THE TRANSFORMATION OF THE 3-TIER

HEALTH NETWORK IN RURAL CHINA 1979-1990

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Submitted for the degree of PhD
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Abstract

Since 1979, the organisation of Chinese health care has undergone extensive changes as the result of government health reforms. These changes have particularly affected the '3-tier health network' of rural health care organisation. The '3 tier health network' which is a vertically organised linkage of village, township and county health units, has formed the basic health structure for the rural areas since the early 50's. The '3 tier network'(3TN) has been subject to the introduction of a market competitive system which is the economic responsibility system. Township hospitals have been placed under the control of township government, and a decision has been made to introduce a county level hospital of Chinese traditional medicine(CTM) for each county. Changes in the basis of health care financing and the encouragement of private practice have accompanied the decline of the co-operative medical system (CMS), a system of health insurance set up in the 1960's. On the basis of the empirical study described below, this thesis argues that there is an urgent need to evaluate these reforms, and develop policies for China's 800 million rural residents, focussing in particular on the 3TN.

In 1989, 7 counties, 12 townships and 30 villages were chosen by a structured random sampling technique in Jiangxi Zhejiang and Shandong provinces in East-China. A survey was carried out, covering health organisation, health personnel, the economics of rural health and health services for rural residents in county, township and village. In this survey, a comparison was made of the various types of health system, including those that
have come into being since reform policies were instituted. In addition, the survey also considered the general influences of health reforms on the health service for rural residents and the management situation of the 3TN.

This study found that in general the health reforms weakened the 3 tier health network in the rural areas. The health status of rural residents has deteriorated due to privatisation of the rural health care market. The main effects observed were the financial crises of township hospitals, high turnover and lack of health personnel in the rural areas, a standstill in preventive health, and the limited utilisation of health services by rural residents, since private health care replaced the CMS. The thesis argues that the main cause of these negative developments is health policies because the process of health policy making is 'top-down' in China, lacks community participation and is affected by political factors. The policies made during health reform actually worsened the already uneven allocation of health resources between urban areas and the rural areas. Urban areas have an inequitably large share and the gap continues to widen.

The thesis suggests that Chinese health policy and organisation should put the stress on the rural areas once more, as happened during the 1960's and 70's. The reestablishment of the CMS is a better way to guarantee the health of rural residents and to implement primary health care. This method of health financing could be applied not only in China but throughout the developing world.
Acknowledgements

Over the years, this work has been overseen by my supervisor, Professor Sheila Hillier, in the London Hospital Medical College, University of London. I would like to express my thanks to her for her continuous guidance and helpful advice.

I am grateful for financial assistance from three trusts: Sino-British Fellowship Trust, The Henry Lester Trust and The Great Britain-China Educational Trust.

I am especially indebted to the kind assistance offered by my colleagues in Shanghai Medical University--Dr. Mo Hao, Dr. Nai Shu Zhu and Dr. Zhi Hua Lin. I should also like to thank Professor Shanlian Hu in Shanghai Medical University for his encouragement. The students in the Training Centre for Health Management in Shanghai Medical University have also been of much help in this study.

Finally, gratitude is expressed to all those in Jiangxi, Zhejiang and Shandong provinces who gave so much of their time to share their enthusiasm and vision.

Zheng Xiang
London
March 1994
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ABREVIATIONS

3TN:  3 tier network
BFD:  Barefoot Doctor
CCPCC: Chinese Communist Party Central Committee
CCTH: County Chinese Traditional Hospital
CH:  County Hospital
CHS:  County Health School
CMS:  Co-operative Medical System
CTM:  Chinese Traditional Medicine
CVHS:  Collective Village Health Station
GVHS:  Group Village Health Station
HFA/200: Health for All by the Year 2000
MOPH:  The Ministry of Public Health
MCH:  Maternal and Children Health
NHI:  National Health Insurance
PHC:  Primary Health Care
RTH:  Reformed Township Hospital
SBCTM: State Bureau of Chinese Traditional Medicine
SVHS: Solo Village Health Station
URTH: Unreformed Township Hospital
VHS: Village Health Station
VHW: Village Health Worker
WHO: World Health Organisation
DEFINITIONS

Terms of special interest used throughout the study are defined as follows:

1. Annual income

Pure income from which productive expenditure such as cost of fertilizer, and taxes have been deducted.

2. Barefoot doctors

A part-time health worker who offers preventive and curative services in the village, who usually has nine years of general education and a minimum of six months medical training, and is not paid by central government.

3. Barefoot doctor training courses

These are offered by county hospitals, county health school or township hospitals for more than three months, and teach both preventive and curative knowledge and skills.

4. Brigades and administrative village

These are the primary administrative units in rural areas. The brigade is organized for production and related activities. After 1982, most brigades changed their names to "administrative village" and the land of the brigades has been leased to individual households. A brigade usually has a population ranging from 1,000 to 5,000.

5. Communes and township governments

These are the second level of administration. After 1982, most communes became "township governments". Township
governments are less involved with peasants' economic activities in comparison with the earlier communes. A township usually has a population ranging from 10,000 to 50,000.

6. Cooperative medical system (CMS)

A medical insurance scheme, financed by individual prepayment and collective welfare funds, organized by the village management committee or the township management committee, supervised by both the management committee and the township health centres.

7. Coverage rate of child immunization

Refers to the percentage of children who have been immunized against measles, polio, diphtheria, pertussis, tetanus, and tuberculosis.

