meet the expenses are the two major constraining factors.

On the whole, the dispensary projects a very unflattering image. Discrimination against the poor and the oppressed, poor quality of medicines (only red water), lack of medicines, over-crowding and long wait, nepotism, bribery and indifferent and often rude behaviour of the staff are some of the charges that have been levelled against most of the dispensaries. Complaints about medicines and over-crowding and long wait are made even against the best of the PHCs studied.

Because of the very poor image of the PHC dispensary and its limited capacity, it is unable to satisfy a very substantial proportion of the demand of the villagers for medical care services. This enormous unmet felt need for medical care services is the main motive force in the creation of a very large number of the so-called Registered Medical Practitioners (RMPs) or "quacks". The RMPs are thus in effect created as a result of the inability of the PHC dispensary or other qualified medical practitioners to meet the demands for medical care services in villages.

Apart from these, depending on the economic status of the patient and the gravity of his illness, villagers seek help from government and non-government medical care agencies in the adjoining (or even distant) towns and cities. There are several instances of families having been totally ruined in the process of meeting medical care expenses for major illness of the breadwinner or of other family members.

There are numerous instances of adoption of these healing practices. But among those who suffer from major illnesses, only a very tiny fraction *preferentially* adopt these practices, by positively rejecting facilities of the western system of medicine which are more efficacious and which are easily available and accessible to them. Usually these practices and home remedies are adopted: (i) side by side with western medicine; (ii) after western medicine fail to give benefit; (iii) when western medical services are not available or accessible to them due to various reasons; and (iv) most frequently, when the illness is of minor nature.

A very significant finding of this study is that the family planning programme has ended up in projecting an image which is just the opposite of what was actually intended. Instead of projecting an image which reflects respect for dignity of the individual — the so-called democratic approach which

offers free choice of methods to the users, and which ensures better health services — the image of the family planning workers in rural areas is that of persons who use coercion and other kinds of pressure tactics and offer bribes to entice people to accept vasectomy or tubectomy. There are, on the other hand, a few workers who invoke pity of community leaders by making pathetic entreaties to them to "give" them some cases to save them from losing their jobs. To a large section of the villagers, the inverted red triangle and the workers behind this banner invoke a feeling of strong antipathy.

There have been numerous complaints from the villagers that they got no help from the organisation when they encountered complications following acceptance of family planning services — IUCD, vasectomy and tubectomy. These dissatisfied acceptors have been allowed to freely spread scare stories regarding these methods. Failure to provide even a very rudimentary system of health services, particularly curative services, has tended to reinforce this negative image.

Because failure of workers to develop rapport with the villagers, sometimes the villagers are unable to meet their needs for family planning services. Negative response invoked by the highhanded attitude of the family planning workers and the single method mass approach usually adopted by them often obscured the fact that many villagers actively seek family planning methods of their choice and these demands remain mostly unmet due to lack of response from the field workers.

There are several instances of mothers, who, failing to get suitable family planning services from the PHC, took recourse to induced abortions to get rid of unwanted pregnancies. This not only points to the failure of the programme to meet their needs for the services but it also draws attention to the failure of the programme to offer suitable abortion services to mothers with unwanted pregnancies, despite the passage of the abortion bill.

Most of the Nirodh users have to get their supply from the commercial channels. The depot holders are virtually non-existent and the free supply from PHC, according to some villagers, often finds its way into the market and is sold through the commercial channel.

The supply of iron and folic acid tablets and tetanus toxoid injections to pregnant women, immunisation and nutrition programmes for pre-school children and vitamin supplements to the population, all of which are supposed to be offered by the family planning pro-

gramme, are virtually unknown in the 13 villages studied.

Another very significant finding of this study is that there is considerable unmet need for the services of the Auxiliary Nurse Midwife (ANM) at the time of child-birth. Villagers are keen to have the ANM's services because they consider her to be more skilled than the traditional *dai*. Wherever the ANMs have provided services, the *dai*'s role has become less significant. It is significant that even those ANMs who have tarnished their image by openly carrying on extramarital affairs within the village continue to command respect from villagers.

The overall image of the ANM or the LHV in villages in North India is that of a person who is quite distant from them — meant only for special people or for those who can pay for her services. She is not for the poor. She can be called only when there are complications and then also she should be paid. She is not expected to visit them during the pregnancy or after the delivery. In the villages in the South, the position is (only) relatively better, though there also the utilisation of the ANM is much below the optimal level, thus leaving substantial unmet felt needs. Antenatal and postnatal care of the mothers, as well as care of the children are virtually absent even in the villages where PHCs have been functioning for a very long time.

