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Community health serv. -*

STUDY TOUR ON THE TRAINING AND UTILIZATION
OF BAREFOOT DOCTORS IN COMMUNITY HEALTH SERVICES IN THE
PEOPLE'S REPUBLIC OF CHINA

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I. INTRODUCTION

This is the report of a Study Tour funded by the United Nations Development Programme (UNDP) and executed by the World Health Organization (WHO) in collaboration with the Ministry of Public Health of the People's Republic of China. This is the first Study Tour in China on the Training and Utilization of Barefoot Doctors in Community Health Services.

Primary health care is one of the main concerns and priorities of WHO and the Chinese experiences in developing the primary health care system, fully integrated with socio-economic development, to cover the total population with at least minimum health services are of particular interest.

The health care delivery system in China is based on a comprehensive approach to provide both preventive and curative care, in an integrated way, to all its population, with particular emphasis on community health services for rural areas where 80% of the population live. The provision of an adequate level of health care for the total population, based on a well developed primary health care system, has been achieved in a remarkably short time period in China. The Chinese people and Government have used unorthodox and new approaches to quickly solve their health problems which also afflict other developing countries. The utilization of barefoot doctors is such an approach and forms the cornerstone of the primary health care system in both rural and urban areas in China. This original feature of the Chinese health services has provoked worldwide interest and lends itself readily to study by interested and responsible health officials from developing countries.

The Study Tour was organized with a view to giving participants from developing countries throughout the world an opportunity of studying at first-hand the training and work of barefoot doctors for and in the community health services of China. This realistic and proven solution to extend the coverage of health services to the total population, especially in rural areas, could be adapted by many countries wishing to extend and improve their own health services. Participants were able to see how community health services were planned, organized and implemented in China, their functioning, and the key role played by barefoot doctors in rural areas. Participants also organized an exchange of views and experiences amongst one another and with their Chinese colleagues.

The objectives of the Study Tour were that participants should be able at the end of it to:

- (i) describe how community health services are planned, organized and implemented in China;
- (ii) evaluate the role of barefoot doctors in rural and other areas;
- (iii) describe the training they receive; and
- (iv) assess to what extent the Chinese experiences could be applied and or adapted to the needs of their own countries and the resulting benefits to the population.

In answering a pre-Study Tour questionnaire (see Annex VIII) some of the participants have added the following objectives to the Study Tour;

- (i) to exchange experiences and prospects of developing primary health care in their own countries; and
- (ii) to assess the extent of integration of traditional and western medicine in China.

Twenty one participants were invited to the Study Tour and 18 nationals from 15 countries and five continents actually attended the Tour. One invited participant resigned at the last minute, one fell sick and one did not come without notice. There were two WHO staff members, one of whom served as coordinator/leader of the Study Tour while the other was the rapporteur. One consultant for UNDP also participated in the Tour. Annex I lists the participants.

The Study Tour was carried out in Chinese and English, and interpretation was provided from one language to the other. A team of five staff members of the Government of China, including interpreters and under the able leadership of Dr Lo Yi-Chin, Deputy Chief, Division of Rural Health Services, Bureau of Medical Administration, Ministry of Health, accompanied the participants throughout the three weeks. In each city visited, responsible provincial and local officials and interpreters excellently organized the programme in the city and surroundings and provided invaluable support and company. The flexibility and the understanding of the organizers in adapting the programme to the expressed needs of the Tour was remarkable and should be commended in all possible ways. Annex I also lists the liaison officials accompanying the Study Tour.

The participants assembled in Peking on 10 August, 1978. The programme commenced with a general briefing on the history and development of health services in China and, in particular, the role of barefoot doctors. The group spent four days in Peking, then successively four days in Kueilin, six days in Kuangchow and six days in Shanghai.

The Institutions visited may be described as follows:

- (a) hospitals - both city, county and provincial;
- (b) health centres - both urban and rural;
- (c) health stations - both urban and rural;
- (d) medical colleges - both western and of traditional Chinese Medicine;
- (e) Institute of Parasitic Diseases of the Chinese Academy of Medical Sciences in Shanghai;
- (f) establishments for control of infectious diseases and environmental health/epidemic prevention stations;
- (g) homes of both urban and rural dwellers;
- (h) factories.

In addition, there were opportunities to visit the countryside and to participate in the social and cultural life of communities. Annex II lists the itinerary and programme of the Tour.

The methods of the Study Tour included briefings, observation visits, small and large group discussions, exchange of views, questions and answers, and group interaction both between the Chinese hosts and the participants and among the participants themselves. All the discussions were characterized by an atmosphere of frankness, and a genuine wish to share experiences and learn as much as possible from one another.

The three international participants (1 from UNDP, 2 from WHO) constituted a steering committee which met according to needs and discussed all the problems related to the conduct of the Study Tour.

A pre-Study Tour questionnaire was filled out by the participants at the beginning of the Tour. The purpose was to obtain the participants' objectives for the Study Tour and to assess their knowledge about various aspects of barefoot doctors. At the end of the Study Tour, another questionnaire was completed to measure the gain in knowledge and the participants' opinions about the adaptability of the Chinese model of barefoot doctors to their own countries. The questionnaire and the results of the evaluation are described in Annex VIII.

The Study Tour was conducted in a democratic manner whereby the participants themselves developed questionnaires, reported daily on visits and contributed actively to the preparation of the final report. At every opportunity, the participants were consulted and could advise the Tour leader on all aspects of the Tour. For each day of visit to health institutions, one of the participants, by rotation, was appointed to serve as the rapporteur and later presented the daily report to the whole group for discussion. The participants decided on the format and content of the questionnaire to elicit information from the Chinese health personnel in a most systematic fashion (Annex VII). They designed the format of presentation of individual country reports (Annex VI) and the basic contents of this final report.

Such an active role of the national participants was ensured by holding frequent meetings in the evenings, whenever possible, which were chaired in rotation by them. In addition, the experiences in organizing primary health care services in each of the 15 countries were presented as country reports with adequate opportunity for subsequent discussions. The meetings sometimes decided to set up small working teams to prepare proposals which were discussed again in plenary meetings.

Such a democratic and highly participatory procedure not only enabled an intense and highly motivated level of participation by the participants but also ensured that their interests, needs and opinions governed the outcome of the Study Tour. The success of the Tour is in no small measure due to these procedures adopted in addition to the excellent programme, arrangements and support provided by the Chinese hosts. Thus, this report is truly the report of the whole group.

II. SUMMARY OF FINDINGS AND RECOMMENDATIONS

1. Findings

1.1 The Chinese experience

The Study Tour had the opportunity to observe, and discuss, the training and utilization of barefoot doctors, and other community health workers, in different parts of the People's Republic of China. These are the front line health workers providing primary health care to the masses - both rural and urban. The following is a brief summary of the observations of the Study Tour.

Since liberation, the Chinese health services have made giant strides and achieved a complete coverage of the population of more than 800 million in the remarkably short period of less than three decades. The estimated crude death rate has been brought down from 40 per 1000 to 7 to 10 per 1000. Infant mortality is now estimated to be below 25 per 1000 live births and the birth rate is estimated to have been reduced from more than 40 per 1000 to less than 25 per 1000. The health problems posed by uncontrollable epidemics, malnutrition and primitive sanitation have practically disappeared.

These spectacular results have been achieved by a combination of factors. The Chinese Government has integrated health care programmes with socio-economic development of the country and the health system has been adapted to the political realities of the country. Secondly, primary education is now universal all over the country - a far cry from the high illiteracy prevalent before liberation. Thirdly, prevention has been put in the foreground and mass movements have been utilized to give it effect. Fourthly, new health workers and institutions have been developed to provide health care, as feasible now, to all the people rather than wait for conventional health care to permeate to all levels.

The development of health care has followed four often repeated principles - to serve the people, to put prevention first, to integrate traditional Chinese medicine and western medicine and to rely on mass movements. In addition, a fifth directive has been instrumental in taking health care to the unserved population i.e. to put the stress on rural areas. Given these principles, the planning and administration of health services have been decentralized to give initiative and control to the local communities and to promote self-reliance. The cooperative medical service is the cornerstone of health care in the rural areas and is supported by contributions in money from the communes, production brigades, production teams, and labourers. In order to further promote self-reliance, and use all available resources, the rich heritage of traditional Chinese medicine has been fully integrated in the health services.

The unique feature of Chinese experiment in developing new cadres of health personnel is the creation of barefoot doctors and health aides. In the rural areas, they are sons and daughters of the peasants, selected by the peasants in order to serve the peasants. They continue to participate in the productive work of the commune, receive the same emoluments as other members of the commune and perform their health work on a part-time basis. Without any special status, they continue to serve their communities with the spirit of "serve the people" and are in turn fully accepted by, and are a source of pride to, their communities. Similar are the principles in the case of those part-time health workers working in the cities, serving their fellow workers.

The health services at the front line are supported by a structure of secondary and tertiary care. Thus referrals and problems, which are not to be solved in the "front line", are transmitted to higher levels while continuous training, support and supervision are the feedbacks. In the spirit of doing what can be done now, initial training has concentrated on prevention and treatment of commonly seen diseases and further training has been built in when experiences and means of the communities have so permitted. The training is held near the place of work and domicile of the trainees so they are not far removed from their own conditions.

The health personnel and the communities use facilities and equipment they can afford, often built and prepared by their own hands. They grow and collect their own medicinal plants and any surplus is bartered for other medicines. The people collectively participate in the mass campaigns for maintaining and improving their levels of sanitation, the composting of excreta to use as manure, the eradication of four pests (flies, mosquitoes, bed-bugs, and rats) and the control of infectious diseases.

The only question the Study Tour had was about the training programmes and the future plans concerning them. The total coverage of the population has already been achieved and plans are now underway to upgrade the skills of barefoot doctors. However, the training programmes for barefoot doctors, and other categories of health personnel including medical doctors, and the future plans, all seem to rely very heavily on conventional educational practices and on a large amount of theoretical training, by lectures, whose relevance to work requirements does not seem to be sufficiently questioned. New and innovative approaches in educational planning and processes seem to be overlooked. However, these remarks of the Study Tour might, indeed, prove to be unfounded.

1.2 The experiences of participants in their countries

The 18 participants of the Study Tour represented 15 different countries from five continents. By consensus it was decided to integrate into the programme presentations and discussions of the health profile, and ways to solve health problems, of each country. Emphasis was placed on primary health care and manpower development, keeping the Chinese barefoot doctor model as a term of reference to which the nearest "equivalent" personnel in other countries were compared.

Annex VI shows that the great majority of the countries concerned have developed, and are training and utilizing, new types of health workers to respond to the needs of the people. Although the names and the functions vary from country to country, and the exact equivalent of the Chinese barefoot doctor may not be found, the following findings emerge as common denominators:

- (a) the importance of primary health care as the cornerstone of the health care system;
- (b) a great concern for reaching the masses, making the health services available to all;
- (c) a great concern for prevention translated into a general effort to integrate preventive and curative medical services;
- (d) the importance of health education, as a prerequisite for any successful health maintenance programme;
- (e) the importance of health as an integral part of development;
- (f) the need for flexibility and adaptation of health care models to local conditions. This applies to all phases of health care - planning, organization, implementation, evaluation - and to all levels of the health care system.

The Chinese experience, as observed directly by the participants, has confirmed the validity of all these points.

2. Summary recommendations on the Study Tour

The Study Tour was greatly successful in meeting all its objectives and wishes to express its gratitude to the Ministry of Public Health, China, for making excellent arrangements and to UNDP for financing the Tour.

The participants recommend that such study tours be repeated and policy and decision makers, planners and administrators of health services, and of health manpower development, be included. For similar study tours, whether in English or other languages, participants could be admitted from countries which are training or planning to train primary health care workers. The participants should be intimately related to the growth of primary health care services in their countries. In addition, the Study Tour recommends that similar visits be undertaken in other countries with promising growth and development of primary health care.

The Study Tour also strongly recommends that the orientation and detailed outline of the actual programme be discussed fully in advance between the Chinese officials and the executing agency (e.g. WHO) so that appropriate adjustments can be made. If possible, the participants should be informed of the contents of the programme and the administrative arrangements well in advance. Secretarial assistance to type and duplicate notes for discussions would be useful for such tours to be fully effective.

III. SPECIFIC PROJECT ACTIVITIES

1. Organization of health services¹

Chinese health services, since the liberation of the country in 1949, have become an integral part of the political, social and economic fabric of the country. The main thrust of the health services is to "serve the people", and to work for the benefit of the masses and there has been a significant and real decentralization of the managerial structure accompanied by the training of a legion of new types of health workers who can be of direct use to the people.

The Chinese approach to development is a socio-economic one; it does not allow growth without social improvement and only promotes economic growth to the extent to which it can be combined with a higher level of welfare and social efficiency. The economic incentives for increases in production are collective, and not individual. In this context of socio-economic development, the Chinese Communist Party considers health care first as a human right that is essential for the well-being of all people, and then as an instrument for increasing the productivity of the people. Moreover, the Government has been committed to provide health care services to all its people "now" as opposed to an incremental approach to the provision of conventional health and medical care.

The organization and functioning of health services in China is based on four basic principles which were promulgated by the First National Health Conference in 1950 and reiterated frequently thereafter. They are:

- (i) serve the workers, peasants and soldiers;
- (ii) put prevention first;
- (iii) unite doctors of both traditional Chinese and western medicine; and
- (iv) integrate health work with mass movements.

An additional directive was issued on 26 June 1965 by Chairman Mao Tse-tung on the eve of the Cultural Revolution, and it concluded with "... in medical and health work, put the stress on rural areas." Thus, the reorientation of the health services was addressed to the sector where the needs were the greatest and were most inadequately met.

The above principles have been reconfirmed by Chairman Hua Kuo-feng during the First Session of the Fifth National People's Congress. In a speech delivered on 26 February 1978, Chairman Hua Kuo-feng emphasized that: "... the Great Leap Forward, which started in 1958, placed a new accent on agriculture and saw the birth of the first communes as a basis of agricultural development. Several new developments in the health sector took place during this period including a further decentralization of the health services, creation of the rural health centre (hsien) system, the advent of the "barefoot doctor" (the actual term came later with the Cultural Revolution) approach and the use of mobile medical teams; during the same period the cooperative medical system was introduced at the commune level. It was in 1958 that acupuncture began to be used in an initial but systematic manner in anaesthesiology in hospitals.

¹ For further details see "Organization and Functioning of Health Services in China", Report by the World Health Organization, Geneva, 1978.

The major massive attacks on schistosomiasis also date from this year. Of vital importance to the understanding of this period was the general directive called "The Sixty Articles on Work Methods" issued in January 1958."

The People's Republic of China is divided into 22 Provinces, 5 Autonomous Regions (principally where minority nationalities predominate) and three centrally administered Municipalities. The provinces and autonomous regions are divided into counties which are further subdivided into people's communes and then into production brigades. Production brigades, in turn, are divided into production teams. The urban areas in provinces are called municipalities. Municipalities are usually divided into districts (within the cities) and counties (in the rural areas), the districts into street neighbourhoods and the latter into lanes or lane neighbourhoods.