8. Economic responsibility system

In 1983, the Chinese Communist Party Central Committee (CCPCC) issued the first document which proposed the application of the economic responsibility system to agriculture, industrial enterprises and rural township industry. The Ministry of Public Health introduced this system as a health reform in the various health care organisations. This meant that each department and each person had her/his own economic target. The individual was responsible to the department, the department was responsible to the hospital, the hospital was responsible to the health bureau. Layer upon layer of hierarchical responsibility existed. If people exceeded their target, they could earn more money and decide how
to use this extra money by themselves. If targets were not met, a fine could be imposed. All of these responsibilities, such as economic targets, were determined by contract. When this system is in operation, the directors of the work unit bear responsibility for all decision making, including personnel matters, and finance. Implementing this system indicates a greater degree of freedom in health organisations and greater responsibility of each health work unit than that which existed before health reform.

9. Rural doctors

One kind ofbarefoot doctor who has more medical training, and has passed the provincial examination for rural doctor certification. The rural doctors' medical knowledge and skills are assumed to be equal to middle medical school graduates. The rural doctors still work at the village level, and may get small monthly subsidies from provincial or local government.

10. Three tier rural health network

Health care delivery in China's rural areas is organized on three levels. At the top are the more than 2,000 counties, each of which has its own general hospital, epidemic station, maternal and child health station, institutes for the prevention and control of tuberculosis and mental disease, institutes for pharmaceutical quality control and health schools. These are funded from the national budget. At the middle are hospitals at the township level, established by the township itself and financed by both county and provincial subsidies and user fees. Some township hospitals have now reformed their management system.
The main change is that the financial responsibility for the township hospital has been transferred from the county health bureau to township government (see Chapter 5). The bottom of the rural health network is the village health station.

Three tier rural health network
11. Total infectious disease rate

This refers to the incidence of 24 infectious diseases including cholera, typhoid, bacillary dysentery and hepatitis, which by law must be reported to the epidemic station.

12. Township hospital

The township hospital is a general health work unit, which is responsible for the whole townships health administrative work, curative and preventive services, family planning and supervision of the villages health workers medical practice. A township hospital is mostly staffed by physician assistants. Each unit consists of between 10 to 30 patient beds.

During health reform, the township hospitals were of two types, one was reformed, and another was unreformed. To describe a hospital as 'reformed' means that it is independent of the county health authorities; such hospitals make their own decisions about staffing, budgeting and administration. Their staff are under contract for specified tasks and hours of work, and the hospitals themselves are under contract to the township authorities to provide medical services. By contrast, unreformed hospitals still received their subsidies from the county health authorities and had their deficits made up from the county government.

13. Village health stations (Brigade health station)

This is a health service unit staffed by rural doctors and health workers (barefoot doctors), including all types of ownership. In this study, they were of three types, solo, group and collectives. The solo village health stations were run by
individual doctors, the group village health stations were run by a group of doctors, and the collective village health stations were managed directly by the villages committee. Whereas the first two types were essentially private practices, the last was a health station 'of the village', whose doctors were paid by the village committee, as well as earning their income from clinic fees. The staff of the village health station must cover a number of primary health tasks. The village health station therefore has a number of functions beyond the simple provision of curative services, which include: 1. assisting the village committee to make and plan community health care; 2. preventing common or frequently occurring disease; 3. pursuing Maternal and Child Health management, for example by implementing ante natal examinations, visiting women after delivery, monitoring children's growth and development; 4. children's immunisation; 5. infectious disease prevention and epidemic reporting; 6. improvement in the water supply system; 7. management of health propaganda, health education and inhabitant health; 8. monitoring of occupational health in rural industry; 9. family planning work. Clearly, the demands on the village health station are great, and resources generally are small.
Chapter 1. INTRODUCTION

Part One The Development of Health Care in the World

The purpose of this section is to review basic health care structures in the developing world, with particular reference to those of primary health, and the growth of market systems. These are compared with the development of health care in Chinese rural areas. The discussion is mainly focused upon equity and community participation because equity is an underlying theme against which many of the objectives such as privatisation in the health market and distribution of health resources with PHC can be judged, and community participation has been considered generally, and for the last 20 years to be of major importance in the health programmes of developing countries. These concepts have a very close relationship for example, in the context of PHC, community participation is the one which focuses on the ability of people to improve their health and health care, by exercising effective decisions to force the shift in resources, usually with a view to achieving equity (Rifkin 1988; Bracht and Tsouros 1990).

1.1 The basic health situation in the developing world

From a historical viewpoint, health services of developing countries were generally very sparsely distributed and limited in the late 1800s. Such as existed were often provided by medical missionaries or by the early forerunners of 'colonial medicine'. After the turn of the century, they mirrored those of the colonial powers. Curative services became more widespread. In India, in the 1930's, tuberculosis was treated largely in sanatoria, following the pattern in Great Britain and Europe.
During these years the emphasis was on curative medical care, although this was accompanied by a steadily increasing understanding of the particular etiology and process of tropical diseases (Smith and Bryant 1988).