Lady doctors, whenever available, are even more inaccessible than the LHVs and ANMs. The villagers actively seek their help or even take the patients to the city hospital in the case of intractable obstetrical complications. These data once again belie the prevailing notion that the illiterate, superstitious and ignorant villagers do not accept offer of scientific health care services and, instead, they go for primitive health practices.

They conduct the majority of the deliveries even in the villages where the PHC is located. In the villages with no PHC, their sway is almost complete. It is noteworthy that they seek help from the ANM, LHV or Lady Doctor for complications which they are unable to manage. Use of unclean instruments and adoption of cruder methods by the *dais* and relatives and friends can be held responsible for the much more frequent occurrence of neonatal tetanus and other complications. But, in contrast with the ANM and the LHV, they either don't cost anything or their charges are moderate, they are easily available and accessible at any hour of the day, they readily pay repeated visits to the mother

during the pregnancy, labour and after labour, they perform such chores as massaging of the mother, looking after the infant, washing the clothes and disposing of the placenta and other solid material and, above all, being a useful integral part of the village social system, they inspire confidence among the villagers and unlike the ANMs and LHVs, they do not subdue them by their curt or even rude behaviour. As in the case of the Registered Medical Practitioners, confinement by relatives and friends and the indigenous *dais* is popular among the villagers not because of their intrinsic merits but in the absence of suitable services from the ANM/LHV/Lady Doctors, they are compelled to settle for something which they consider to be inferior but which is all that is available and accessible to them.

These are the two programmes which can be stated to have attained some success in reaching the grass-roots. Despite several complaints regarding the sincerity of these workers, there is almost universal agreement among the villagers that these workers do visit the community — they reach people in their homes. It is, however, interesting that frequently the villagers do not associate them with the PHC:

Q: Does anybody from the PHC visit your village?

A: Nobody.

Q: Anybody who asks about fever, gives medicines and writes on the wall?

A: Oh, yes, the malaria man. He visits once in two-three months.

Q: Anybody giving smallpox vaccination?

A: Yes, he visits three-four times a year and also goes to the school to vaccinate the children.

Q: Have you vaccinated all your children?

A: Yes.

Except when there are understandable compulsions such as the prospect of the poverty stricken mother losing wages for 4-5 days at the peak agricultural season due to the child's vaccination reactions and some cases of orthodoxy, there is general acceptance of smallpox vaccination in village communities.

The number of children who are left unvaccinated due to lapses of the parents appear to be a very small fraction of those who remain unvaccinated due to the lapses of the vaccinators and their supervisors. During an outbreak of smallpox in a village where the study was going on, the organisation was seen to react very sluggishly, both in terms of getting the information and in

12

terms of taking preventive measures. Also, finding little to choose between treatment of a smallpox case by western methods and depending on the goddess Sitala for the survival, the villagers adopted a mixture of both these practices.

Patients suffering from tuberculosis, leprosy and trachoma get very little benefit from the corresponding national programmes. They are forced to seek help from elsewhere. Such help is not only much more expensive and bothersome, but it is also much less efficacious, both clinically as well as epidemiologically. Other preventive measures, of course, are almost non-existent.

Usually, the Sanitary Inspector of the PHC is not even associated by the villagers with immunisation programmes, cleaning and disinfection of wells and ponds, garbage disposal, promotion of sanitary latrines, etc. "Inspection" of village food and milk vendors remains, in the villagers' eyes, his main preoccupation in the field of environmental sanitation. Although, by far the great majority of the villagers still go to the fields for defecation significantly, impelled by sheer felt need, a number of them have incurred considerable expenditure to get latrines of various types installed in their homes. They got little help in any form from the PHC. This is another instance of the health institution falling behind even the already existing felt need for preventive services in the community.

There are no sustained efforts to deal with such diseases as cholera, diphtheria and guineaworm and hookworm infestations as public health problems. When, however, epidemics of cholera and diphtheria struck separately two of the study villages when the field work was going on, the PHC and the district health authorities encountered little difficulty in getting community participation in the anti-epidemic measures. There were also instances, of villagers, on their own, seeking triple antigen immunisation from the PHC. Very often even this need was not met by the PHC.