The organization of health services follows the administrative structure of the country. Figure 1 summarizes the structure of the health services. In addition to the health facilities shown in the diagram, there are also teaching hospitals affiliated to medical colleges, both of traditional and of western medicine, and hospitals and health stations attached to large and small industries respectively.

In view of the vast size of the country the organization of health care in China is decentralized and flexible. The Ministry of Public Health, under the guidance of the Central Committee of the Chinese Communist Party, is responsible for broad policy setting and technical direction of health services and financial support of central training and research institutes. In addition, a Central Patriotic Health Campaign Committee, under the leadership of Li Hsien-Ten, Vice-Chairman of the Communist Party and Vice-Premier, gives broad direction to mass health movements e.g. patriotic health campaigns which have a significant impact on the health of the people. A Family Planning Leading Group under the State Council also exists and is headed by Chen Mu-Hua, Vice-Premier of the State Council. Incidentally, family planning is emphasized at all levels in China and the ideal family size is considered to be two children and certainly not more than three children. Although the Tour did not visit the Ministry of Public Health, it is understood to be divided into a general office or administrative department and a number of Bureaus or Offices (e.g. Hygiene, Traditional Medicine, Planning, Maternal and Child Health, Family Planning, Equipment, Foreign Affairs, Policy Studies, etc.).

The policy decisions are implemented and carefully adapted to local conditions by provincial (prefectural), municipal, county and district health bureaus under the general guidance and responsibility of the respective revolutionary committees, which are the administering bodies in charge of all sectors and of general development of the economic, social and cultural life of the people under their aegis.

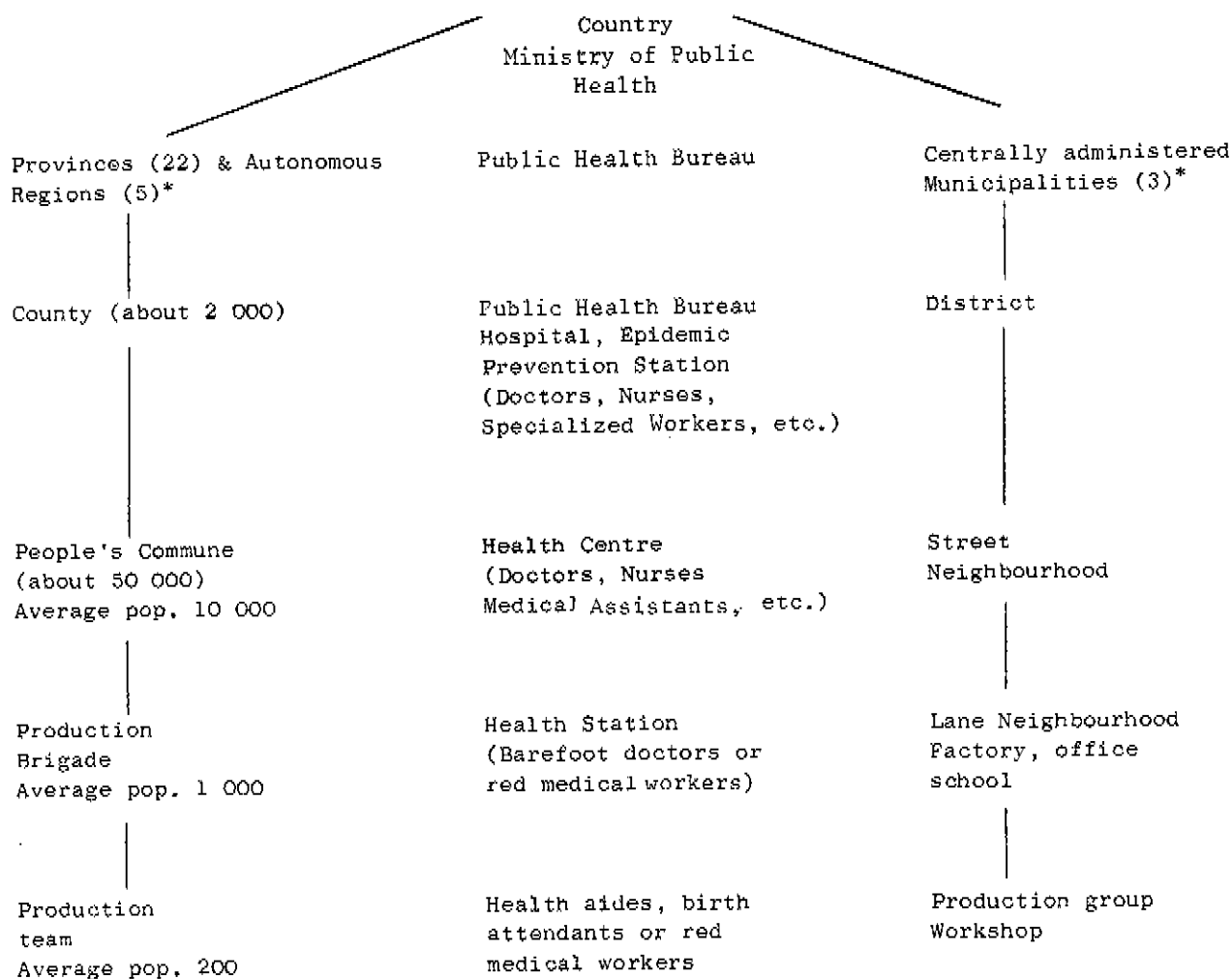
The medical colleges can be either centrally or provincially administered. Although they are administratively under the Ministry, or Bureaus, of Education, technically they are guided by the Ministry, or Bureaus, of Public Health.

2. Financing of health services

There are three basic systems of financing health care in China:

- (i) free medical care for selected population groups e.g. governmental officials, students, etc.;
- (ii) medical insurance schemes for workers and their families; and
- (iii) cooperative medical schemes for the bulk of the population.

FIGURE 1. THE STRUCTURE OF HEALTH SERVICES IN CHINA



* Between provincial and county level prefectures may be found. For simplicity, the diagram distinguishes between Municipalities, and Provinces and Autonomous Regions. However, both contain counties in rural areas and districts in urban areas.

The free medical care for selected categories of population is financed by the Government. Thus, all health expenses incurred by a government official are reimbursed by the Government on presentation of the receipts. This includes the nominal registration fees of 10 fens¹ for each outpatient consultation, cost of drugs, expenses for hospitalization and any surgery that may be required.

In the second scheme, the factories or industrial units as well as the workers and their family members pay contributions to the workers' welfare funds. The contributions vary for the workers and their family members. Costs of medical care to the workers is fully reimbursable while expenses incurred for family members are only partially reimbursed. For example, a factory located in the Pin Chiang street neighbourhood of the city of Kuangchow contributes 1.8 ¥ per year per worker to the welfare fund, in addition to similar contributions by the workers and the fund reimburses the workers for all their medical expenses. The factory also contributes 1.3 ¥ per year for the family members of the workers and one-half of their medical expenses are reimbursed by the welfare fund.

The medical services in the rural areas are financed by cooperative medical funds - most of them established in the late 1960s - either at the brigade or the commune level. One common method of payment is that each commune member pays an annual fee (usually 1 to 2 ¥), the production team pays more or less a matching sum out of its cooperative welfare fund, and the brigade contributes a further fixed sum. Both the contributions and the proportion of expenses reimbursed vary from commune to commune. Some communes are able to pay a substantial part, or even the whole, of the medical expenses incurred by their members in the county or city hospitals, while others are able to bear only a half or a third of the expenses incurred outside the commune.

In the Shou Cheng commune in the Yung Fu county near Kueilin city, each commune member pays 60 fens annually and the commune welfare fund contributes an equal amount to the cooperative medical service. In return, the individual is reimbursed 80% of the costs of medicine at the production brigade level and 50% at the health centre (commune) level and the hospital. In Lou Tang production brigade, Chia Ting county of the Shanghai municipality, each member pays 1 ¥, the production team 1.5 ¥, the brigade another 1.5 ¥ and the commune 1 ¥ - for a total of 5 ¥ for each member. All medical expenses incurred by a commune member are reimbursed except for the 10 fen registration fee. However, the 80 fen daily charge for bed and food for hospital stay is not reimbursed nor is the cost of any blood transfusion (16 ¥ for 100 c.c.).

In all the people's communes visited, the cooperative medical scheme exceptionally helps in paying part or whole of expenses, which are normally to be borne by the individual, if the family has difficulty in meeting these expenses or if the expenses are of a catastrophic nature.

The cooperative medical schemes have occasionally run into difficulties e.g. when a commune runs up big deficits owing to poor management or overuse of expensive drugs. In addition, the commune may find it difficult to subsidise the schemes in bad agricultural years. However, these difficulties, on occasion, are to be expected and the schemes seem to be working very well. Owing to the self-reliance built into these schemes, the difficulties tend to be self correcting as communes learn from their own experiences.

¹ 1 ¥ = 1 yuan = 100 fens = US\$ 0.59 (in August 1978).

There is a very small proportion of population which is not covered by any of the three systems of financing. Included are "enemies of the people" i.e. those belonging to previous landlord class and who have not been fully rehabilitated. Although they can participate in the productive tasks of the commune, they cannot share in some of the privileges e.g. cooperative medical schemes. These individuals have to bear in full their medical expenses.

The financing of salaries of health workers at the production team and brigade level are met from the resources of the teams and brigades. The amount of time the workers spend on health related work is treated the same way as if they were engaged in productive work - in the fields in rural areas, and in the workshops in factories in urban areas. They accumulate work points for this time and thus, a part of their salaries are subsidized by the teams and brigades. In urban areas, the health workers at lane neighbourhoods are treated as if they were full-time productive team members although they may be working only part-time in factories or service units.

The health workers at commune or street neighbourhood level and above are usually paid by the Government.

3. Community Health Services

The two main principles which have influenced and shaped the community health services in the People's Republic of China are self-reliance and service to the people. As a consequence, the Chinese health services have been decentralized with far-reaching effects. More responsibility is being entrusted to the local levels - decisions and actions being shared even at the level of rural production teams and brigades. This has led to the involvement of the community in all actions which affect the health of its members and a further integration of health development with general economic, social and cultural development of the community.

The concept of self-reliance is exemplified by the health workers in communities - barefoot doctors, red medical workers, worker doctors and health aides - who have not only been selected by the people they serve but also work side by side with them when they are not engaged in health related work. They come from, and belong to, the same people - peasants and workers - for whose health they are responsible. Thus, there has been a demystification of the role of health workers which has led to a system of unsophisticated and effective health services at the community level.

In addition, the concept of self-reliance is further emphasized by three factors - the responsibility of the community to finance and support the health services; the mass health movements in which all participate and the union of western and traditional Chinese medicine. No doubt, the self financing of health services may give rise to certain inequities among communes, but they are minimized by selective government interventions and subsidies. The participation of communities in the mass health movements - environmental health, water supply, sanitation, control of pests and construction of clinics - has made each member a partner in the collective development. The awareness of the value of cleanliness, the need to limit family sizes and the incorporation of other preventive measures e.g. vaccinations, are self evident in the villages and cities of China.

The principle "serve the people" has been implemented in China with remarkable results. While many other countries are grappling with problems of the underserved, including the rural population, the emphasis in China has been precisely this segment of the population which represents 80% of the total population, more than 700 million people. In order to achieve improved health for the people, preventive and

curative measures have been judiciously combined. The endemic diseases of childhood, which used to take a heavy toll, have been either wiped out or controlled. Malnutrition is largely a condition of the past. Health education and promotion have become regular features of communities' lives - there is always one individual accountable for the health of some 100-200 people who are known personally to this voluntary health worker.

At the production brigade level, with the average population of 1000, there is usually a simple health station staffed by barefoot doctors - usually three or more. One or more of the barefoot doctors are women. They work in shifts so that the stations are continuously staffed during their opening hours. The ratio of barefoot doctors to population varies considerably - e.g. in the Miyun county near Peking there are, on the average, 4.5 barefoot doctors per 1000 population, in the Shou Cheng commune near Kueilin city 1.6/1000 population, in Kuantung province 1.6/1000 population, in the Hwa Shan commune near Kuangchow city 2.3/1000 population while in the whole country the ratio is 2.25/1000 population (1.8 million barefoot doctors). The opening hours of the health stations also vary - the station at Chen Kechuang brigade in Peking is open continuously while that at the Lou Tang brigade in Shanghai is open from 6.00 a.m. to 9.00 p.m. every day.

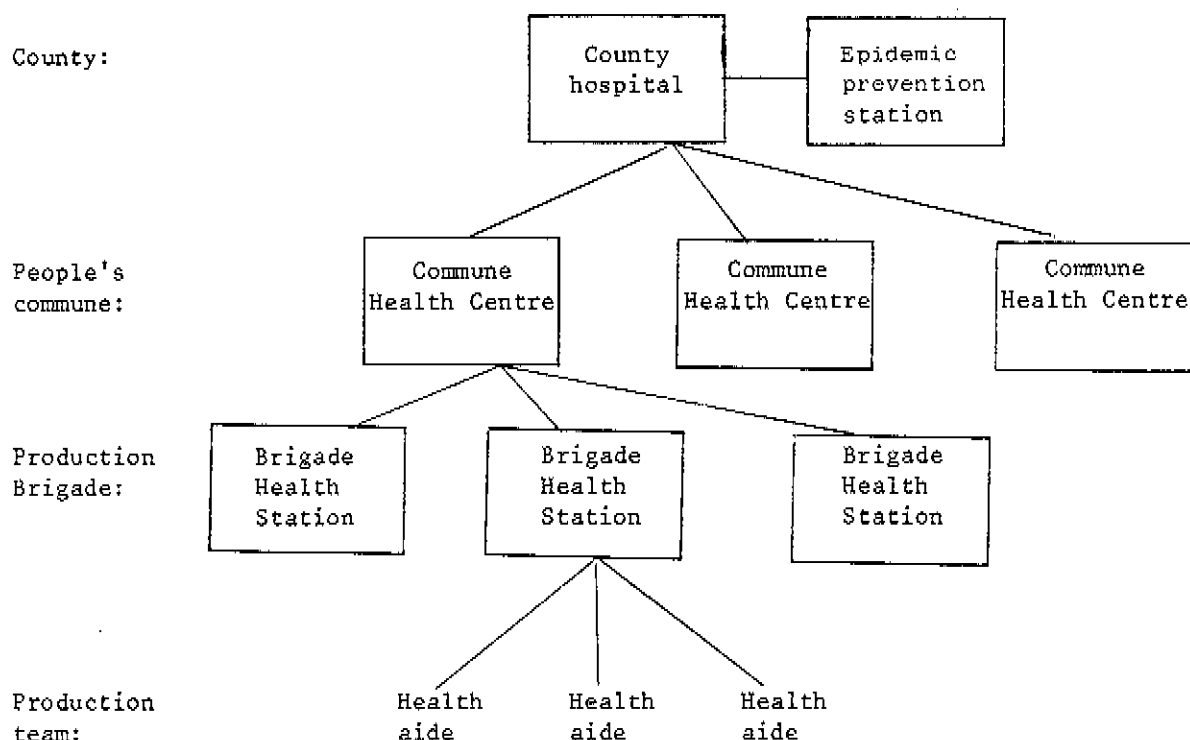
Figure II describes the structure of health services in the rural areas. At the level of production teams, elementary health care is provided by health aides who work full-time as members of the teams and give elementary medical care when needed. They also participate in preventive work e.g. general sanitation, vaccination, etc. There are usually two or three health aides to serve a production team with an average population of 200. Nine to 10 households in the teams form a group responsible for organizing, with the help of a health aide, the preventive health work e.g. cleaning, general environmental health, and patriotic mass health campaigns. In the urban areas, health aides are often called "activists" (e.g. in Chao Yang residential area in Shanghai). Owing to the density of population and close distances, curative care in such areas is directly provided by health stations or centres.