With the development of curative medical care, people found that many tropical diseases could not be controlled by the methods appropriate to medical care in the developing countries. It was also necessary to consider the environmental and climatic factors and to develop a broad-based preventive medicine. We can see this change is illustrated by Patrick Manson and Ronald Ross's public dispute which was about colonial medical policy. Manson and Ross were two dominant figures in the newly emerging medical specialism of tropical medicine in Britain in the early 1900s. Ross acted within the preventive and sanitary tradition. He had a lifelong commitment to practical sanitary reform, for example the prevention of malaria through sanitary measures: the removal of nuisances and the provision of piped water and sewers in the colonies. Manson was representative of a curative, reductionist, and research-based 'laboratory medicine'. He announced his opposition to large-scale anti-mosquito and general public health measures because he argued that such large schemes as Ross desired were neither economically nor politically possible (Worboy, S M. 1988). Though a controversy existed in making health policy during that time, there were clearly alternatives for the improvement of health in developing countries.

Since the 1950s, with the development of the world economy post-war, concern for technological development has dominated not only the economies of the developed countries but also their relationships among themselves and particularly, with
the developing countries (Rifkin and Walt 1986). In the world as whole, health resources have increased, health services have been strengthened and human health status has been improved. This later period brought a rapid increase of vertical programmes for disease control. The predominant targets were communicable diseases---yaws, tuberculosis, schistosomiasis. The vertical approach brought substantial advances in the control of a number of diseases, and this undoubtedly contributed to the considerable improvements in health that have occurred over the past several decades. Nonetheless, it gradually became apparent that multiple vertical programmes as a long-term approach entailed serious inefficiencies and redundancies (Lambo 1993, Smith and Bryant 1988).

Technological development can improve the quality of health service, but technology is only half of the solution. Of all preventive techniques, immunization is probably the most attractive. Yet, in many developing countries, despite the existence of this powerful technological tool, six vaccine-preventable diseases (measles, pertussis, tetanus, poliomyelitis, diphtheria and tuberculosis) continue to be responsible for much child mortality and morbidity (WHO 1985). The emphasis on the transfer of Western technology and organization into developing countries was diminished (WHO, 1978) because to become practical these techniques need government, society, various community organizations and individuals to cooperate and understand.

In the mid-1970s, it was realized that although in many countries the health situation had improved, in many others it had changed little or not at all, and in none could it be said to be
Health benefits do not apply equally throughout the world. In developing countries (most are in Asia, Africa and Latin America), incomes are low and most people are poor, health resources are limited and unevenly distributed. Most residents of developing countries do not enjoy good health, or good health services. Social and health standards are lower than those in the developed countries of Europe and North America. People living in the rural areas of developing countries were, and still are, 'trapped in the vicious circle of poverty, malnutrition, disease, and despair that saps their energy, reduces their work capacity, and limits their ability to plan for the future', (Mahler, 1988).

The depth of their deprivation can be expressed by a few statistics, which summarize the world health socioeconomic situation, based on data for 1980 or for the latest available year prior to 1980. Whereas the average life expectancy at birth is about 72 years in the developed countries, it is about 55 years in the developing countries. Whereas only between 10 and 20 out of every 1000 infants born in the developed countries die during their first year, the infant mortality rate in most developing countries ranges from nearly 100 to more than 200 per 1000. Whereas the death rate for children between 1 and 5 years old is only about 1 per 1000 in most developed countries, it averages about 20 in many developing countries (WHO, 1981).

1.2 Health for All by the Year 2000

How can the infrastructure of health services be developed, especially under market conditions which prevail in the world today? What are the most suitable policies and targets? How can the gap between the developing and the developed countries be
reduced? It is now widely realized that a new approach to health in the world is needed, an overall effort rather than a series of sporadic attempts to deal with individual disease problems. In 1977, the World Health Assembly decided that the social goal of all governments and WHO should be the attainment by all the peoples of the world of a state of health that would permit them to live economically and socially productive lives (WHO, 1977). 'Health for All by the Year 2000' is not a single finite target, but a process leading to progressive improvement in the health of people to which governments have committed themselves (Mahler, 1981). This is probably the most optimistic statement of purpose ever made by the world community (WHO, 1981). What does "health for all" mean? It means simply the realization of WHO's constitutional objective of "the attainment by all peoples of the highest possible level of health"; and that as a minimum all people in all countries should have at least such a level of health that they are capable of working productively and of participating actively in the life of the community in which they live (Mahler 1988 and Kelley Gill 1992). The meaning of health today therefore, differs from that of previous times. Health does not mean a simply the absence of disease but means the "physical, mental and social well being of the individual". In addition, it has removed 'health' from the sole control of the medical professional and has highlighted the importance of the environmental and social context (Rifkin and Walt 1986). The 'social' model of health has overtaken the biomedical one.
1.3 PHC is the key to implement "HFA/2000".

1.3.1 Definition of Primary Health Care

WHO's global strategy for health improvement has been entitled "HFA/2000". An international health conference held in Alma-Ata (USSR) in 1978, under the joint sponsorship of WHO and the United Nations Children's Fund (UNICEF) and attended by delegates from 134 governments and representatives of 67 nongovernmental organizations and United Nations agencies, issued a declaration which stated that primary health care is the key to attaining health for all by the year 2000 (WHO 1978). According to the declaration of Alma-Ata, the definition of PHC is as follows: It is essential health care based on practical, scientifically sound, and socially acceptable methods and technology made universally accessible to individuals and families in the community through their full participation and at a cost that the community and country can afford to maintain at every stage of their development in the spirit of self-reliance and self-determination (Mahler 1988). It forms an integral part both of the country's health systems of which it is the nucleus and of the overall social and economic development of the community (WHO 1978). This definition was underlined by some criteria that distinguished it from the earlier and often narrower conception of PHC: political commitment; equitable distribution; community involvement; focus on prevention; appropriate technology; and a multi-sectoral approach (Kenneth Lee 1983).