Registration of births and deaths are very incomplete. School health services and nutrition services are virtually non-existent.

Interview of the workers at the PHC revealed that the disorganisation of the PHC is even more advanced than what came out of the study of the villagers. This disorganisation is manifest in all the activities of the PHC — medical care, family planning, maternal and child health services, control of communicable diseases and other community health activities. On more than one occasion

the interview was enough of a stimulus to trigger off a spontaneous outpouring of a torrent of comments from some PHC workers on the very dismal state of affairs in these institutions. Even in the PHC which had an exceptionally dedicated Medical Officer-In-Charge, apart from some improvement in the medical care and maternity services, which, nevertheless, is very much below the full capacity of the organisation, there is little activity in the other fields.

Officials of the state health directorates, after ensuring that they can respond to the questions put to them by the author as public health workers, rather than as government officials, were also quite forthright in pointing out major flaws in the organisation and management of rural health services in their respective states. Their response to these questions provide grounds to believe that the findings from the villages and PHCs of the four states are also likely to be valid for the villages and PHCs of the other six states of the country. Their major comments:

- (a) The ideal of the primary health centre exists only in name. It is in total disarray. The team leader of the PHC, who is the pivot of the institution, not only lacks the qualities needed to provide leadership but he is also a most reluctant worker, having interests which are often diametrically opposed to the interests of the PHC.
 - (b) The medical colleges have conspicuously failed in giving the needed orientation to the graduates. The departments of preventive and social medicine have not only failed to bring about the expected social-orientation of medical education, but, in the bargain, they have also lost their grasp over the practical community health issues. There is an urgent need for thorough review of their role.
 - (c) A number of directors of health services drew attention to the very unfavourable impact of the family planning programme on the rural health services. Too much of pre-occupation of the PHC staff with the attainment of family planning targets has led to further neglect of the health programmes. The mass vasectomy camp approach to family planning has further extenuated this problem. The entire health work comes to a virtual standstill for over four months preceding a mass camp. Some of them dramatically brought home this point by producing graphs to show that outbreaks of smallpox
- and cholera and gastro-enteritis synchronised with the organisation of the mass camps. A number of workers attributed serious setbacks to the malaria and smallpox eradication programmes to preoccupation of the PHC staff with family planning work. The mass vasectomy camps seem to have aroused serious misgivings even among some of the state family planning officers. With the adoption of a "high" level of incentives for the mass camps, there is a tendency among the potential acceptors to avoid the regular "low" incentives and wait for the next mass camp, thus leading to a very sharp fall in the number of acceptors for the remaining ten or eleven months of the year.
- (d) There is a palpable lack of political will to develop health services for the rural population. Several public health workers pointed out that despite protestations of concern for the villagers' health needs, the political leadership is much more inclined to develop institutions in urban areas — more hospital beds, more prestigious super specialities, more intensive care units and more facilities for education and research in sophisticated and prestigious medical institutions. Instead of overcoming the wasteful obstructions from the bureaucrats, they actively nurture them. There is also rampant interference in the day-to-day administration of health services — in the creation of posts, in appointments and in promotion and transfer of health personnel. Democratic decentralisation of the administration in some states have made the services in these states even more vulnerable to undue political interference.
 - (e) There is a considerable degree of unmet felt need for all types of health services: apart from some very overt medical care needs, there is considerable need for services for maternal and child health, nutrition, immunisation, environmental sanitation and water supply, school health and health and family planning information.
- Extensive prevalence of abject poverty, as a result of which more than half of the population is unable to meet even the minimum dietetic calorie needs and appalling conditions of sanitation, water supply, housing and education present an ecological setting which is conducive to widespread prevalence of various types of health problems in the community. These health problems form only a small

component of the overall gloomy picture of the way of life in Indian villages. Ignorance, superstition, suspicion, apathy and fatalism should thrive in such a milieu. It is therefore a tribute to the strength of the culture of the rural populations in India that, despite these overwhelming odds, their health behaviour has retained so much of rationality.

As in the country, as a whole, as indeed in the international fields, in the villages also the conditions of acute poverty and helplessness is associated with a political system which is dominated by a tiny group of highly privileged persons. This political power, in turn, vests this group with additional power to further exploit the weaker sections. Over and above, they get support and sustenance from similar power elites higher up in the hierarchy, which extends right into the international arena. Each one of the villages studied thus presented a picture of a rather stable equilibrium in which a vast majority of the village population is kept effectively subdued by a small privileged group which has acquired political power by controlling land, trade, co-operatives, industry, moneylending, education and the law and order and the judicial systems. Experience has taught these weaker sections that efforts to stand up to the prevailing order will invite very deterrent punishment. They have thus learnt to live with the system, thus giving it "stability".