The urban counterparts of the brigade health stations are lane neighbourhood stations. The staff of these stations are called by different names - barefoot doctor in the Pin Chiang street neighbourhood in Kuangchow, health aide in Foshan city near Kuangchow and lane or neighbourhood doctor in Chao Yang workers' residential area in Shanghai. These stations are staffed by two or more such workers, working in shifts. One of the health stations in the Pin Chiang street neighbourhood serves 700 people with two barefoot doctors and the Chao Yang Number One health station in Shanghai serves 6700 people with six "lane doctors".

Most of the people's communes have health centres of varying sizes. An average commune health centre for 10 000 people usually contains 20 beds and is staffed by 15 health personnel. The commune health centre is the apex of the pyramid of health care within the commune and provides a fairly wide range of treatment facilities. They usually contain X-ray and ECG facilities, laboratories, a small operating theatre and a pharmacy. Some surgical procedures such as appendectomies, repair of hernias and caesarian sections can be carried out. The centres are staffed by qualified medical graduates (both traditional and western medicine), nurses and other support staff. Annex III shows sample staffing patterns of health centres.

The urban counterpart of commune health centre is a street neighbourhood health centre with a similar range of activities and staffing but usually with no beds - at least not in those which the Study Tour visited.

FIGURE II. STRUCTURE OF HEALTH SERVICES IN COUNTIES



County hospitals are usually the referral hospitals for commune health centres. They range in size from 100 to 300 beds and are mostly situated in county towns. They have various specialized units including medical, paediatric, surgical, obstetrics and gynaecological, ophthalmological, laboratory and X-ray departments. The urban equivalent of county hospitals are district or city hospitals. Both categories of hospitals provide a sophisticated level of hospital care and outpatient services for the local population.

The county epidemic prevention stations are usually located within or near county hospitals and provide the technical basis of disease prevention programmes. They assist the communes in immunization, provide health education and participate in patriotic mass health campaigns for cleaning the environment. They usually have laboratories which examine samples of water, food and bacteriological/pathological samples sent by communes.

During the Cultural Revolution, the need was emphasized for city based health personnel to return to the countryside periodically. Doctors working in the cities and in medical colleges, and in general in hospitals above district level, now work for one year in every three to five years in the rural health services hand in hand with the health teams in the counties and communes. They constitute mobile medical teams in the sense that they travel from the cities to the rural areas; they remain for one year with the rural health service to which they are assigned.

The mobile medical teams sent from Shanghai usually consist of five doctors - for internal medicine, surgery, obstetrics-gynaecology and traditional medicine - and five nurses. They provide support to the commune efforts to train barefoot doctors in addition to their other tasks. They also visit production brigades and provide on-the-job training to barefoot doctors and other specialized training as needed.

At the level of commune health services, the cooperative medical scheme is a welfare service organized on the basis of mutual benefit and voluntary service. It guarantees access by the people to the health services. In addition, preventive services provide the cornerstone of improvement of health status of the people. They are undertaken by various means - patriotic mass health campaigns, eradication of four pests, control of water supply and sanitation, immunization and family planning. The preventive services involve all people in the community and draw on the technical support from all levels. The effectiveness of the preventive services has been observed by the Study Tour not only through the absence or control of infectious diseases, but also through the general cleanliness of the homes and neighbourhoods visited. The health personnel play a key role in such preventive activities.

4. History of barefoot doctors

Before 1949, the health situation of China was one of the worst in the world. Following the creation of the People's Republic, a rapid recasting of society was undertaken and is still continuing. In the field of health, the first actions of the Ministry of Public Health were to strengthen the existing hospitals, create a network of new facilities and develop health manpower. The First National Health Congress of 1950 proposed four types of auxiliary workers, in addition to medical doctors, to man the curative and preventive services - specialists with two years' training in a given field; paramedical professionals (nurses, laboratory technicians) with two to three years' training; sanitation workers with three to six months' training; and part-time workers with three weeks to three months' training to help with vaccinations and epidemiological surveillance.

The Great Leap Forward, which started in 1958, saw several new developments, among which was the large scale formation of people's communes in the countryside. Along with them, came new changes in the health services including decentralization of the services and the advent of the "barefoot doctor" (the actual term came later with the Cultural Revolution) approach; the use of mobile medical teams and the introduction of cooperative medical system in the newly created communes. By June 1960, there were over 3900 health workers like barefoot doctors in the Shanghai municipality alone.

During the period 1961-1965, "high quality" medicine started to take precedence again and there was a cessation of training and a reduction in the number of front line health workers. The 3900 health workers in the Shanghai counties were reduced in number to just over 300. In the months preceding the Cultural Revolution, the training of rural health workers was apparently resumed.¹

¹ Sidel, Victor & Ruth. Serve the People, Observations on medicine in the People's Republic of China. Josiah Macy Foundation, New York, 1973.

A radical redirection of policies was initiated by Chairman Mao's statement of 26 June 1965:¹

"Tell the Ministry of Public Health that it only works for 15 per cent of the entire population. Furthermore, this 15 per cent is made up mostly of the privileged. The broad ranks of the peasants cannot obtain medical treatment and also do not receive medicine. The Public Health Ministry is not a people's ministry. It should be called the Urban Public Health Ministry, or the Public Health Ministry of the privileged, or even, the Urban Public Health Ministry of the privileged.

Medical education must be reformed. It is basically useless to study so much ... Medical education does not require senior middle school students, junior middle school students or graduates of senior elementary schools. Three years are enough. The important thing is that they study while practising. This way doctors sent to the countryside will not overrate their own abilities, and they will be better than those doctors who have been cheating the people and better than the witch doctors. In addition, the villages can afford to support them. The more a person studies, the more foolish he becomes. At the present time the system of examination and treatment used in the medical schools is not at all suitable for the countryside. Our method of training doctors is for the cities, even though China has more than 500 million peasants.

A vast amount of manpower and materials have been diverted from mass work and are being expended in carrying out research on the high-level, complex and difficult cases, the so-called pinnacles of medicine. As for the frequently occurring illnesses, the widespread sicknesses, the commonly existing diseases, we pay no heed or very slight heed to their prevention or to finding improved methods of treatment ...

We should keep in the cities those doctors who have been out of school for a year or two and those who are lacking in ability. The remainder should be sent to the countryside. ... In medicine and health, put the stress on rural areas."

The training of barefoot doctors began in earnest following Chairman Mao's directive. By 1968, there were 4500 barefoot doctors in Shanghai and they had trained more than 29 000 health aides. The examples spread throughout the country and results have been spectacular. By now over 1.8 million barefoot doctors have been trained - one third being women - along with over 4 million health aides. This has been accompanied by other measures to redirect health resources to the rural areas. Now the barefoot doctor has become a well-established feature of the Chinese health services.

The term "barefoot doctor" (chijiao yisheng) loses much in translation. A barefoot doctor is a peasant who has had basic medical training and gives treatment without leaving productive work. He gets the name because in South China peasants work barefooted in the rice paddies. The term barefoot doctor in Chinese is also a sign of affection and has become the common English designation in China.

5. Role of barefoot doctors

Eighty percent of China's population lives in rural areas in about 50 000 people's communes and they, as well as the city dwellers, enjoy today a complete health coverage.

¹ Cited by Wilenski, P. The delivery of health services in the People's Republic of China, International Development Research Centre, Ottawa, 1976.

The main sources of health care for these people are through the services of barefoot doctors and health aides. Although more sophisticated levels of care are now also available to the population through commune health centres, county and city hospitals, the barefoot doctors provide the first level of primary care to the people. They are the ones responsible for both preventive and curative care and for running the cooperative health stations for the production brigades. They are able to handle on an average 70 per cent of the cases seen in rural medical practice.

Barefoot doctors and health aides are not health workers exclusively. On the contrary, they participate fully in the productive work of their brigades and teams and provide health care part-time or, in the case of the health aides, as needed. Thus, they are integral parts of the production brigades and teams. They are recommended by the peasants and approved by the local leaders. Selection takes place from the families of local peasants or, sometimes, urban youths settled in the countryside. They live and work together with the people they serve and this is their main characteristic whereby they differ from all other categories of health workers and not by their training or functions.

The barefoot doctors are considered by their communities, and apparently think of themselves, as peasants who perform some medical duties rather than as health workers who do some agricultural work. Herein lies the principal difference between barefoot doctors in China and medical assistants in some other countries. The latter spend essentially full-time in health and medical care, and are separated in a number of tangible and intangible ways from the people they serve. Few parallels to the barefoot doctors, if any, exist in other countries.

Although barefoot doctors have been traditionally identified as peasant health workers, the term has now come to signify all such part-time health workers who live and work with the communities to which they belong. They can be found among herdsmen and fishermen, from remote mountain areas to densely populated coastal areas. They are principally responsible for the complete coverage of the population by primary health care.

After the initial training, barefoot doctors return to their production brigades to resume their farm work. The usual practice is to devote one-third of the time to farm work, one-third to health or medical activities and one-third to self-study, periodic refresher training sessions and cultivation and collection of medicinal plants. The allocation of time varies greatly from commune to commune. They receive no special payment for the health related duties but generate work-points by doing health work just as though they had been doing farm work during the same period.

The income of barefoot doctors is the same as that of any other peasant on the farm. It varies from 200 to 400 Yuan per annum, depending on the income of the brigade and the commune. In addition, they receive free rice, if they work in rural areas, as any other worker would. For example, a barefoot doctor in the Hua Shan commune, near Kuangchow city, accumulated 3600 work-points for one year. Since each work-point carried a remuneration of 7 to 8 fens, his cash income was above 250 Yuans. He also received 28 kgs of rice every month. In addition, each commune member has a small plot of land where he can produce vegetables and raise chickens according to the family needs. The same is true, of course, for the barefoot doctors.

Owing to their dedication to the concept of serving the people, they form a new kind of socialist-minded rural health workers who retain as close links with the peasants as any other dedicated peasant. They are content to stay permanently in the countryside and are not rewarded with any extra material incentive. Thus, they form the front line health workers of the communes and brigades and do not rely on any institution outside the commune except for technical support or training.

The effectiveness of their role can be illustrated by one example. Before the advent of barefoot doctors, it took 30 days to vaccinate the population in 1965 of Shou Cheng commune near Kueilin city against smallpox. In 1975, the same vaccination programme could be carried out in only 3 days with the help of barefoot doctors and health aides. In 1977, 97.7 per cent of all vaccinations (17 500 doses) and 93 per cent of all physical examinations (25 000) and 61.7 per cent of all outpatient consultations (106 200) in the commune were performed by barefoot doctors and health aides. Malaria incidence dropped from 21.5 per 10 000 population in 1970 to 7.8 in 1977. There has been no case of poliomyelitis in 9 years and no new case of diphtheria, measles, typhoid, epidemic meningitis in the last two years.

This example illustrates how much has been achieved at a low cost by the barefoot doctors and health aides. Similar examples abound in other areas visited and the economic burden on communities through absenteeism is said to be much lighter now.

6. Functions of barefoot doctors

There is a wide variation in China of the interpretation of the term "barefoot doctor". Owing to extensive decentralization, the educational requirements, training, functions and responsibilities of barefoot doctors vary from province to province and even commune to commune. There does not appear to be a standard terminology which distinguishes between barefoot doctors, health aides and birth attendants. However, the basic functions and tasks of barefoot doctors are similar on a country-wide basis. A barefoot doctor is usually a person who participates part-time in the productive work of the brigade in a flexible manner¹ (one-third to one-half time on the average) and part-time in health care activities (one-third time on health care and up to one-third time on studies and cultivation and collection of medicinal plants). For example, in the Wu Sing (five star) production brigade health station in the Hua Shan People's commune near Kuangchow city, six "barefoot doctors" were introduced, one of whom would be termed as a "medical assistant" due to the long (2 years) training received, while one would be termed as a "birth attendant" by training. However, the main characteristic they shared was that they were part-time health workers who participated systematically and regularly in the productive work of the commune.

¹ For example, one of the three barefoot doctors in a production brigade of the Hsin Tang People's commune in the Tseng Chen county (Kuangchow city) had gone for military service and the two remaining ones were temporarily not participating at all in the productive work.

Nevertheless, whatever terminology is used, the basic functions and responsibilities of barefoot doctors seem to be generally as follows:

(a) Treat "commonly seen" diseases, injuries and provide first aid; however, the scope and level of treatment can be quite different in different places depending on the level of competence of the barefoot doctor(s) concerned. It may even be quite sophisticated, including minor surgical operations in some cases. The treatment comprises both western and traditional Chinese practices and medicine following the third principle of health care, i.e. to unite doctors of both traditional Chinese and western medicine.

(b) Vaccinate and report epidemics to the commune health centre; routine vaccinations are given to children, e.g. smallpox, poliomyelitis, diphtheria, pertussis, tetanus, etc. Immunizations are often performed by health aides in production teams.

(c) Undertake health education with components of environmental and personal hygiene, sanitation, vector control and nutrition; the mobilization for, organization of, and participation in, patriotic mass health campaigns constitute a significant part of health education.

(d) Propagate family planning and assist in family planning activities; all families are now strongly discouraged from having more than two children. The specific activities may include the distribution of pills and condoms, insertion, control and removal of IUDs and, in some cases, abortion. In Tung An brigade, Shou Cheng commune, the Study Tour noted that male and female sterilizations were performed.

(e) Cultivate, collect and process medicinal plants; all the rural health stations visited had a small plot of land for growing medicinal plants and a room in the station was used for processing the plants, e.g. making decoctions, tablets and, in some cases, ampoules for injection. Periodically barefoot doctors go to the mountains or forests to collect medicinal herbs and plants.

(f) Train and advise birth attendants and health aides in production teams; the latter category of personnel are those who are practically full-time farmers devoting a major part of their time to productive work of the teams and being "on call" to provide health services as necessary. They also participate under the guidance of barefoot doctors in health education, mobilization of masses for health campaigns, immunization programmes, reporting of epidemics and provision of elementary health care (see also section III.12).