The primary health care targets of WHO formed the basis of health policy in all countries, particularly in the developing countries. However major differences exist between developing
countries in terms of their political philosophy, socioeconomic development, history, natural resources, and geography. All of these differences will shape and influence the finance, structure, and processes of health care delivery. Although an international definition exists, the term PHC means different things in different places. In most developing countries a variety of models of delivery exist, public, private, and voluntary. Therefore implementation and definition vary, and this variety needs to be recognised within the overall framework of WHO targets.

1.3.2 The importance of equity

The concept of equity is complex. It needs to be distinguished from equality. When referring to services provided to the population, equity may be expressed as equality, taking into account the needs of all identifiable subgroups. From the policy viewpoint, equity amounts to avoidance of discrimination against any section of the population. In other words, 'equity' is concerned more with treating people fairly, than equally. (Montoya-Aguilar C. 1986). In contrast, the term "inequity" has a moral and ethical dimension. It refers to differences which are unnecessary and avoidable, but in addition are considered unfair and unjust (Whitehead 1992).

Equity is one pillar on which PHC rests because one of the measures of success for achieving PHC is the equitable provision of health care to all people. Implied in the concept is the need to address both the issue of the social causes of disease and the existing distribution of resources. "The main criterion for moving toward primary health care in all cases is the increase
in social and economic justice in the use of health resources" (Kleczkowski, Elling and Smith 1984).

It is necessary to be aware of just how extensive are differentials in health found in the world today. In every part of each Region, and every type of political and social system, differences in health have been noted between different social groups in the population and between different geographical areas in the same country. We already know that the gaps in health services are bigger and bigger between the developing countries and the developed countries. So, from the practical point of view of designing effective and efficient health policies, large and persistent differences on such a scale have to be taken seriously and provision made for reducing them (Whitehead 1992).

Equity in Health and Equity in Health Care should be distinguished. Equity in health implies that ideally everyone should have a fair opportunity to attain their full health potential and, more pragmatically, that none should be disadvantaged from achieving this potential, if it can be avoided (Mooney 1982). Equity is therefore concerned with creating equal opportunities for health, and with bringing health differentials down to the lowest level possible (Whitehead 1992).

Equity in health care is defined as: Equal access to available care for equal need, equal utilization for equal need and equal quality of care for all (Leenan 1985). Looking at each of these themes in turn, a. Equal access to available care for equal need means equal entitlement to the available services for everyone, a fair distribution of health resources based on peoples' health care needs either between countries or within
countries. Income, age, race and sex, cannot count as relevant for allocating or denying people access to health care.

Yet, equal access for equal need is a different principle from that of allocating resources to achieve equal outcome in health. Because of the relative scarcity of resources, all needs can never be met and therefore health care has to be rationed. Equal need would require far wider intervention in, and probably restructuring of, socioeconomic conditions and might be an appropriate objective for the political economy as a whole (Max Price 1988; Rathwell 1992)).

b. Equal utilization for equal need means that use of services should not be restricted by social or economic disadvantage, there is a case for aiming for equal utilization rates for equal need. For instance, in relation to immunization and other preventive services, positive discrimination may be justified in providing outreach and other imaginative schemes to make it easier for people to use services in low take-up areas (Giraldes 1988).

c. With regard to the concept of equal quality of care, it is very important that providers will strive to put the same commitment with the services they deliver for all sections of the community, so that everyone can expect the same high standard of professional care, for example, doctors should not give shorter consultations to lower-class patients and refer them less frequently to specialist services.

The concept of equity in relation to health and health care can mean different things to different people. Equity does not mean that everyone should have the same health status because
there is bound to be some natural variation between one individual and another such as ill health due to age or sex-specific problems. Thus, some portion of the health differential attributable to natural biological variation can be considered inevitable, rather than equitable (Giovanni Berlinger 1992, Whitehead 1992), but we know that these actual differences in health status between countries and between groups within countries could be reduced, by improving the level of health of disadvantaged nations and groups as a whole (WHO 1985). The principles for action in implementing equity policies should be concerned with improving living and working conditions that are root causes, and equity policy should be directed towards enabling healthier lifestyles and be based on the principle of making high quality health care accessible to all (Oscar Gish 1990, Whitehead 1992).

1.3.3 Community Participation

a. Definition of community, community health care, participation and community participation.

It might be argued that a basic difference between traditional health care delivery and PHC is that PHC is community based. In the words of the Alma Ata declaration PHC is health care affordable, accessible and acceptable to a community with their full participation (WHO 1978). One view states that community involvement (a term sometimes preferred to community participation because it implies active rather than passive engagement in health activities) is core to eventual community self-reliance, which can be assessed by the level of involvement in and the degree of decentralisation in decision-making as well as the development of
effective mechanisms for expression of peoples's needs and demands. Community participation (or involvement) is the essence of primary health care (WHO, 1981, Mahler 1981 and Rifkin, Muller, Bichmann 1988).