Because of their urban orientation, workers of rural health and other development agencies generally have a strong distaste for rural life. This distaste is for the entire rural way of life, and not simply for the very poor facilities available there. The health workers tend to keep a distance from the rural population as a whole. However, as they are required to work for the rural populations, they take advantage of the village power structure and confine themselves, as far as possible, to satisfy the privileged gentry of the village. In doing so they (a) win approbations and rewards from the so-called community leaders who have the ear of their superior officers and of the political leaders at the higher scales; (b) deal with the least disagreeable segment of the community; and (c) get a free hand to "tackle" the rest of the community.

IMPLICATIONS OF FINDINGS

These findings have two implications that are of far-reaching significance.

- (1) That there is considerable unmet felt need for all types of health and family planning services. The task before health administrators

is that of taking suitable steps to meet these unmet felt needs.

- (2) There is considerable unused capacity in the existing health services of the country. The task here is that of mobilising this unused capacity to meet the already existing unmet felt needs for health services.

Mere quantitative additions to the existing structure of health services will amount to subsidisation of inefficiency and waste, at a time when the available resources are so scarce.

RECOMMENDATIONS

The malady of the rural health services of India is a part of the malady that is afflicting almost all walks of life of the country. It is very deep seated. Mere symptomatic "treatment" of the health services by making quantitative additions or by giving "orientation training" to the ANMs, family planning workers, to the PHC doctors or even to the administrators at district, state or Central levels will only obscure the real malady. The malady lies deep in the culture of the political leadership of the country — their lack of real commitment to the welfare of the weaker sections of the population. A sweeping change in his culture at the political level — a cultural revolution — is needed as a remedy to bring the value system of the political leadership in tune with the Directive Principles for the State Policy of the Constitution. This, in turn, should lead to sweeping changes in the "culture" of the bureaucracy, the technocracy and the various institutions for education and training and research. They must all become subordinate to the interests of the population of the country as a whole, rather than those of a tiny privileged class.

These developments will initiate a number of secondary changes, for example, revitalisation of the administrative machinery and social orientation of education and training of health workers. These changes will significantly influence the quality of policy formulation, planning, research education and training and implementation and evaluation in the field of rural health services in India. It is possible to identify three phases in this process of strengthening of rural health services in India:

- (1) More efficient and more effective utilisation of the resources that are already available for rural health services; through improving the managerial competence of the physician in charge of the

PHC so that he can provide more effective leadership to his team, for example;

- (2) Restructuring of the rural health programmes, by adopting an approach of systems analysis and operational research of varying grades of sophistication, to get increasingly more favourable returns from the resources that are already assigned to the rural health services. India's family planning programme can be taken as an instance. If necessary, additional data are collected to supplement the already available information to systematically scrutinise the programme as an entire system — as a complex interaction consisting of a number of components, such as organisational structure, effectiveness of the technical methods, logistic considerations such as supplies and transport and community participation — and to identify an alternative system with a more effective blend of components which will give greater returns from the investment of resources. This approach will be applicable to still bigger systems. Such a broad based study, for instance, might lead to a shift of emphasis from the urban to the rural, from the curative to the preventive and from the superspecialities to serve the selected few (for example, brain surgery) to routine measures (for example, surgery for strangulated hernia and obstructed labour) to alleviate the suffering of the very many; and
- (3) Adopting the same research approach to identify areas of rural health services which should get priority for additional investment of resources.

SOME RECOMMENDATIONS FOR IMMEDIATE ACTION

Presuming that there is the required political will to bring about the needed radical changes in the structure and functions of the health system of the country, pending the availability of results of more elaborate operational research studies, the findings of the present study provide reasonably good grounds for making forecasts about the lines of action that may be adopted as an emergency measure to meet some of the very urgent and immediate requirements of the rural health services of India:

- (1) Capability to deliver goods, rather than seniority or other con-

siderations, should guide appointments to key positions for the delivery of health services to the weaker sections. After providing them with the required facilities, the performance of the selected persons should be carefully evaluated and they should be rewarded for their achievements and be held accountable for their failures.