The Study Tour participants had elicited, on various occasions, daily activity schedules of the barefoot doctors they met. All such schedules accentuated the curative aspects of their work and preventive work seemed to take a lower priority. However, the results of the preventive actions in the exceptional cleanliness of the environment, absence of mosquitoes and flies and the good nutritional status were for all to see, and data which were listed about eradication and control of several epidemic diseases were also pointing towards efficient preventive work. The lack of mention of preventive activities in the activity schedules was puzzling and might be due to misunderstandings of meaning of words or purpose of the question.

Among the six functions mentioned above, female barefoot doctors participate more actively than males in family planning and maternal and child health activities, including prenatal and postnatal care and actual delivery. It is the practice to have at least one female barefoot doctor in each production brigade. About one-third of the 1.8 million barefoot doctors were female and the aim, in at least certain provinces, is to have one-half female barefoot doctors.

Health care for women was expressed in terms of the priority needs of four periods of women: the menstrual period, period of pregnancy, actual delivery period and the postpartum and lactation period. The social and health requirements in these periods are reflected in special care and arrangements for women's work, e.g. light work during pregnancy. Practically all deliveries are attended by health workers and the majority of deliveries in rural areas are conducted at home. Female barefoot doctors and health aides make home visits after delivery, providing care for the newborn and giving advice on healthy child rearing practices under local conditions.

The barefoot doctors are also extension workers for epidemic prevention stations. The Institute of Parasitic Diseases in Shanghai relies on barefoot doctors for health education, to undertake immunization programmes and to maintain general hygiene and sanitation work.

In the urban areas the basic role of barefoot doctors is similar. In the Hung Moan silk factory in Foshan city, there was a health station with three doctors and two nurses. In addition, there were ten "red medical workers" who worked in the factory full-time and were responsible for treating minor illnesses and injuries of workers. They spent on the average about two days per month on health work.

Some of the health stations had well organized schedules. For example, the Chao Yang No. 1 health station in Shanghai had two "lane doctors" staffing the station while three others went on home visits (four to ten families per day). One lane doctor, in rotation, was working one out of every six months in the processing plant which paid their salaries. One lane doctor had the following schedule of weekly activities at the time of visit of the Study Tour:

Monday: discussion of week's programme with the director of health centre and in the afternoon, training of "activists" in the neighbourhood in mass health campaigns;

Tuesday: professional study;

Wednesday: vaccinations;

Thursday: participation in cleaning campaign in the neighbourhood;

Friday: professional study;

Saturday: education on family planning.

The Study Tour considered that the barefoot doctors it had seen were performing their functions extremely well.

7. Initial training of barefoot doctors

As has been mentioned in an earlier section, barefoot doctor trainees are usually selected from families of peasants in the production brigade. The method of selection seems uniform throughout the country. The basic educational requirement is middle level (junior) secondary schooling (9 years) although it has been relaxed in some cases in the past to

primary schooling (6 years). The usual age of trainees can vary from 18 to 25 years, in few cases being in good health and single were also mentioned as selection criteria. The trainees are selected by their production brigade according to their proven willingness to "serve the people". The revolutionary committee of the brigade making the selection also takes into account the intelligence and energy of the potential trainees. The potential trainees have the option of expressing their willingness for assuming the future duties of barefoot doctors or otherwise. Since the nominee is a member of the brigade, the selection process is informal. As no extra material incentive is involved in their future work, it is unlikely that any trainee is motivated by factors other than the desire to serve the community and the honour bestowed in being selected by the brigade.

The initial training is usually given in the commune health centre, by its staff, supplemented, when necessary, by staff from county hospitals or mobile medical teams. Occasionally, the initial training may be held at the county hospital. The period of training varies but is usually three months. The period may be extended if the educational background of the trainees is inadequate or their performances during training so dictate. In addition, it may be extended in order to cope with unforeseen work or part-time attendance of the trainees. The organization and conduct of training is entirely a local prerogative.

Instructions are usually given through similar number of hours of lectures and practical classes. No audiovisual means are employed and there seems little or no experimentation with new training methods. The trainers have not received any training in educational planning and processes and do not seem to be aware of the advances in the practice of pedagogy. Thus, conventional methods are used. Textbooks are available for training and for the later use by barefoot doctors. They seem sufficiently comprehensive although the extent of standardization across the country could not be determined. It also appears that two different sets of textbooks are being prepared - one for use in the north of the country and one in the south, since the common disease patterns are different.

The classes consist of 20 to 30 trainees depending on the needs of the commune and the proximity of domicile of the trainees to the place of training, usually the commune health centre. Terminal competence is measured by examinations - both theoretical and practical. If trainees fail the examinations, they receive further training to remedy the defects. In one commune at least, i.e. Shou Cheng commune near Kueilin, those who fail the examinations the second time qualify as health aides instead of barefoot doctors.

The variation in training practices can be seen by the following examples. In the Tang Tzu commune in Miyun county in Peking, the basic initial training was for one month only. In the Hsin Tang commune near Kuangchow, 68 barefoot doctors received 3 months training and 69 others, six months. In Chia Ting county in Shanghai, the initial training lasted 3 to 6 months. In the Hung Moan silk factory in Foshan city, the red medical workers were trained over a 12-month period. In the No. 12 Textile Mill in Shanghai, red medical workers called "worker doctors", were trained over 147 work days in the factory clinic.

The training is overwhelmingly teacher oriented. Doctors, nurses, pharmacists are involved in teaching and barefoot doctors are not used as teachers. Theory seems to be stressed more and more.

Since 1977 considerable thought has been given to upgrade the contents of training of barefoot doctors so that their professional competence could be raised. This would mean an extension of the basic period of training from three months to six months. In addition, selected barefoot doctors might be retrained in county health schools to reach the level of medical assistants (2 years training). In one province (Kuangtung) visited, the aim was for each brigade health station to have at least two or three such workers by 1985.

The following is presented as a sample curriculum and was obtained from the Shou Cheng commune, Yung Fu county, near Kueilin city.

Duration of training: 3 months.

<u>Major subjects:</u>	<u>No. of hours</u>	<u>%</u>
(a) Political subjects	26	5.7
(b) Physical labour: e.g. construction of schools, growing plants, etc.	36	7.9
(c) Sports and physical activities	26	5.7
(d) Professional subjects	366	80.7
	Total	454
		100.0

In addition, every evening 2 hours for individual studying.

Professional subjects (366 hours):

222 hours theory (or lectures)

144 hours clinical practice

- (a) Rural health and sanitation - 10 hours, 2.7%
- significance and importance of patriotic health campaigns for prevention of diseases
 - eradication of the four pests (flies, mosquitoes, rats and bedbugs) and the relationship between pests and diseases
 - general knowledge of the "two proper controls" (water and excreta) and the "five improvements" (wells, kitchen stoves, latrines, animal enclosures and environmental sanitation)
- (b) Traditional Chinese medicine and medicinal herbs: 89 hours, 24.3%
- 26 hours: basic knowledge of traditional Chinese medicine and causes of diseases
 - 4 principal methods of diagnosis
 - 8 cardinal principles of differentiation of syndromes
 - 20 hours: acupuncture and moxibustion (20-30 acupuncture points are to be mastered)
 - 43 hours: medicinal herbs, basic knowledge and ability to collect, cultivate and process common herbs; 50-70 varieties are to be known.

- (c) Basic medical sciences - 80 hours, 21.8%
 - 40 hours: physiology and anatomy (structure and functioning of basic parts of the human body)
 - 4 hours: aetiology of diseases
 - 36 hours: pharmacology (30-40 commonly used western medicines are to be mastered: functions, side effects, usage, contraindications)

- (d) Clinical medicine: 187 hours, 51.2%
 - 129 hours: internal medicine and paediatrics - basic methods of medical check-up (respiration, pulse, blood pressure, etc), injections
 - prevention and treatment of 30 commonly seen diseases
 - 38 hours: surgery of the five senses (ear, nose, tooth, taste, eyes)
 - basic concepts of sterilization, dressing, bandaging, immobilization, fixation
 - symptoms and treatment of 20 common diseases of the five senses
 - 20 hours: MCH/FP - health care for mothers and children
 - normal deliveries
 - importance and methods of contraception and family planning.

Level of knowledge and competence required at the end of training:

- (a) Rural health and sanitation - be able to participate in cooperative medical services and patriotic mass health campaigns. Basic mastery of two proper controls and five improvements.

 - (b) Traditional Chinese medicine - must master
 - 4 methods of diagnosis and 8 principles of differentiation of syndromes
 - 20 to 30 acupuncture points
 - 50 to 70 varieties of traditional medicinal herbs

 - (c) Clinical medicine: must master
 - methods of physical check-up
 - prevention, and treatment of 25 to 35 commonly seen diseases
 - 8-10 basic procedures of medical care, e.g. giving injections, stitching, dripping, incision, drainage, haemostasis, inserting IUD and abortion
- Male trainees: emphasis on internal medicine, paediatrics and surgery
- Female trainees: emphasis on internal medicine, paediatrics, gynaecology, (commonly seen female diseases), family planning (contraceptive drugs, IUD), diagnosis of normal foetal position, normal deliveries.

Three basic principles are followed in the teaching:

- (a) prominence to prevention
- (b) prevention and treatment of local common diseases
- (c) prominence to traditional Chinese medicine and herbs.

Terminal competence is measured by written and oral examinations. At the level of county health schools and above, certificates are issued to successful trainees while, at the commune level, letters of attendance are issued stating the course attended and its duration.

8. Continuing education and career prospects

There is a significant emphasis on continuing education in China for all categories of health personnel and especially barefoot doctors. The form of continuing education varies from place to place, from once-a-week discussions with doctors of mobile medical teams and once-a-month sessions in the commune health centres, to intensive full-time study at the commune health centre or county hospital or county health schools. A few examples observed by the Study Tour, and mentioned below, may denote the variety of continuing education for barefoot doctors.

Continuing education can be divided into four basic types of training:

- (a) in-service or on-the-job training
- (b) refresher training
- (c) advanced training, and
- (d) special courses of studies.

In-service, or on-the-job, training can vary from once a month visit of a doctor from the health centre to the health station, to weekly structured sessions of professional studies. In the Hua Shan commune near Kuangchow city all barefoot doctors visit the commune health centre on the 1st and 15th of each month for training. Every six months, a test is given to measure their competency and if a barefoot doctor fails in the test, he is called to the health centre for intensive training and a replacement is sent to his brigade during his absence. In the Chao Yang neighbourhood health stations in Shanghai, the barefoot or lane doctors devote two afternoons a week to professional studies. In many health stations (e.g. Tsien Chiao Chia Wu brigade near Peking) some evening hours are regularly spent on professional studies. The regular monthly or more frequent meetings of barefoot doctors are used not only for vocational training but also reporting on their activities and planning for next month's activities. In the No. 12 Textile Mill in Shanghai, periodic lectures are given to red medical workers by hospital doctors and factory clinic doctors. In the Lou Tang brigade health station in the Shanghai municipality, a doctor from the health centre visited the station for three weeks in July to give training and to work with the barefoot doctors.

Refresher training consists of more intensive and longer term training at the health centre or county hospital. For example, one barefoot doctor in the Chen Kechuang production brigade near Peking had one month's training at the commune health centre and another month's training in the county hospital in the four years since her initial training. In the Hua Shan commune near Kuangchow city, not only do the barefoot doctors go twice a month to the health centre for in-service training and supervisors come to the health stations twice a month, but they also spend two weeks every year in the health centre for refresher training.

Advanced training also takes many forms but usually lasts from six months to two years. Some communes or counties or even provinces have plans to train all, or a part, of the barefoot doctors to achieve a higher level of competence than they presently possess. In the Shou Cheng commune near Kueilin some barefoot doctors with experience are sent to county health schools for one to two year courses to achieve intermediate (medical

assistant level) competence. For example, among the 39 barefoot doctors in the commune, 11 had completed one year's training, and 13 had completed two years' training. In the Miyun county near Peking one-third of the 1700 barefoot doctors have received more than one year's training including the initial training. In the Hsin Tang commune near Kuangchow city, 73 of the 137 barefoot doctors have received six months' advanced training while 8 have received 2 years' training. In the Kuangtung provincial hospital, 1½-year courses, in 6 months instalments, are run on theory and basic sciences by specialists. In the Kuangtung province, plans have been drawn up to train for one year those barefoot doctors who have had 6 months' training and one year's experience, or less training and more experience (see Annex IV). The Chung Shan medical college in Kuangchow organizes special correspondence courses, lasting 1½ to 2 years, for barefoot doctors. In Shanghai plans are also being made to upgrade the skills of barefoot doctors through one year courses both in commune health centres and in county hospitals. In the Chian Cheng commune in Shanghai, the target is to train at least one barefoot doctor in each brigade to medical assistant level by 1980 and half of them to medical college graduate level by 1985. In the No. 12 Textile Mill in Shanghai, 6 to 12 months advanced training is given to "worker doctors" in addition to the periodic lectures. The worker doctors work in the factory only one-fourth of their time.

The Shanghai medical colleges have now started a television course for barefoot doctors. The course will last for 4 years and lectures are given for two to three hours, three times per week. The trainees have to pass an entrance examination and at the end of the course for a subject (e.g. anatomy, physiology, biochemistry, etc.) an examination is held. If a trainee fails in an examination, he is given another chance. There will also be some practical training. At the end of the training, the barefoot doctors will qualify to be at the level of a senior medical assistant (3 years' training).

Specialized training takes various forms and can involve staff from health centres, county hospitals, epidemic prevention stations and mobile medical teams. In the Tsien Chiao Chia Wu brigade in Peking Municipality, barefoot doctors are trained for 3 months in the county hospital to specialize in dentistry or gynaecology. Several female barefoot doctors in the Lou Tang commune in Shanghai had 6-months' specialized training in obstetrics and gynaecology. In Shanghai mobile medical teams conduct specialized short-term courses (e.g. on mental illnesses) to enable barefoot doctors to recognize complicated diseases and refer them properly. Staff from epidemic prevention stations run short-term special courses, e.g. in tuberculosis detection and treatment.

It is clear from the above that forms of continuing education vary considerably and are suited to meet the local needs. The commune health centres play a key role in training although more intensive training is undertaken at higher levels. The policy of upgrading the skills of barefoot doctors also varies from commune to commune.

Since barefoot doctors do not receive any special pay for their health work, their career prospects are tied to improving their professional skills rather than increased material incentives or promotions. Apart from the upgrading of skills mentioned earlier, barefoot doctors are also eligible for enrolment in medical colleges. At the places visited, 5-10% of barefoot doctors had so far been trained in medical colleges. In the Chung Shan medical college in Kuangchow the Study Tour was told that about 10% of those admitted were barefoot doctors. Immediately after the Cultural Revolution, entrance examinations to medical colleges were abolished but they have now been reinstated. Requirements for admission to medical colleges are:

- senior middle school (11 years schooling)
- excellent marks at the entrance examination (physics, chemistry, mathematics, languages, politics)
- demonstrated love of the people.