We should have a clear understanding of the use of the terms 'community' and 'participation' before we discuss the means whereby community participation may be achieved. Midgley suggests that 'A community is a group of people living in the same geographical area sharing definable basic values and organizations and/or a group of people sharing the same basic interest'. The former is the one most often used in the health literature (Midgley 1986). Rifkin and others have described three characteristics that appear to be common in the concept of participation or involvement. First participation has to be active. Secondly, participation implies that people have the right and the responsibility to make choices and therefore have power over decisions which affect their lives. Thirdly, mechanisms have to be in place to allow the choices to be implemented. Considering this, Rifkin et al. suggest the following definition: "Community participation is a social process whereby specific groups with shared needs living in a defined geographic area actively pursue identification of their needs, take decisions and establish mechanisms to meet their needs" (Rifkin, Muller and Bichmann 1988). The WHO definition of community participation suggested in the Alma-Ata declaration is: Community participation is the process by which individuals and families assume responsibility for their own health and welfare and for those of the community and develop the capacity to contribute to their and the
community's development (Bracht and Tsouros 1990). To sum up, the principle of community participation is that 'people have the right and therefore should have the opportunity to participate individually and/or collectively in the planning, implementation, and evaluation of their health and environments' because city plans and/or health programmers do not often reflect local people aspirations and needs (Bracht and Tsouros 1990).

Community health care goals and interventions would (in addition to individual and family goals) include, for example: those related to basic education, skills training and adult literacy; employment and occupational safety; adequate and safe housing; adequate and safe food supplies; adequate and safe water supplies; environmental control and sanitary disposal of wastes; population, community development and recreational needs; public health education, information and legislation; disease surveillance, prevention and control; collection and utilization of simple health and demographic data access to health care and essential drugs and, promotion of individual, family and community self-care activities. These goals include some important social needs as well as those which are required for monitoring and evaluation (Monelosso 1992).

b. The how of community participation

The recent global economic crisis has made it even more clear that governments have and will continue to have, only a limited capacity for the provision of health services to their populations. It is equally clear that the primary health care approach demands a much broader attack on the various determinants of health which lie outside the traditional concerns of the health
services. This is in turn demands new forms of dialogue between communities, health professionals, and social and political groups to mobilize the necessary action on many fronts for health and social development (Smith and Bryant 1988). The scenario at the operational level would be to 'integrate' the efforts of coordinated social/community organizations, health teams and local development agencies. Client communities would play an increasing role in implementing these multidisciplinary, multisectoral activities (Monekisso 1992). Such a community infrastructure would include local leaders, health committees, voluntary organizations, community health care workers who are professionals and the representatives of community who share a common political or economic situation or are living in the same place (Piette 1990).

According to WHO, community participation should relate all levels, district or local, intermediate and central (WHO 1987). There are two main approaches to community participation, the first is the participation through consultation in formal decision-making mechanisms: people participate in policy-making, planning and/or implementation of decisions which relate to health, health promotion, the environment and care services. Community participation can result in different degrees of influence at different levels in decision-making structures, for example the representatives of the community directly attending official decision-making bodies; seeking advice from community lay organizations and social groups about new plans; keeping the public informed about policy decisions or new developments (Biacht and Tsouros 1990). The second is that community level activities are undertaken as part of community action and certain kinds of
groups engage in them, such as self-help group for people with AIDS, diabetes or social movements concerned with health (Nutbeam 1986). Another model has described the process of participation as top-down or bottom-up. It means that in the community programme's initial phase it is the health planner (an external agent) who is the driving force in the community work with a stated goal. The health planner is in a position to introduce specific problems to the community members and aid them in formulating their goals and suggested solutions. According to the theory, the community representatives (internal agents) gradually become more and more involved and after some time begin to take over responsibility for the programme. This approach, which is based on a decision-making process that focuses on community needs rather than the planner's needs, offers a kind of 'bottom-up' approach (Bjaras 1991).

We already know that community participation is very important. Community member participation can achieve many benefits such as pre-testing the feasibility and acceptability of new programs or ideas; gaining wide spread support and securing the efforts of volunteers; forcing co-ordination between loosely structured agencies and organizations both public and private and negotiating conflicts between political factions and special interest groups. Yet different countries and cities have different ways of engaging the community and its representatives in decision-making, planning or implementation of activities, in the health services, care of the environment and those activities which are the responsibility of municipalities, such as housing and social services (Bracht and Tsouros 1990).

In some countries, community participation programs, in
spite of promotional efforts by international agencies, have not succeeded. The experience in Latin America, with the exception perhaps of Cuba and Nicaragua, is that community participation has failed to improve the quality of life of the majority. The most important reason is that the Latin American political systems have been characterized by instability, authoritarianism and military intervention, which destroys democratic leadership and grassroot organizations. So the most basic statement that needs to be formulated is the following: the degree of success of any form of community participation is inversely correlated to the degree of social stratification of the society (Ugalde 1985).

It is worth mentioning that community participation in decision making is not easy to implement in highly stratified societies. Community representatives may want to share power with the authorities; in this case they play at best a defensive role. If the representatives want to change the rules of the game, they become protesters, which is unlikely to be well accepted by the authorities (Piette 1990). The case of Cuba and China are particularly interesting in this respect. Massive community mobilization is very efficient for implementing PHC. Community level health activities do help people to get basic health services. Yet this remains a strategy of implementation only. The health care delivery system was designed without community inputs. The health policy-making is always from 'top-down'. An 'external approach' characterises local health activities completely (Ugalde 1985). In China, health policies are made by the Ministry of Public Health and the State Council. The whole process is controlled by a few officials, and advice is rarely sought from
community organization even professional health groups. Health policy-making was influenced often by political factors, for example the cooperative medical system diminished during recent, market based health reform (see part two).

c. The place of community health care workers

Types of health manpower very between and within countries according to, for instance, the population's needs, the resources available for satisfying them, historical traditions, and the power of different professional groups. It should not be forgotten, however, that many types of manpower are, or could be, potential substitutes for each other, in both technical and financial terms. The point about substitutability, now generally accepted and a concept familiar to economists, is that in many areas of primary health care, people with a limited training, appropriate for tackling the major local health problems, can function very well as alternatives to medical practitioners. For instance, for some time now, the use of various local health workers such as health auxiliaries, and more recently community health workers, has been advocated as a means both of improving the community's access to basic and primary health care and of increasing the actual amounts of care received.