- (2) Most of the national programmes require radical restructuring. However, because of its importance, its size and its state of near paralysis, the family planning programme should be singled out for immediate action. This action should be directed towards stopping any further waste of resources and towards checking any further demoralisation of the staff and of the community. The mass vasectomy camp approach should be immediately stopped. The "target" system and methods involving coercion and enticement should also be halted immediately. Instead, family planning workers and family planning work should be totally identified with community health work.
- (3) At the most peripheral level, all curative and preventive services to a village or a small group of villages should be provided by a team of a male and a female health worker. They should correspond to the barefoot doctors of China. They should provide elementary medical care, conduct childbirths, meet family planning needs, immunise children against smallpox, tetanus, diphtheria, pertussis and tuberculosis, offer nutrition programmes for pre-school children, do malaria surveillance work and provide health and family planning information to the community. Despite some very glaring weaknesses in the existing programmes for training of basic health workers and auxiliary nurse-midwives, these workers have already acquired some capabilities for performing these tasks. Good supportive supervision will reinforce this competence. Other workers who are requisitioned for work at the peripheral level are given short-term on-the-job training as an emergency measure. In due course it should be possible to formulate a more adequate training programme for the peripheral workers so that they can perform their duties even more effectively.
- (4) The most peripheral workers

should have the backing of the entire health organisation, going up to the highest level. They should get full support and help from the medical officer of the PHC and other supervisory staff. In cases when they require more sophisticated types of services, depending on the grade of sophistication required, steps should be taken to ensure that they are actively provided access to the already existing institutions having facilities of corresponding grades of sophistication.

- (5) In case it is at present not possible to provide maternity services to all the villages, the peripheral female health workers as well as their supervisors should actively work with the local *daïs* and give them on-the-job training. These peripheral level workers should have available to them the support of the nearest available lady doctor, who also should have available to her facilities to send more complicated cases to more sophisticated institutions.
- (6) The doctors in PHCs should be given clear guidelines for action. Their supervisors should provide them all the needed support. Apart from providing leadership for community health work in their area, they should offer easily accessible and efficacious medical care services to the patients, including facilities for diagnosis and supervised treatment of pulmonary and other forms of tuberculosis, leprosy, filaria and trachoma.
- (7) After being provided with the required facilities and guidance, every health worker of the PHC should be held accountable for his/her work. They should be rewarded for their achievements and suitable action taken in case of shortcomings.
- (8) Immediate steps are taken to see that all rural health institutions have adequate stock of the basic drugs and equipment needed for day-to-day work and they are in a position to obtain supplies of special drugs at a short notice. For this purpose it will be necessary to gear the entire drug industry of the country to produce some, say, 80-100 drugs which are of vital necessity for the large bulk of the population of the country.
- (9) Available transport facilities should be fully mobilised to provide support to community health work, including development of

effective referral services.

- (10) After ensuring utilisation of the existing unutilised capacity of the rural health services, additional resources should be made available to strengthen the supervisory staff at the district and PHC levels. This should be followed with further strengthening of the cadre of the most peripheral workers, with a corresponding increase in the strength of the supervisory tiers.

CONCLUSIONS

There is considerable unmet need for curative, preventive and family planning services among rural populations in India at a time when there is considerable under-utilisation of even the very limited rural health and family planning services that have been made available to them. These findings very seriously call into question some of the basic principles underlying the development of the health services of the country in general and those of the rural areas in particular. How effective have been the efforts to bring about social orientation of education and training of health workers? How effective have been the upgraded departments of preventive and social medicine in medical colleges and other institutions of community health in serving as the pacesetters for inducing changes in the culture of the health professions? How effective has been the break with the traditions of the colonial administration — break with the dominant and overbearing role of the bureaucratic administrators of the Indian Civil Service and break with the militaristic one-track mind of the technical officers of the old Indian Medical Service? How effective have been the efforts to develop a new administrative culture which can provide more effective health services to the population of the country? Above all, how serious has been the leadership of the country in squarely confronting the forces of *status quo* which come in the way of developing rational health services in the country?

These intentions have been repeatedly reiterated during the past 25 years. There is a very urgent need for translating all such pious intentions into concrete action programmes. For this there has to be a radical departure from the past. For making the health services really meaningful to the population of the country, it will be necessary to bring about fundamental and decisive changes in the "culture" of the health services in India — changes in the value system of the political leadership and changes in the culture of the entire health services system of the country.