If barefoot doctors qualify in the entrance examination, they have priority for admission. After completion of medical college, barefoot doctors may continue to work in their former production brigade or may be placed at the commune or county level as doctors. Some barefoot doctors also leave their production brigade on marriage or reassignment. For example, out of a total of 150 barefoot doctors trained so far in the Hua Shan commune near Kuangchow city, 29 have left the commune. Twelve of the barefoot doctors have gone to medical college and two have become qualified nurses. Two of the qualified doctors have continued as "barefoot doctors".

The effect of newly reinstated entrance examinations on the admission of barefoot doctors to medical colleges is not yet fully known. However, efforts to upgrade the skills of barefoot doctors through training in county health schools will continue. For example, in Kuangtung province out of 73 000 barefoot doctors so far 40% have received further training.

As training is intensified and attempts are made to upgrade the barefoot doctors, the training would seem to become more theory oriented. It seemed to the Study Tour that the underlying principle of advanced training is to raise the theoretical knowledge of barefoot doctors and relatively little attention is being paid to the relevance of such knowledge to the tasks to be performed.

9. Supervision and referrals

A system of continuing supervision is built into the utilization and functioning of barefoot doctors. Supervision and continuing education are integrated so that it is difficult to separate the two. Supervision is achieved through a two-way flow of information between barefoot doctors and their supervisors, who are usually doctors in the commune health centre. Barefoot doctors regularly (at least monthly) visit the health centre to report on their activities, the problems faced and the action taken by them. They may visit the health centre from once a week to once a month, depending on distance and local practices.

On the other hand, doctors from the health centres visit the health stations regularly. They examine the records kept by the barefoot doctors, discuss problems faced and inspect the preventive measures undertaken including immunizations, environmental hygiene and vector control. Sometimes mobile medical teams come and stay in the brigade for some time. Barefoot doctors then work with the teams. In addition, there are visits from the epidemic prevention stations which emphasize the preventive measures. There is, however, no regular frequency, no standard format or guidelines for supervision and the local practices vary from place to place. No checklist or sample questions seem to have been developed. There is opportunity for improvement in this area as the actual procedures for supervision are decided on an ad hoc basis.

There is no standard list of conditions for referral of patients to the next higher level. In view of the wide diversity of training and professional skills of barefoot doctors, it will be difficult to establish such lists on a countywide basis. Barefoot doctors refer patients to the health centres if, in their judgment, they cannot handle the cases. Consequently there is a wide variation of referral rates - from 10% to 40% of patients. In the Hsing Lung brigade near Kueilin city, there were 180 admission to sick beds in the health station in 1977, of which 78% were deemed cured, 9% showed improvement, 10% were referred and there were 4 deaths. On the other hand, 30 to 40% of patients coming to barefoot doctors in the Hwa Shan commune near Kuangchow were referred to the health centre. Although patients are expected to first visit health stations, many of them go directly to the health centre or sometimes to the county hospital.

The evaluation of the performance of barefoot doctors is not standardized. The practices vary from county to county. As has been mentioned earlier, in Hua Shan commune near Kuangchow, tests are given every six months to test the competence of barefoot doctors and they are retrained if they fail the tests. In addition, the Study Tour was informed that the commune or brigade members "criticize" the barefoot doctors if their performance is unsatisfactory. However, it was not possible to assess this.

In addition to the professional supervision, the total health system is under the political supervision of the respective revolutionary committees. In each commune, a vice-chairman (among 8, on the average) of the revolutionary committee is in charge of the cooperative medical scheme. The interpretation and implementation of directives from the Party leadership in matters of health (among other sectors) is the responsibility of the revolutionary committees.

10. Logistics

In all the health stations visited, the premises were found to be simple, clean and adequate. Usually the premises have been constructed by the production brigade itself. The size of the premises varied from station to station - but usually there were five to nine rooms. Apart from the reception area, there was at least a pharmacy and an observation room. Usually there was a room for preparation and packaging of traditional medicines, one or two rooms with beds, a room for gynaecological examination and another for dental examination. The equipment was simple but adequate.

There seems to be no standard list of drugs or equipment for use by barefoot doctors. However, in the Kwangtung province, a standard list exists, at least at the provincial level for training purposes (see Annex V). In the Pai Ching brigade in Hsin-Tang commune near Kuangchow, the instruments and drugs in the bag carried by a barefoot doctor during home visits were found to be as follows:

- Stethoscope, syringes and needles;
- Andrographin, antondin, adrinobazin salicil, vitamin B, B², K³ and calcium injection ampoules;
- Hydrochloride, atropine, adrenaline hydroxide.

There was always an adequate supply of drugs and western and traditional medicines were kept separately and well marked. The barefoot doctors cultivated traditional medicinal herbs in the backyard of the health stations and made periodic visits to mountains and forests for further collection. The traditional herbs were processed in the health stations and health centres by drying and preparing decoctions. They were further processed to produce tablets, tinctures and often ampoules of injections.

There is a barter system whereby processed traditional medicine can be exchanged for western medicine from the State. The Hsing Lung brigade health station near Kueilin city collected 1250 kgs of medicinal herbs in 1977 with the help of the brigade members and grew a further 100 kgs of herbs in the health station. These were processed and among other preparations, 25 kgs of tablets were produced. Part of these drugs were exchanged for western medicine and it is estimated that 75 Yuan were saved by such a barter.

Vaccination-phials are usually kept at the health centre for cold storage and they are obtained by the barefoot doctors on the day of use.

Barefoot doctors use the same form of transportation as other peasants, i.e. walking, bicycle and public buses. Health centres or county hospitals usually have ambulances to transport serious cases while others use regular transport including tractors and animal drawn carriages. Health stations are linked by telephone with health centres.

11. Information system

There is no standard system of reporting which is followed everywhere in the country. However, there are some principles which form the basis of the reporting system. For example, barefoot doctors or other community health workers are expected to report any case of infectious disease immediately to the next higher level so that it can be transmitted to the epidemic prevention stations. The total number of immunizations and the coverage of the population are also reported regularly to the commune health centre and through it to the epidemic prevention stations. At least in one commune (Shou Cheng near Kueilin city) the Study Tour was told that all health stations reported monthly to the health centre.

Usually the barefoot doctors in the health stations keep records of the patients treated including diagnosis, treatment and drugs given. Similarly, records of vaccinations are kept with the name of the child, age and date of vaccination. These are said to be regularly inspected by the supervisors when they visit the health stations. In the Pin Chiang street neighbourhood in Kuangchow city, the population is supposed to keep a booklet with records of their visits to the health services. However, it was found during home visits that the practice was not regularly followed.

The records are not necessarily summarized or tabulated to give aggregate statistics, but many health stations and centres produce summary tables showing the total number of consultations, admissions, incidence of infectious diseases and drugs produced. They are sometimes displayed on the walls of the health stations as in Hsing Lung brigade near Kueilin city.

The flow of information from the commune health centre to the county hospital and to the province is not clear. Thus it was sometimes difficult to obtain vital statistics on a county-wide or province-wide basis. On the other hand, county or provincial authorities in certain cases could produce detailed statistics on vital statistics, disease conditions and manpower situation at short notice. This led the Study Tour to believe that information might be available but was not reported or tabulated on a regular basis.

12. Other community health workers

Three other types of community health workers were investigated - red medical workers who serve as barefoot doctors in urban areas (and in certain cases, e.g. in Shanghai, they are called lane doctors or neighbourhood doctors or in factories, worker doctors), health aides who serve at the production team level, and birth attendants who work in health stations and at the production team level.

In the Chao Yang worker's neighbourhood in Shanghai, the staff in the health stations are known as "lane doctors". They are trained for six months initially and are retrained during one month every two years in the health centre. In this neighbourhood, the persons in charge of the health stations are "medical assistants" and belong to the staff of the health centre.

In the Pin Chiang street neighbourhood in Kuangchow city, the front line health workers were introduced as barefoot doctors. On the other hand, a full-time health worker in the Yung Chin Street neighbourhood in Foshan city was introduced as "health aide". In Hung Chun production brigade in the Hua Shan commune near Kuangchow city those who should have been termed as birth attendants by training were termed barefoot doctors. Whether such interchangeable classification was due to problems of language or represented a genuine flexibility of terminology was difficult to decide.

In the Pin Chiang street neighbourhood, the "red medical workers" perform the same functions as barefoot doctors. Since the urban neighbourhood was relatively small in area (50 blocks of buildings), the distance between the health centre and a health station visited was barely 3 or 4 minutes walk. This led to the majority of patients going directly to the health centre and only relatively minor ailments were seen at the health station. The patients might come to the health station to avoid the waiting period at the health centre. The training of the red medical workers in the Pin Chiang street neighbourhood was similar to that of barefoot doctors. The refresher training varied. One of the workers was going through an eight-month part-time refresher training at the municipal hospital which he visited two evenings and an afternoon a week. Such part-time study was convenient in urban areas because of the small distances and ease of transportation. The workers were paid by the factory in which they worked part-time.

In the Foshan city near Kuangchow, the "health aide" who works full-time in the health station, had one year initial training at the municipal public health bureau and is paid her salary by the district public health bureau. The functions of these "health aides" are similar to those of barefoot doctors.

In the Hung Moan silk factory in Foshan city, with 1300 workers, a health station is staffed by medical doctors. There are also "red medical workers" attached to production teams or workshops of the factory. The red medical workers work full-time on the production line and do health work only when needed. One red medical worker interviewed had been trained for one year and devoted, on the average, two days per month to health work. Her tasks were mainly curative, emergency service and preparation of medicines and she was paid the same as other factory workers.

Health aides in rural areas work full-time in production teams and perform health work as needed. They also participate in preventive work, e.g. mobilization for vaccination programmes and mass health campaigns. In the Kwangtung province with more than 50 million population, there are 73 000 barefoot doctors, 219 000 health aides and 33 000 birth attendants. The Study Tour met only two health aides which might be due to the fact that they were participating full-time in the productive work of the teams.

The health aides generally provide simple treatment for minor ailments, first aid and general health education, deal with family planning and participate in preventive health work such as sanitation, spraying, vector control, reporting of communicable diseases, vaccination during epidemics, and patriotic mass health movements. In many brigades the Study Tour visited, no health aides were found, e.g. Miyun county in Peking and Hsin Tang commune near Kuangchow.

In the Shou Cheng commune near Kueilin city, the health aides are expected to be able to perform the following tasks:

- (a) vaccination
- (b) application of more than 20 medicinal herbs
- (c) application of more than 20 acupuncture points
- (d) treatment of minor illnesses and injuries by both traditional Chinese and western medicine
- (e) normal delivery (for female health aides) and
- (f) health education and mass mobilization.

They are trained for a period of two weeks by barefoot doctors and are supervised by them.

In the Hua Shan commune near Kuangchow city health aides have a basic training of two weeks from barefoot doctors and spend a further two weeks per year in the health stations. In Lou Tang commune in Shanghai, health aides are not given any formal training but gather together for some lectures during agricultural slack time.

"Birth attendants" usually work in the brigade health stations. They receive training for six weeks in the health centre and then one day per month and two weeks per year further training e.g. in Hsin Tang production brigade. The Study Tour also met with birth attendants who were originally female barefoot doctors but were then further trained or simply given a more MCH oriented basic training. One traditional birth attendant was interviewed who had received 2-weeks' training.

One of the perplexing features of the visit was the detection of some inadequacy in training of community health workers in preventive activities and also of some apparent inadequacy of preventive work. However, the fantastic results of preventive work were again for all to see. It emerged later that, at least in Kwangtung province, there was a special group on preventive and hygiene work in each commune health centre accounting for 15% of the total health centre staff. There also seemed to be a special group of workers called sanitation workers in the Foshan city. It is still not clear whether these special personnel do the bulk of the actual preventive work.

In the Hua Shan commune, general sanitary workers, who work in production teams, are trained for 10 days in the health stations for environmental sanitation, supervision of water quality and latrines, and spraying. In the Tseng Chen county near Kuangchow there are one or two sanitation workers in each production team. In the Chao Yang neighbourhood in Shanghai, retired people are recruited to be "activists" in sanitation and environmental health work. For every nine or ten households, there is one activist who receives training one afternoon a week. They participate in the eradication of four pests, general cleaning, and health education, including food habits.

IV. ASSESSMENT

1. Barefoot doctors

1.1 Achievements

The historic results of less than three decades of work since the liberation to improve the health status of more than 800 million people are truly astounding. The People's Republic of China started with one of the most appalling levels of health of the people among all of the developing countries. Since the sixties, it has developed a pattern of health services adapted to its own conditions and a truly unique system of health services has emerged in the last two decades.

The Study Tour could only observe a limited range of health services in a few areas of the country over a limited period of time. Nevertheless, it considers that the following highlights of the achievements of the Chinese health system reflect its observations:

Politics and health

- (a) The system is totally adapted to the political realities of the Chinese society which relies on the mobilization of the people. It is promoted by a strong political will and derives full support from the Party and the administrative machinery of the country.
- (b) The enthusiasm of the leaders of the country and the statements by Chairman Mao Tse-Tung and Chairman Hua Kuo-feng have permeated to all levels of the population leading to a sense of identification of the people with the system.
- (c) The four principles enunciated by the First National Health Conference in 1950 and the directive issued by Chairman Mao Tse-Tung in 1965 have been reiterated, and acted on, sufficiently at all levels to have become the cornerstone of the health system.
- (d) The administration of health services has been decentralized so that there is sufficient flexibility, innovation and adaptation to meet local needs.

Socio-economic development and health

- (a) The health system has been developed as an integral part of the national and local socio-economic development, and socio-political culture. The health activities are closely coordinated with other national development programmes, such as education and agriculture.
- (b) Repeated mention is made of the links between health care and increased production and economic development and health activities are planned to fit as closely as possible with productive tasks.
- (c) The spectacular improvements of the health status of the population were obvious to the Study Tour. When statistics were available, they clearly reflected the tremendous strides in the reduction of mortality rates, birth rates, and eradication or control of infectious diseases rampant before the liberation. The Study Tour could also observe first hand the nutritional level of the population, the good health of the children,

the general level of cleanliness and the control of pests. However, the Study Tour could not ascribe any part of such improvement only to the health services which indicates to what extent economic development, education, community participation, agricultural production and health services are inextricably interwoven. Thus, successes are deeply rooted in a complete change of the political and socio-economic situation of the country.

Community participation and self-reliance

(a) The system is rooted in, and inseparable from, the population it is meant to serve and hence is completely understood and accepted by the population.

(b) One basic principle is to do today what can be done today and improve on it in future. The communities are responsible for, and support, their cooperative medical system through financial and labour contributions. It is only at the secondary and tertiary care levels that the State provides any material support. However, the Study Tour also understood that there may be selective subsidies to communities by the State on a temporal and "as needed" basis.