The concept of the 'health auxiliary' and 'community health workers, however, have been subject to varying interpretations. According to Kenneth Lee's definition: "these types of health personnel mean people who are paid to assist and be supervised by a professional worker and, hence, both complement and supplement professional staff" (Kenneth 1983). However, with changes in the model of health care delivery and the multiple-
needs of PHC, traditionally trained health personnel have found it difficult to adapt to the orientation required for a successful implementation of effective community-level primary health care because their training has followed a traditional medical education model with a strong emphasis on academic criteria (Chimere 1992). Community health care workers (local health workers) require a set of skills that are not characteristic of clinically trained health personnel. Non-clinical skills are required to be exercised in a substantial proportion of community health worker's jobs. Bar-on (1990) in a study of social workers involved in assessment of client needs and co-ordination of services discovered that only one-third of the practitioners' time was spent interacting with the client. Most of their time was spent interacting with managers and administrators, other professionals and members of clients' informal networks. Community health workers, like social workers appear to need a diverse range of skills that extend beyond the realm of narrowly defined clinical practice. In regard to organization and community development a community health worker will frequently mediate the relationship between two organizations for the purpose of sharing resources (for example meeting rooms), coordination of activities (for example a joint policy submission), constructing joint activities (for example a campaign coalition) or even negotiating responses to new policy directions such as the introduction of some fees for services. Frequently, these skills are undeveloped when community health workers first move into community health centres. Typically, they learn to do this 'by the seat of the pants', that is through informal learning from colleagues and
through a process of trial and error. They often just keep trying different contacts until 'something happens'. Very little is known about the ways successful community health workers choose, establish, maintain, prioritize or end these informal relationships that are so important to community based practice (Walker 1992).

In the developing countries, community health workers have been trained specifically for rural areas. These community health workers have different names in different countries and undertake many primary health tasks. In Indonesia communities are actively involved in primary health care through close interaction with health centres, selection of village kaders (community health workers), involvement of village councils, and self-help activities. Such activities are often included in village community health development efforts (Smith and Bryant 1988). In India, in October, 1977, on Ghandi's birth day, the Indian government launched a widespread new health care experiment the Community Health Volunteer (CHV). The aim of the health volunteer programme was train 1 volunteer from each village. Each community would provide basic health services such as minor treatments, preventive measures and liaison with specialized health institutions (Jobert, 1985). There is little doubt that the Chinese Cultural Revolution (1966-1976) re-focused and, in some cases, revolutionized professional views on manpower for the delivery of primary health care. Barefoot doctors were farm workers trained in simple diagnostic and treatment techniques; they gave simple medical care or advice, but they also continued to do farm work. Rather they were essentially agricultural workers.
and were paid as such, notwithstanding that they gave at least a part of their time to health work in health stations or in the fields (e.g. providing health education and preventive medicine, and dealing with medical emergencies) (Sidel and Sidel 1980).

It is an important measure to train community health workers for solving the shortage of health personnel in the rural areas of a developing country. The training contents and methods are various in the developing countries. Usually study and service are combined. The training time is divided into stages. The periods are one month, several months and one year. The training place is usually the medical school or a rural health training center. Occasionally, training occurs at the hospital. The city also sends medical teams to the rural areas to help in the training of health workers (Mei Ren Liang 1989).

1.4 Health services delivery in the market system

As stated already HFA is a new approach to health in the world. PHC is the key to implement this new approach. The government, society, community and individuals have the same duty to realize a global goal. However recent years have seen changes in long-standing ideological beliefs and political systems and institutions, including a dramatic shift in the attitudes of some countries toward the role of government. Government is no longer viewed as the sole planner and supplier of all elements of economic and social life. These results have been manifested in a variety of ways: some countries have begun to restructure their national economies and system from centrally planned to market-based economies; some countries are attempting to introduce
market-based elements into their economies with inclusion of the private sector as a significant element while maintaining certain social principles to govern how the market may operate; others have had a significant private sector which is now taking on a greater role with increased responsibilities (Nowbrander and Parker 1992). How do these changes affect the health sector? How are health services delivered in the market system? As far as the privatisation of health services is concerned, are the underlying assumptions correct? The answers to these questions are likely to be useful to Chinese health policy makers.