(c) The principle of self-reliance is also exemplified by the involvement of the communities in deciding on the type of health care needed, periodic patriotic mass health campaigns, selection of the community health workers and their continued participation in the productive tasks of the communes.

(d) The self-reliance is further emphasized by the integration of traditional Chinese medicine with western medicine whereby the rich history of traditional medicine has been utilized fully. The commune members participate in the collection of local medicinal plants, which, after processing, are often bartered for other drugs and medicines from the State.

(e) The pride of the communities in their health workers, and vice versa, was all too evident everywhere.

Health services

(a) The health services appear to have achieved a total coverage of the population with a level of service within the means and resources of the communities and country.

(b) The preventive services, totally integrated with the curative ones, are provided at grass-root level through patriotic mass health campaigns, eradication of four pests, health education through simple and clear slogans, proper water supply and sanitation, immunizations, MCH and family planning. The curative services are provided through the treatment of common diseases, dental services and simple surgery.

(c) The services are easily accessible to the population - through health aides in the fields, barefoot doctors in the brigades and home visits, when necessary. The fact that health aides, barefoot doctors, and red medical workers actively participate in the productive tasks of the commune and factory make their services accessible to, and easily accepted by, the population since there has been a demystification of the role of health workers. By negating any special pay or status of these health workers, the principle of "serve the people" has been accentuated.

(d) Chinese traditional medicine and western medicine have been successfully integrated to support each other and, in many cases, to act in concert in the care of patients.

(c) The primary, secondary and tertiary levels of health care are mutually supportive - referrals and reporting form one way of communication, and training and supervision the other.

Training

(a) The selection of community health workers by the communities maintains a strong support of those workers.

(b) The philosophy that initial training should be short and flexible in order to get services under way and that it should emphasize prevention and treatment of common local diseases, have led to quick results.

(c) There is a supporting system of continuing education to upgrade the knowledge and skills of the community health workers in accordance with the resources and the services available to the community.

(d) There are some possibilities of career development since barefoot doctors are given priority for admission to medical colleges if they qualify in the entrance examinations. However, career prospects consist mainly of upgrading of knowledge rather than material incentives or promotion. Many barefoot doctors reach the level of intermediate health personnel e.g. medical assistants.

(e) The flexible structure of training, e.g. a health centre doctor training barefoot doctors and a barefoot doctor training health aides, has used local resources fully.

(f) The training usually takes place near the place of work and domicile of the health workers.

(g) Training emphasizes the integration of traditional Chinese medicine and western medicine, and teaches the barefoot doctors the cultivation, collection and processing of medicinal herbs for maximum self-reliance.

(h) The past history of training and utilization of traditional birth attendants indicates the practice of using all available human resources for delivery of health services.

Supervision, supply and logistics

(a) The political supervision of the functioning of health services tends to keep them geared to the needs of the people. The Revolutionary Committee at each level, where they exist, monitors the health care system of that level.

(b) There is professional supervision from higher levels of health institutions to lower levels and this is closely tied to continuing education of the health workers.

(c) The principle of appropriate technology for health has been assiduously followed so that equipment and facilities available at each level are simple and functional enough to suit the resources available at that level.

(d) Communications and transportation means between brigade health stations, commune health centres and county hospitals are adequate though simple.

(e) The supply of drugs in health facilities seems adequate and self-reliance is emphasized in cultivating and processing medicinal herbs in health stations and centres. Availability of inexpensive drugs was evident.

1.2 Some problems as conceived by the Study Tour

In stating the problems, as observed by the Study Tour, the tremendous achievements have to be kept in mind. The problems are relatively small and can be solved easily provided they are seen as problems by the health and education personnel. It may also be that these were only products of difficulties of language, interpretation, understanding, lack of information or simply superficiality of observation. It may also be that they are only problems of those places visited and not of others in that immense country which is China.

Training

(a) Training seems to be based on classical patterns - lectures predominate and theoretical learning is stressed. Training appears to be more hospital than community-based and mainly disease-oriented. Performance criteria and educational objectives have not always been adequately developed. The curriculum is not problem-based and teaching material seems to consist only of textbooks. Little attention seems to be paid to testing terminal competence and rather theoretical knowledge is tested.

(b) Systematic schemes of initial and continuing education appear not to have been followed. There are now attempts to systematize training as, for example, in Kuangtung province. This can be both a source of weakness and strength since decentralization of responsibility also implies the ability to quickly respond to local conditions.

(c) There appears to be no training of teachers and new methods of educational planning and processes seem to be unheard of - even at medical college level.

(d) Although results of preventive work are all too obvious, there seems to be surprisingly little stress on prevention in the curricula of all programmes examined by the Study Tour (medical college, barefoot doctor, etc.).

(e) There seems already a tendency to develop programmes which would overtrain barefoot doctors in theory. This trend may prove harmful in the long run. This may lead to the creation of a new elite of health worker.

(f) Participants of the Study Tour were certainly pleased to see the efforts to upgrade rural and urban health services. However, it was noted with some anxiety that conventional training practices are being emphasized at the cost of innovative approaches in education principles and practices. The fear is that unless these innovative methods of education are introduced, the training and especially further training of the barefoot doctors may become irrelevant as regards the tasks they need to perform in the rural areas. Their level of training may become so theoretically high that they cannot use it fully in their practice. They may lose their identification and integration with the community life and be tempted to migrate to areas of higher medical practices. It would be most desirable that task-oriented refresher and advanced training aim i) at helping barefoot doctors to perform better their daily tasks, ii) at achieving predetermined additional skills required by the barefoot doctors for their duties in meeting the health needs in the rural areas, and iii) at equipping them with an improved capacity to analyse and solve problems of their practice.

Supervision and logistics

(a) The Study Tour was informed of the existing methods of supervision and it feels that supervision could be improved. Supervision procedures could be systematized and elaborated more fully, e.g. by establishing check lists as to what the supervisor should look for in visits, what equipment or drugs to check, etc., with a view to effecting corrections and improving training.

(b) Scanty record keeping was observed in majority of the health stations and centres visited. Since record keeping is necessary for service management and planning, it is the view of the Study Tour that it should be adequate enough to enable the evaluation of the achievement of the objectives of the health services through measurement of the processes, outputs and outcomes. Record keeping should include reports on morbidity, mortality and family health care.

(c) Although a standard list of drugs used for training exists, at least in one province (see Annex V), the barefoot doctors do not seem to have copies of it. Owing to the possible side effects of some drugs e.g. steroids, the barefoot doctors should be aware of a standard list and the need for referral, if such side effects develop in patients.

(d) The Study Tour is also of the view that barefoot doctors should regularly weigh babies and children and facilities should be provided to them for simple laboratory investigations e.g. blood examination, urine test, etc..

2. Adaptability of the system to other countries

The solution China has found in solving its health problems cannot be simply transferred to other developing countries. Chinese experiments and approaches are based in part on Chinese culture but more heavily on the present political structure of the People's Republic of China. The framework of development in present-day China relies on mobilization of the masses through a highly organized political structure. Its fundamental slogan is "serve the people".

The solutions other countries will have to develop should be based on their culture, the attitude of their population and their socio-political structure. However, the Chinese experiment in delivery of health care to all is a successful one and is directed towards the need of the masses, which is declared to be the priority in many other developing countries. Thus, much can be learned from China, and a significant part of the Chinese experience can be adapted to the needs of the other developing countries - the essence of adaptation being to make it suit their own circumstances and environments.

The following are some of the features of the Chinese experience which, in the view of the Study Tour, and as elicited through the post Study Tour questionnaire (see Annex VIII), can be adapted to the realities of other developing countries:

(a) Firm political will at all levels of the administrative machinery must be directed towards the achievement of health care for all. If it needs structural changes in the socio-political system, they must be attempted within the existing practical realities.

(b) Health care must be seen as an integral part of socio-economic development, and the links between health and development should be seen as a process.

- (c) A progressive decentralization of the administration of health services is possible and feasible.
- (d) Community participation and involvement in decisions regarding health care, and their implementation, can be achieved.
- (e) Self-reliance of communities in organizing and financing of health care should be the hallmark of primary health care.
- (f) Communities must be mobilized to undertake and pursue preventive and environmental health tasks and necessary simple slogans can be developed.
- (g) The health services must be geared to what can be done now with integrated preventive and curative services rather than pursue a mirage of perfection. This may involve the gradual break-up of the monopoly of the medical profession in dictating who gets what care - this may indeed be the most difficult obstacle. The services should have different levels of care for referral and supervision purposes.
- (h) The frontline health workers should be recruited from the communities they will serve, and be acceptable by, and accessible to, them. Training should be geared to the local needs and disease conditions. Initial training should be short and simple - to be supplemented by continuing education to maintain and improve competence as experiences accumulate. Training should be conducted in the periphery, be problem-oriented and community-based as far as possible.
- (i) In countries where established traditional medicine practices exist, all attempts should be made to integrate them into the health services, not only so as to be able to use all available human resources, but also to utilize fully what is beneficial in the system and all sources of herbal medicines.
- (j) If possible, part-time health workers should be recruited. In any case, adequate attention should be paid to their motivation, morale, continuing education, professional support, supervision and career structure.
- (k) Working manuals, lists of drugs, supervision manuals, etc. should be developed to help the frontline health workers and their supervisors and trainers - whether they are attached to secondary care facilities or mobile health teams.
- (l) Appropriate technology for health should be developed so that equipment, facilities, transportation and supplies are simple, geared to the immediate needs of the populations and within the means the communities can afford now.
- (m) The development of health services and manpower should be coordinated so that trainers provide health services and those who plan, manage and provide services also train and have a decisive say in planning training programmes. Otherwise training will remain irrelevant to the service needs.

3. Recommendations

The participants in the Study Tour felt that the tour was very successful in achieving its objectives, and they left with many ideas about community health services which could be applied to their own countries. The participants expressed their gratitude to the Chinese authorities for the excellent arrangements made for the

programme, to UNDP for financing the tour and to WHO for acting as its Executive Agency along with the Chinese authorities. The Study Tour strongly recommended that similar tours should be repeated for others to gain from the valuable experience.

The following are some of the recommendations of the Study Tour:

- (a) Similar tours should be repeated so that other participants can profit from the experience. These tours may be organized in languages other than English.
- (b) Such tours to study primary health care in other countries should also be organized. In addition, study tours should be undertaken to examine the planning and management of health services in China at all levels.
- (c) In any future tour, policy and decision-makers, as well as those engaged in planning and implementation of health services and health manpower development - both men and women - should be included. Criteria for selecting participants should be established in advance and adhered to as far as possible.
- (d) The size of the group (21 members) was sometimes felt to be too large. Possibilities should be investigated for smaller size in future, e.g. fifteen in total.
- (e) Such tours might be organized in spring or autumn in preference to summer, when educational institutions are sometimes closed and also temperatures are high.
- (f) It would be helpful if the Ministry of Public Health, China, submit a detailed programme (including orientation and outline) in advance so that it could be discussed with the Executing Agency.
- (g) The final programme of the tour, background papers and references to reading material should, if possible, be sent to the participants at least two weeks before the commencement of the tour.
- (h) Any such tour should commence with a briefing on the political and socio-economic situation of the host country, the organization of the Government and highlights of any five-year or other plans for development.
- (i) Sufficient time should be planned for group discussions and consolidation of impressions gained. More activities should be planned to enable the observation of health personnel at work in the periphery.
- (j) A secretary might accompany the tour and proper equipment for typing and duplicating reports could be made available.
- (k) Some translation (and not only interpretation) services should be provided so that selected material can be translated from Chinese to English, e.g. content pages of a text book, duties of a barefoot doctor, etc..

V. CONCLUSION

It has been reiterated in the report how the members of the Study Tour were impressed by the outstanding achievements of the Chinese health services in extending coverage to, and dramatically improving the health status of, all its people. This objective has been attained in a surprisingly short period of time, and the achievements are all the more spectacular considering the unacceptable health conditions prevailing before Liberation. The Study Tour also considers that the country has developed unique solutions to solve its health problems and which are completely suited to its conditions and environment. It is with great admiration and with firm resolve to try to adapt the Chinese model that the participants acknowledge the usefulness of this unique experience of having participated in the UNDP/WHO Study Tour on the Training and Utilization of Barefoot Doctors in Community Health Services in China.

ANNEX 1

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ANNEX II

PROGRAMME AND OFFICIALS VISITED

PROGRAMME

Thursday, 10 August	Arrival in Peking Group meeting to discuss programme
Friday, 11 August	Introduction to China's health work Visit to the Palace Museum Banquet
Saturday, 12 August	Visit to Miyun county 1) Ho Nan Chai commune and Chen Kechuang brigade 2) Tang Tzu commune and Tsien Chiao Chia Wu brigade
Sunday, 13 August	Visit to the Great Wall and Ming Tombs Presentation of county reports
Monday, 14 August	Arrival in Kueilin Banquet
Tuesday, 15 August	Boat ride
Wednesday, 16 August	Visit to Shou Cheng commune, Yung Fu county 1) Hsing Lung brigade, Lung Chiang commune 2) Tung An brigade, Shou Cheng commune
Thursday, 17 August	Group discussion and presentation of county reports
Friday, 18 August	Arrival in Kuangchow (Canton) Group discussion
Saturday, 19 August	Visit to Chung Shan Medical College Visit to Pin Chiang street neighbourhood
Sunday, 20 August	Visit to Hua Shan commune, Hua Hsien county Wu Sing and Hung Chun production brigades Group discussion
Monday, 21 August	Visit to Foshan city 1) Yung Tun district, Yung Chin street neighbourhood 2) Hung Moan Silk Factory
Tuesday, 22 August	Visit to Hsin Tang commune, Tseng Chen county Visit to Pai Ching brigade
Wednesday, 23 August	Visit to Kuangtung province People's General Hospital Group discussion with Chinese officials Banquet
Thursday, 24 August	Presentation of county reports Arrival in Shanghai Group discussions

Friday, 25 August	Visit to Institute of Parasitic Diseases Group work Visit to Chao Yang Worker's New Residential Areas
Saturday, 26 August	Visit to Shanghai Municipal Epidemic Prevention and Health Station Group work Visit to Shanghai Industrial Exhibition
Sunday, 27 August	Visit to Chiang Chen commune, Chuan Sha county
Monday, 28 August	Group discussions Preparation of report
Tuesday, 29 August	Visit to No. 12 Cotton Textile Mill Shanghai College of Traditional Chinese Medicine Banquet
Wednesday, 30 August	Departure for Peking and Kuangchow.

Annex II

OFFICIALS VISITED

PEKING

Yang Chun	Leading member, Ministry of Public Health
Hsueh Kung-Cho	Director, Foreign Affairs Bureau, Ministry of Public Health
Yeh Cheng-Pa	Deputy Chief, Third Division, Department of International Organizations, Treaties & Law, Ministry of Foreign Affairs
Sun Hui-Yuan	Deputy Divisional Chief, Sixth Department, Ministry of Economic Relations with Foreign Countries
Wang Lien-Sheng	Deputy Chief, International Organizations Division, Foreign Affairs Bureau, Ministry of Public Health
Lo Yi-Chin	Deputy Chief, Division of Rural Health, Bureau of Medical Administration, Ministry of Public Health
Liu Ping-Hsun	Deputy Chief, Division of Higher Education, Bureau of Medical Education, Ministry of Public Health
Lo Fan	In charge of Foreign Affairs Section, Peking Municipal Health Bureau
Tai Chun-Ming	Official, Department of International Organizations, Treaties & Law, Ministry of Foreign Affairs
Lo Chen-Tao	Official, Sixth Department, Ministry of Economic Relations with Foreign Countries
Chung Chia-Lu	Official, Department of Physical Culture and Health, Peking Municipality
Hsueh Su-Ching	Official, Foreign Affairs Bureau, Ministry of Public Health
Tsao Yung-Lin	Official, Foreign Affairs Bureau, Ministry of Public Health
Chou Min	Official, Foreign Affairs Bureau, Ministry of Public Health
Yu Pao-Li	Official, Foreign Affairs Bureau, Ministry of Public Health
Lu Chi-Ting) Lu Wen-Tang) Hsing Hsiu-Ying) Wu Kuo-Kao)	Staff Members, Foreign Affairs Bureau, Ministry of Public Health
Cheng Ya-Chuan	Vice-Chairman, Miyun County Revolutionary Committee, Peking
Cheng Chen-Lan	Deputy Director, Miyun County Health Bureau
Yu Yung-Hai	Unit Chief, Miyun County Health Bureau
Chao Shan-Cheng	Deputy Director, Miyun County Hospital
Chen Shu-Ying	Deputy Director, Miyun County Epidemic Prevention Station

Annex II

Kuo Fu-Chin Barefoot Doctor, Tang Tzu Commune, Miyun County
Wang Li-Cheng Barefoot Doctor, Ho Nan Chai Commune, Miyun County
Chang Chin-Lin Vice-Chairman, Tang Tzu Commune Revolutionary Committee
Mu Jui-Fu Director, Tang Tzu Commune Health Centre
Hsin Shou-Chen Leader, Tsien Chiao Chia Wu Brigade
Liu Tung Deputy Leader, Tsien Chiao Chia Wu Brigade
Liu Hsiang Barefoot Doctor, Tsieh Chiao Chia Wu Brigade

KUANG HSI CHUANG AUTONOMOUS REGION

Chang Ju-Sung Deputy Director, Health Bureau of the Autonomous Region
Revolutionary Committee
Huo Yun-Wang Deputy Divisional Chief, Health Bureau of Autonomous Region
Revolutionary Committee
Yu Chih-Fang Deputy Chief of Unit, Health Bureau of Autonomous Region
Revolutionary Committee
Hsieh Kung Chief of Unit, Foreign Affairs Office, Kueilin Municipal
Revolutionary Committee
Wei Te-Tsien Deputy Chief of Unit, Foreign Affairs Section, Kueilin
Prefecture
Meng Kuan-Ying Deputy Director, Kueilin Prefectural Health Bureau
Huang Mao-Jung Vice-Chairman, Yung Fu County Revolutionary Committee
Tsui Fu-Lin Deputy Director, Yung Fu County Health Bureau & Principal,
Barefoot Doctor Training School
Hsiao En-Chin Vice-Chairman, Shou Cheng Commune Revolutionary Committee
Tao Tai-Chi Director, Shou Cheng Commune Health Centre
Chen Li-Ching Deputy Director, Shou Cheng Commune Health Centre
Huang Hsiung-Hui Leader, Tung An Brigade, Shou Cheng Commune
Yeh Yu-Chung Barefoot Doctor in charge of Cooperative Medical Station,
Tung An Brigade, Shou Cheng Commune
Liu Hsiu-Chiung) Barefoot Doctors, Tung An Brigade
Chang Fei)
Lu Yi Leader, Hsing Lung Brigade, Lung Chiang Commune
Huang Kuei-Chiao Barefoot Doctor, Hsing Lung Brigade, Lung Chiang Commune

Annex II

Huang Li-Chun	Barefoot Doctor, Hsing Lung Brigade, Lung Chiang Commune
Huang Ying-Tien	Barefoot Doctor, Hsing Lung Brigade, Lung Chiang Commune
Lo Yueh-Ching	Interpreter, Foreign Affairs Office, Kueilin Municipal Revolutionary Committee
Lu Hsiao-Kang	Staff member, Foreign Affairs Office, Kueilin Municipal Revolutionary Committee
Huang Chi-Ling	Staff member, Kueilin Prefectural Administration

KUANGTUNG PROVINCE

Chang Wen-Pin	Deputy Director, Kuangtung Provincial Health Bureau
Hsu Chao-Yuan	Deputy Director, Kuangchow Municipal Health Bureau
Tu Shi-Wen	Deputy Chief, Division of Medical Administration, Kuangtung Provincial Health Bureau
Tsai Soong-Ying	Chief, Foreign Affairs Office, Kuangchow Municipal Revolutionary Committee
Li Jui-Fan	Leading member, Foreign Affairs Office, Provincial Health Bureau
Shen Li-Kuang	Chief, Unit of Community Health Service, Municipal Health Bureau
Li Kuo-Yuan	Official, Provincial Health Bureau
Chow Ching-Kwen	Interpreter
Che Tien-Chun	Responsible member, Chung Shan Medical College
Huang Huan-Hsin	Deputy Head, Reception section, Chung Shan Medical College
Chao Chuang-Kun	Director, People's Hospital of Kuangtung Province
Cha Shu-Lan	Deputy Director, People's Hospital of Kuangtung Province
Chen Wei	Deputy Director, Foshan Municipal Health Bureau
Li Kuang-Jung	Official, Foreign Affairs Office, Foshan Municipality
Yang Sung-Po	Vice-Chairman, Hua Shan Commune, Hua Hsien County
Chiang	Director, Hua Shan Commune Health Centre
Yuan	Vice-Chairman, Hsin Tang Commune, Tseng Chen County
Lo	Director, Hsin Tang Commune Health Centre
Wu	Deputy Director, Hsin Tang Commune Health Centre

Annex II

Huang Shao-Na	Vice-Chairman, Ping Chiang Street Neighbourhood Revolutionary Committee
Kuan Huan-Chuang	Responsible Member, Ping Chiang Street Neighbourhood Health Clinic
Lin Pin-Ying	Doctor of Western Medicine
Tu Hsueh-Yun	Doctor of Traditional Chinese Medicine

SHANGHAI

Chiang Hsing-Chuan	Deputy Director, Shanghai Municipal Health Bureau
Liu Chih-Yun	Deputy Chief, Foreign Affairs Office, Shanghai Municipal Health Bureau
Wang Chi-Tung	Responsible member, Department of Epidemic Prevention, Shanghai Epidemic Prevention and Health Station
Huang Yu-Hsiang	Responsible member, Chiang Chen Commune Health Centre, Chuan Sha County
Chang Chih-Liang	Barefoot Doctor, Lou Tang Commune, Chia Ting County
Chi Pao-Hung	Staff member, Shanghai Municipal Health Bureau
Kan Hsing-Fa) Meng Ying-Ying)	Staff member, Foreign Affairs Office, Shanghai Municipal Health Bureau
Mao Shon-Pai	Director, Institute of Parasitic Diseases, Shanghai
Shih Chi-Te	Responsible member, Shanghai Municipal Epidemic Prevention and Health Station
Chang Yu-Nan	Responsible member, General Office, Municipal Epidemic Prevention and Health Station
Hsi Te-Chi	In charge of Disinfection Department, Municipal Epidemic Prevention and Health Station
Chiang Chun-Hsia	Medical Doctor, Epidemic Prevention Department, Municipal Epidemic Prevention and Health Station
Ma Mei-Ying	In charge of Laboratory Service Municipal Epidemic Prevention and Health Station
Hao Chin-Ching	Vice-Dean, Shanghai College of Traditional Chinese Medicine
Huang Chung-Ao	Section Chief, Dean's Office, Shanghai College of Traditional Chinese Medicine
Chang Po-Na	Associate Professor, Chief of Teaching Group for Elementary Traditional Chinese Medicine
Cheng Liang-Yen	Deputy Director, Shanghai N° 12 Cotton Textile Mill

Annex II

Ting Feng-Pao	Deputy Director, Shanghai N° 12 Cotton Textile Mill
Tsang Hao	In charge of Health Clinic, Shanghai N° 12 Cotton Textile Mill
Li Tien-Sheng	Chief, General Office, Shanghai N°12 Cotton Textile Mill
Wang Jui-Mei) Ku Hsing-Hua) Chiu Chen-Fa) Ku Chin-Lin)	Medical Doctors, Mill's Health Clinic
Wang Hsiao-Chieh	Worker Doctor, Shanghai N° 12 Cotton Textile Mill
	CHIA TING COUNTY, SHANGHAI
Lo Fu-Chang	Deputy Director, County Health Bureau
Chen Lung	Director, County People's Hospital
Shen Kuo-Chin	Deputy Director, County Epidemic Prevention and Health Station
Fu Chi-Hsiang	Vice-Chairman, Lou Tang Commune Revolutionary Committee
Kung Pao-Cheng	Deputy Director, Lou Tang Commune Health Centre
Chin Chuan-Wen	Responsible member, Technical Department, Lou Tang Commune Health Centre
Shao Yu-Lin	Leader, Shao Chai Production Brigade, Lou Tang Commune
Shao Lien-Fen	Barefoot Doctor, Shao Chai Production Brigade
Shen Lan-Ying	Barefoot Doctor, Chan Tou Brigade
Chen Kuo-Chin	Women's Leader, 11th Team, Chan Tou Brigade
Shen Tsien-Kang	Former Barefoot Doctor, Lou Tang Brigade, Lou Tang Commune.

STAFFING OF SAMPLE HEALTH CENTRES

1. Pin Chiang Street Neighbourhood Health Centre, Kuangchow.

Doctors of western medicine	9
Doctors of traditional Chinese medicine	4
Nurses	7
Assistant pharmacists (traditional)	7
Assistant pharmacists (western)	8
Gynaecologists	2
Laboratory technicians	2
X-ray technician	1
Physiotherapists	2
Health educators	<u>15</u>
	57
Other staff, e.g. administrators, general staff, etc.	<u>25</u>
Total	<u>82</u>

Population served: 40,000

Opening hours: 7.30 am. to 8.30 pm.

Departments: Traditional medicine, western medicine, surgery, orthopaedics,
prevention of tuberculosis, obstetrics, ENT, mental health.

Annex III

2. Shou Cheng Commune Health Centre, near Kueilin city.

Doctors of western medicine	6
Doctors of traditional Chinese medicine	1
Herbalist	1
Medical assistant	4
Assistant pharmacist (western)	1
Assistant pharmacist (traditional)	5
Laboratory technician	1
Midwife	1
Nurses	7
Dental technician	1
X-ray technician	1
Apprentice doctors of traditional medicine	3
	<hr/>
Health staff	32
General staff	2
	<hr/>
Total	<u>34</u>

Number of beds: 36

Population served: 25,000

Services provided in 1977;

Outpatient consultations	38,400
Hospital admissions	1,089
Surgical operations	672
Cases referred to higher levels	25

A CURRICULUM FOR TRAINING OF BAREFOOT DOCTORS, KUANGTUNG PROVINCE

The following provincewide educational plans were developed in 1976. They will be implemented and used at least until 1980.

I. Initial Training: duration 6 months.Educational objectives

The trainees, on completion of training, should be able to:

- i) propagate patriotic mass health campaigns and mobilise people especially with a view to 2 "controls", 5 "improvements" and vaccination;
- ii) perform general physical check-up and perform family planning work;
- iii) treat 60 common and recurring diseases
 - by acupuncture and moxibustion
 - by 30 to 50 Chinese medicinal herbs
 - by 70 to 80 western drugs;
- iv) perform both farm work and health work in order to serve the people.

Entrance qualifications

The trainees should be healthy, unmarried, below the age of 25 years and should have attained at least junior middle school (9 years) level. On recommendation of a commune, the age limit may be relaxed but not above 35 years.

Curriculum (1050 hours)

<u>Subjects</u>	<u>Teaching Hours</u>	<u>%</u>
1. Politics	133	12.7
2. Manual labour	110	10.5
3. Military and physical labour	48	4.6
4. Professional subjects	759	72.2
	1050	100.0

<u>Professional subjects</u>	<u>Total</u>	<u>Theory</u>	<u>Practice</u>
1. Rural hygiene	20	14	6
2. Traditional Chinese medicine & drugs	86	76	10
3. Pharmacology	80	68	12
4. Basic knowledge of diagnosis & treatment	46	24	22
5. Prevention & treatment of common diseases	527	104	423
Total	759	286	473

Annex IV2. Refresher Training: duration 1 year.Educational objectives

In addition to the objectives for initial training the successful trainee should be able to treat 130 common diseases (instead of 60), know the causes, pathology and clinical manifestations of the diseases and be able to perform minor surgical operations.

Entrance qualifications

- Barefoot doctors with 6 months training and 1 year experience in rural areas;
- Barefoot doctors with 3 to 4 months training or those who have learnt from family members, but with extensive health experience.

Curriculum (2058 hours in 49 weeks : 42 hours/week)

<u>Subjects</u>	<u>Teaching Hours</u>	<u>%</u>
1. Politics	229	11.1
2. Manual labour	217	10.5
3. Military and physical training	94	4.6
4. Professional subjects	1518	73.2
Total	2058	99.4

<u>Professional subjects</u>	<u>Total hours</u>	<u>Theory</u>	<u>Practice</u>	<u>To be arranged</u>
1. Anatomy and physiology	56	46	10	
2. Pathology	50	41		6
3. Pharmacology	50	49		1
4. Chinese medicine & drugs	160	145	15	
5. Rural hygiene	20	12	6	2
6. Diagnosis and treatment	60	33	19	8
7. Internal medicine, paediatrics & infectious diseases	140	140		
8. Surgery	76	54	16	6
9. Maternal health & family planning	50	46		4
10. Differential diagnosis	30	30		
Total	672	587	60	25

Remaining 846 hours are for practice including 4 weeks for rural hygiene, 4 weeks for family planning and 12 weeks for clinical medicine.

Terminal competence is measured by 2 week (84 hours) examinations - one week for written and one week for practicals. In the examination, 8 hours are devoted to politics, 6 to manual labour, 4 to military and physical training and 66 to professional subjects.