1.4.1 What is the market approach?

Economics is simply the study of human action, and that quite clearly includes the purchase and provision of public good. The economic activities are in a marketplace (Grant 1991). The market relies on the consumer's ability to decide which combination of goods and services best meets his or her needs and desires within given income-constraints. On the financing side the market approach is characterised by a multitude of goods competing with each other. The market economies produce and deliver a wide range of consumer goods and services with impressive efficiency (Naylor 1987). According to the market principle health care is provided by a multitude of health care providers each competing with other to serve patients. Prices are set by the market process to equalize supply and demand. In reality the pure market approach does not lead to socially desirable results in the case of health care because contrary to need the ability to pay is unevenly distributed between patients...
(Schneider 1992), but health care is commonly thought of as a 'public good', i.e. basic needs are to be met for all people, which is different from commercial goods exchanged depending on an individual's economic condition (Naylor 1987). Everyone has equal opportunity to obtain the good even though societies have limited resources for health care. Health care, is the one of welfare goods that can be improved in the public approach, through, amongst other things, redistribution of income according to needs and health care planning (Young 1990).

1.4.2. Health service delivery and the type of financing

In the health care market, there are various models of health services delivery, with different methods of financing. What are these models advantages and disadvantages? Which model is suitable for Chinese health care? It is useful to view these models of health services and activities.

a. Free government care

National health systems which provide free service to the entire population and are financed from a central government budget exist in many countries, for example, the NHS in the U.K. (Harrison 1990). In some cases, only certain groups of the population, such as the poor or health workers may use public services without charge, as in Zimbabwe. Other groups defined by employment, such as the police or armed forces, may also have facilities and services designated for their use which are financed from general government revenues and do not charge patients using the services, as in Ghana (Newbrander and Parker 1992). In China, there is a mixture of health system. In 1949, a
Communist government came to power. In 1952, P.R. China's State Council issued the document "Regulations concerning the National Health Insurance for National Working Staff". The basic characteristics of the system are that the health system belongs to the nation and people; the main source of finance is from the government budget; the government controls almost all health organization (the construction, the distribution and the scope) (Du le Xun 1988). Free government care provides coverage of urban residents and public service employees through various insurance schemes. There is establishment of a cooperative insurance system for a proportion of rural residents. The rest of the population has to utilise a full fee-for-service system (Yang P.L. and Lin, V. 1991).

Free government health care is one kind of welfare service, but where this is accompanied by an abolition of prices, the necessary means to weigh value against cost is lost. The result is a sector of arbitrary size. Users will always demand more than is supplied, leading to waiting lists and to rationing by suppliers. Another main objection to free health services is that, competition is absent and this contributes to inefficiency of services. This argument provided one of the main rationales behind the U.K. health care system reforms. The NHS embarked on a series of apparently radical changes in its organization and operation after April, 1991: these included the introduction of provider market competition, where hospitals compete for service contracts from districts acting as purchasing agencies, GP budget holders and private patients and insurance plans. Importantly however, the new style health market is an internal market and is
not free-market (Culyer 1985; Harrison 1991; Robinson 1989), and in this maintains a degree of central control so that it is still plausible to speak of a National Health Service in the UK.

b. Social security insurance

Health insurance of Western Europe is part of social security insurance. The social insurance program is the most popular health system in the world. It provides one insurance mechanism for everyone in society. Social health insurance links employment. The funds to support health insurance come from employer-employee payroll taxes or premiums. People have to pay their own premiums and are also forced to pay taxes for someone else's health care; each person pays for him/herself and for everyone else as well. This is called also "compulsory health insurance". Social health insurance is the best way to guarantee fairness in health care. It places the entire population in one risk pool and spreads the risk from the disabled and elderly to the healthy and young. Normally the government subsidises health services and a small percent of fee-for-service payment is from patients when they see the doctor (Shi Zhong Dao 1989, Han De Hui 1993, and Bodenheimer 1992).

Social health insurance has the best chance to solve the cost and access crises simultaneously. To control the inevitable inflationary impact of extended access, a single public insurer can set fees, fix budgets and reduce administrative cost (Evans 1986).

According to a World Bank study on the financing of health services in developing countries, there has been intensive
discussion of options for raising more resources for the health sector. The main option is compulsory health insurance (Abel-Smith 1986). The primary reason has been that many, if not most, developing countries for example, Tanzania find themselves no longer able to raise the additional revenue required to finance their health services through taxation, let alone find the extra resources needed to achieve "Health for all by the year 2000" under present economic difficulties. A report on the potential of compulsory health insurance to cover those in the formal sector of employment is currently being prepared (Abel-Smith 1992).

During recent years, some European countries have initiated a reform introducing markets within social health insurance systems. In the decentralized Swedish health services, several county councils have started such reforms. This has happened independently of local political majorities. The problems that the reform is expected to solve are officially formulated in terms of lack of freedom of choice for patients; low accessibility to primary health care; decreasing productivity; and finally, unclear incentives for higher productivity and quality within the health services (Diderichsen 1993). In light of the above sorts of problems including U.K., it is tempting to say that the solutions in most of the Western European countries is to promote a movement of health services towards greater market competition (Young 1990).

C. Private health insurance

Insurance is a social mechanism by which people reduce the adverse financial consequences of an unpredictable event by
paying small amounts in advance to an institution, which in turn pays all or part of the cost incurred by the event. Insurance allows people to pool their risks in order to prevent catastrophic financial losses (Bodenheimer 1992). We know that many nations provide health insurance through government (e.g. U.K., Canada) or through employee-oriented private funds set up for particular occupational groups or workplaces (e.g. Germany). In contrast private health insurance relies most heavily on companies that sell insurance as a business venture. The health service is a commercial good, which can buy and sell in a free market. The provision of health services by the for-profit private sector where private insurance covers the cost of care, is common (Nowbrander and Parker 1992). In this competitive commercial insurance, insurers who wish to survive must employ the underwriting principle that, by its very nature, discriminates against those who need care the most and cuts the poor—who cannot afford the premiums—out of the insurance process. United States, most Latin American and African countries have implemented this kind of insurance (Bodenheimer 1992).