A LIST OF WESTERN DRUGS FOR TRAINEES TO MASTER IN A 6-MONTH
INITIAL TRAINING COURSE, KUANGTUNG PROVINCE

- | | |
|--|--|
| <p>1. Drugs used in emergency cases</p> <p>coramine
lobeline
caffeine sodium benzoate
camphor
adrenaline</p> | <p>8. Anti-diarrheals</p> <p>bismuth subcarbonate
carbo medicinalis
tannalbin</p> |
| <p>2. Sedatives and hypnotics</p> <p>luminal
chlordiazepoxide
tri-bromide tab.</p> | <p>9. Drugs used in liver diseases</p> <p>glucuro lactone
diisopropylamine dichloroacetate</p> |
| <p>3. Local anesthetics</p> <p>procaine</p> | <p>10. Spasmolytic antacids</p> <p>atropine
belladonna tincture
Probanthine</p> |
| <p>4. Antipyretic anagesics</p> <p>aspirin
phenacetin
amidopyrin
butazolidin
antiflamison
amidopyrin co. tab.
APC
antipyretic tab. for infants</p> | <p>11. Expectorants, cough suppressants and
bronchial spasm relaxants</p> <p>ammonium chloride
brown mixture
carbetapentane
aminophylline
ephedrine
isoprenaline</p> |
| <p>5. Digestants</p> <p>yeast
biofermin</p> | <p>12. Antianemic agents</p> <p>ferrous sulfate
VB₁₂</p> |
| <p>6. Antacids</p> <p>aluminium hydroxide
magnesium bicarbonate
gastropine tab.</p> | <p>13. Hemostatics</p> <p>VK
agrimonine
adrenobazone salicyclate
6-amino-caproic acid</p> |
| <p>7. Laxatives and cathartics</p> <p>magnesium sulfate
castor oil
isaphenine</p> | <p>14. Sulfonamides and furane derivatives</p> <p>SD
SG
SMP
TMP
furazolidone
furadentin</p> |
| | <p>15. Antibiotics</p> <p>penicillin
streptomycin
tetracycline
chloromycetin</p> |

Annex V

16. Tuberculostatic agents
 - rimifon
 - paraaminosalicylic acid

17. Disinfectants
 - alcohol
 - mercurochrome
 - gentian violet
 - lysol
 - hydrogen peroxide
 - potassium permanganate
 - bleaching powder

18. Anthelmintics and amebicides
 - piperazine citrate
 - tetramisol
 - bephemine hydroxynaphthoate
 - chinioform

19. Vitamins
 - VB₁ , VB₂ , VB₆ , VC, VA, VD

20. Antiallergic preparations
 - chlorpheniramine
 - benadryl
 - calcium gluconate

21. Diuretics
 - hydrochlorothiazide

COMPARATIVE TABLE ON COUNTRY REPORTS

BAREFOOT DOCTOR EQUIVALENTS

Country	Population in millions	% rural	Average per capita income/year (US \$)	National Health Plan	Name of barefoot doctor equivalent	Year started	Training		Where utilized	Part-time equivalent (a) (b) (c) (d)	Supervised by	Salary source	Other remarks
							Initial	Cont. Educ.					
Afghanistan	19.28	92	88	+	Village Health Worker (ROGHIA MAL)	1977	3 weeks	every 3-6 mo. (3-5 days)	Villages (home visits)	P	Basic Health Centre Sanitarian	none	
Botswana	0.59	96	424	+	Family Welfare Educator	1972	11 weeks	in-service	Health Post & Health Centre	F	Clinic Nurse	local authority	
Colombia	24.72	36	577	+	Rural Health Promoter	1961 1976	12 weeks 14 weeks	every 1 mo. every 3 mo. (1 day)	Coverage Unit	F	Regional Hospital Staff	government	
Fiji	0.58	79	989	+	Medical Assistant	1975	3 years	not yet established	Health Centre	F	Medical Officer	government	
Greece	9.05	50	2 140	-									
Iran	33.02	56	1 635	+	Front Line Health Workers Q = BEHVAKZ M = BEHDASHI-YAR	1972	2 years	every 1 week (1/2 day)	Health House (KHANER-BEHDAASHI)	F	Primary Health Centre Staff	government	
Jamaica	2.03	63	1 438	+	Community Health Aide	1972	8 weeks	in-service	Villages (home visits)	F	Public Health Nurse	government	only oo ++
Malaysia	12.09	56	602	+									
Maldives	0.12	83	92	+	Community Health Worker	1965	1 year		Community Health Centre	F	Hospital Doctor--Public Health Nurse	government	
Nepal	12.57	95	101	+	Village Health Worker	1970	6 weeks	every 1 year (3 weeks)	Villages (home visits)	F	Auxiliary Health Worker	government	only oo
New Hebrides	0.08	-	-	+	Village Sanitarian	1976	1 year	every 1 year (1 mo.)	Villages (home visits + meeting house)	P	Health Inspector	community council	only oo
Nigeria	62.93	75	233	+	Community Health Assistant	1977	18 months	not yet established	Rural Health Clinic	F	Health Centre Staff	state & local govt.	
Papua New Guinea	2.76	99	557	+	Aide Post Orderly	1972	2 years		Aide Post	F	Health Extension Officer	government	only oo
Sudan	17.76	93	117	+	Community Health Worker	1976	9 months	every 1 year (2 weeks)	Primary Health Care Unit	F	Dispensary Medical Assistant	government	
Yemen Arab Republic	6.67	93	129	+	Primary Health Worker	1978	3 months	not yet established	Primary Health Care Unit	F	Dispensary Medical Assistant	government	

STRUCTURE OF INTERVIEWS DESIGNED AND ADMINISTERED
BY STUDY TOUR PARTICIPANTS

Training and Utilization of Barefoot Doctors

1. Basic data

- (i) name of place
- (ii) population
- (iii) surface area
- (iv) administrative structure
- (v) number of reporting units - samples of forms used for reporting
- (vi) vital statistics - details as to how they are collected including forms used - data previously and now
- (vii) disease pattern - previously and now
- (viii) how are the health activities financed - from what sources and through what channel.

2. Health services

- (i) Administration: structure and personnel
 - (a) at provincial level (b) at county level (c) at commune level
 - (d) at brigade level (e) at production team level.Connections and reporting procedures to the next higher level.
- (ii) Health personnel
Number of health personnel with breakdown by categories
i.e. fully trained western MD, fully trained traditional MD,
trained nurses, trained technicians, barefoot doctors, health
aides, birth attendants, others (specify).
- (iii) Health institutions
Number of hospitals, health centres, health posts, etc.

3. Barefoot doctors

- (i) number
- (ii) method of selection
- (iii) tasks carried out (list in detail) including what they are actually doing, preferably the details of one day's or several days' work from dusk to dawn, the steps they take to carry out each task, how emergency calls are received and how they are attended to.
- (iv) any standard list of drugs and equipment
- (v) any records kept and who they report to with samples of their records or forms used in recording
- (vi) Training of barefoot doctors
 - (a) study qualification (how many years of schooling before admission for training, age of entry, any other requirements for admission)
 - (b) the duration of the initial training.

- (c) where trained.
 - (d) how trained.
 - (e) who trains them.
 - (f) details of curriculum.
 - (g) whether tasks to be performed are determined before the beginning of training.
 - (h) how is his/her competence measured at the end of the training period.
 - (i) what training materials are used e.g. books, visual or audio-visual aides; the content of a page of book used.
- (vii) Continuing education of barefoot doctors
- (a) how frequent.
 - (b) the content.
 - (c) methods used.
 - (d) the duration.
 - (e) methods used for measuring competence.
- (viii) Specialized training
- (a) when and how they undergo specialized training.
 - (b) who trains them.
 - (c) the duration of the training.
 - (d) whether there is any fixed objectives for this training.
- (ix) Supervision of barefoot doctors
- (a) how regular is the supervision.
 - (b) who supervises.
 - (c) how is the supervision done i.e. what is done during the period of supervision.
 - (d) what is supervised (with details).
 - (e) how are findings recorded.
 - (f) what use is made of the findings, e.g. are they used for continuing education.
 - (g) how is the performance of the barefoot doctor assessed and does it influence his/her prospects.
- (x) Referrals by barefoot doctors
- (a) how the decision is made that a case is beyond the skill of a barefoot doctor.
 - (b) where these cases are referred.
 - (c) how often in a given period (maybe a month or a year) a barefoot doctor refers cases.
 - (d) examples of the types of cases referred.
 - (e) how a barefoot doctor communicates with the referral point.
 - (f) how these cases are transported.
 - (g) how these cases are followed up.
 - (h) in what case and how a barefoot doctor asks for assistance in his/her preventive work.

EVALUATION QUESTIONNAIRES AND RESULTS

A questionnaire was administered at the beginning of the Study Tour and another one at the end of the Tour. Only the latter is reproduced in this annex. The pre-Study Tour questionnaire contains two questions in addition to items in Section B of the post-Study Tour questionnaire and they are as follows.

1. What do you expect to gain from this Study Tour?

2. Have you read any technical articles on the training and utilization of barefoot doctors in China

Yes

No

- if yes, please list them with indication of their authors.

In answering question 1, some of the participants added to the objectives of the Study Tour (see page 3 of the Report).

EVALUATION QUESTIONNAIRE AT THE END OF STUDY TOUR

This questionnaire is designed to assess the results and conduct of the Study Tour so as to help in the planning of future similar activities.

We would be grateful if you could complete it and return it to Dr Fülöp by 12 noon on Tuesday, 29 August 1978.

A. Objectives of the Study Tour

The objectives of the Study Tour have been indicated to you in the circular letter which was sent to you on 11 July 1978. They stated that at the end of the Study Tour participants will be able to:

- objective (i): describe how community health services are planned, organized and implemented in China
- question 1: to what extent do you consider you are now able to meet this objective?

Annex VIII

- objective (ii): evaluate the role played by the barefoot doctors in rural and other areas
- question 2: what is your opinion on the role played by barefoot doctors?

- objective (iii): describe the training they receive
- question 3: do you now feel you have enough information to describe in an article, or during an interview in your own country, or in a group discussion, the training/learning process experienced by barefoot doctors in China?
 - (a) yes
 - (b) not quite enough
 - (c) not enough
- objective (iv): assess to what extent the Chinese experience could be applied or adapted to the needs of your own country and resulting benefits to the population of your own country
- question 4: please indicate to what extent you consider the Chinese experience could be applied or adapted in your own country. Please be specific.

B. Review of the pre-Study Tour questionnaire

We would like to ask you to answer again - but now in the light of your recent experience - the questions you kindly answered at the beginning of the Study Tour under items 3, 4, 5 and 6 of the questionnaire, namely:

	Yes	A little	No
3. Can you describe how barefoot doctors are selected?			
- the selection procedure used	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- by whom the selection is done	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Annex VIII

	Yes	A little	No
4. Can you describe how barefoot doctors are trained?			
- the content of their training	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- the relevance of the curriculum to the population needs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- the teaching/learning process	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- the length of the training	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- the evaluation of the training programme and process	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- the frequency of retraining sessions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- the methods of continuing education	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Can you describe how barefoot doctors are utilized?			
- in rural, urban, suburban areas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- the frequency and types of their supervision	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- the possibilities of referral	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- the relative importance given to curative, preventive and promotive services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- what records are kept	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- what reports the barefoot doctor makes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Annex VIII

	Yes	A little	No
5. continued.			
- their career opportunities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- their salaries and other benefits	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- their means of transportation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- their working equipment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- their drug supply	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Can you list the major functions/ responsibilities of the barefoot doctors?			
- in their community	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- within the health services system	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Annex VIIIAnalysis and results of the questionnaires

The summary of responses to the first four questions of the post-Study Tour questionnaire is as follows:

1. Although the participants agreed that objective (i) had been met, some of the participants expressed the opinion that the actual process of planning and organizing community health services in China was not clear to them.
2. The role of barefoot doctors was described in detail by almost all the participants. However, one participant expressed some doubt about the preventive role of barefoot doctors and postulated that the major improvement of the health status of the people was due to other causes and personnel.
3. All participants agreed that they could describe the training barefoot doctors received.
4. The adaptable features of the Chinese experience are outlined in Section IV.2 of the Report. The participants stressed that the following adaptable features were relatively more important:
 - (i) selection and training of personnel;
 - (ii) mass mobilization;
 - (iii) community self-reliance; and
 - (iv) integration of traditional medicine with western medicine.

One participant pointed out that simple, clear slogans could be effectively used in his country.

Section B of the post-Study Tour questionnaire was analyzed by comparing it with questions 3 to 6 of the pre-Study Tour questionnaire. The change in the "level of knowledge" was computed and is presented in the following table. For example, if a participant had answered 'A LITTLE' to the question "Can you describe the selection procedure used for barefoot doctors?" at the beginning of the Study Tour, and 'YES' at the end of the Study Tour, he was tallied to be in the category 'A LITTLE' in the column marked 'Increase in knowledge' and in 'YES' in the column marked "Final knowledge". Thus the first column denoted the difference between pre- and post-Study Tour knowledge and the second column the post-Study Tour knowledge.

The averages are shown for the four broad areas (or questions 3 to 6). The total average figures are based on the four 'averages' since some of the questions had more items than others. Each item was also scored by the increase in knowledge - assigning a score of '0' to 'NO' increase in knowledge, 1 to 'A LITTLE' and 2 to 'YES'. The minimum score could be '0' if no participant had any increase in knowledge and the maximum could be 34 if all the 17 respondents had all replied 'NO' to the pre-Study Tour questionnaire and 'YES' to the post-Study Tour questionnaire. In reality the scores varied from a minimum of 19 to a maximum of 30. The items with scores of 30 are marked as very significant increases in knowledge and those with scores between 25 and 29 as significant increases in knowledge.

One participant out of 18 did not complete the questionnaires. Two participants did not answer these questions in the pre-Study Tour questionnaire and have been assumed to have marked them all 'NO'. Four participants, including one of the above, all marked 'YES' in the post-Study Tour questionnaire and all 'NO' in the pre-Study Tour questionnaire.

The following table shows the results of the analysis.

Tabulation

		Increase in knowledge due to Study Tour			Final knowledge at the end of Study Tour		
		Yes	A little	No	Yes	A little	No
Selection:	procedure	7	8	2	17		
	by whom done	7	5	5	17		
	Av.	7	6.5	3.5	17		
Training:	content	7	9	1	16	1	
	relevance	6	11		13	4	
	process *	11	6		15	2	
	length of training	9	5	3	16	1	
	evaluation *	9	7	1	10	6	1
	frequency of retraining **	13	4		16	1	
	methods of continuing * education	11	5	1	14	3	
Av.	9.4	6.7	0.9	14.2			
Utilization:	in what area	8	7	2	17		
	supervision *	10	5	2	13	4	
	referral	8	9		16	1	
	curative vs. preventive	8	7	2	17		
	records kept *	11	6		12	5	
	reports made *	12	4	1	12	4	1
	career opportunities *	9	7	1	16	1	
	salaries *	10	7		15	2	
	transportation **	13	4		17		
	equipment **	13	4		15	2	
drugs	8	8	1	15	2		
Av.	10	6.2	0.8	15.1			
Functions:	in community	6	10	1	16	1	
	in health services	7	10		16	1	
	Av.	6.5	10	0.5	16		
Total	8.2	7.4	1.4	15.6			

* significant increase in knowledge.

** very significant increase in knowledge.