It is useful to consider the U.S. experience. Historically, U.S. health insurance was developed by health providers through Blue Cross and Blue Shield to increase the purchasing power of potential patients, but due to fierce competition from commercial insurers, almost the entire health insurance apparatus, including the Blues, has now become commercial in essence (Bodenheimer 1990). What have been consequences of this type of insurance in the U.S.A.? The Economist writes that "Americans are obsessed about their health.
They spend twice as much per head on it as French or Germans, three times as much as the British. Doctors earn, on average 200,000 US dollars per year——Yet Americans are less healthy and looked after than other rich Westerners. Their average life expectancy is shorter and their infant mortality higher. For the inner city black poor, things are much worse. Such a child born in Washington, D.C., has less chance of reaching his first birthday than a child born in Jamaica" (American Health Care 1989). The reason is that thirty-five million people, or 15 percent of the population, are without health insurance today——an increase of 10 million, or 25 percent; since 1977. Five million people annually report that they do not seek medical care because they are unable to pay for it (Mundinger 1985). What are the main problems in U.S. private health insurance? Bodenheimer states: "the major problems with the private insurance industry's domination of U.S. health care sector are the industry's responsibility for health care inflation, the industry's waste of billions of dollars in administrative and marketing costs, the unfairness of the insurance principle, and the insurance industry's frightening degree of financial and political power (Bodenheimer 1990). How will the private health insurance problems be solved and American people health be improved? The U.S. has moved to implement health reform. The basic principle of the Clinton reform proposals are that health insurance should cover everyone in society; administrative costs should be cut; health service prices should be affordable and people can choose between health insurance plans; the quality of health service should be improved; Society and insurance organisations have the duty to be responsible
It is tempting to say that the health reform in the U.S. is a return to a public system of health care and embodies some good elements from the social insurance program of European countries.

d. Risk sharing (Risk-pool)

How do people obtain basic health services and pool their risks to prevent a few individuals from suffering catastrophic financial losses at times of major illness if they are not covered by governments free health care or any kind of insurance (social security insurance and private health insurance). For example, in the U.S.A. particular patient groups (Diabetes and AIDS) among the uninsured are among the medically uninsurable, whom private companies refuse to insure because of preexisting health conditions (Brown and Dallek 1990), and in China, most rural residents are not covered by any kind of health insurance. Faced with this difficult circumstance, the primary mechanism for reducing financial obstacles to health care is through risk sharing arrangements. For the individual, sickness may occur randomly and unpredictably. But, since only some of the contributors will get sick, each contributor in a risk sharing scheme can pay substantially less than s/he would have to if s/he became ill and was not covered. Risk sharing schemes therefore ensure that the catastrophic costs that may confront any individual will not be an obstacle to meeting their medical care needs (Price 1988). There are nineteen states in the U.S.A. which have established high-risk pools for the medically uninsurable (Brown and Dallek 1990). There is another popular form of risk sharing in the U.S.A. for basic health service delivery, i.e.
Health Maintenance Organisations (HMO). The HMO is essentially a form of prepaid medical care. Patients enrol on an annual basis, paying a set fee, usually paid by the employer. In return the HMO will provide all the health care that is deemed to be required. The HMO will have its own health centres, and will either contract with hospitals for in-patient care, or, in the case of larger HMOs will provide these facilities itself. HMO physicians will be salaried, and probably employed on a full-time basis (Rayner 1988). In China's rural areas, the Cooperative Medical System is an example of a risk-sharing scheme. The rural residents pool some money together for their health care. The CMS ensures the basic health needs of rural residents in China (see Definitions)(Xiang Zheng 1988).

The risk sharing scheme is a special type of health service market. It is non-profit making. Characteristics of fund collecting in this scheme are: a. Prepayment for health service---the coverage includes service items calculated at base on cost/benefit and the amount of money that people prepaid. b. The fund paid jointly from participant, employer and local government. c. Premiums were compulsory.

The risk sharing scheme is not a free health service, but it guarantees that participants can obtain basic health services and medicine when they need. Because this model includes a prepaid system that runs under limitation of budget, it can use the fund more reasonably and with increased service efficiency. Health service users and suppliers are linked together in the risk sharing system, unlike an insurance system in which financial matters are controlled by the insurance company, and there exists
a triangular relationship that sabotages the economic 'brakes' that health service user and supplier may place upon each other. In addition, the health worker in the risk sharing system is salaried, which is different from payment according to quantity of health service under a health insurance system because the latter can be an incentive for doctors to supply unnecessary services and medicine (Hsiao 1993).

Risk pools do allow uninsurable people to become insurable. The main problem with risk pool is that the risk is spread only over the sickest portion of the population, thereby necessitating high premiums, for example, traditionally, in comparison to fee-for-service based insurance, HMO premiums are higher, but its coverage for anyone person is more extensive. In the high-risk pool for the medically uninsurable, the premium is high, which means that low-income people cannot afford the policies. The pools therefore are limited in scope. Some cases of risk pool are also vulnerable to "Moral hazard", similar to the CMS in China, which causes a chronic loss of money to the pools. So in the US, risk pools are usually geared to help middle-class uninsurable persons, and in China, the CMS is partially made up by collective fund, and a state subsidy (in preventive medicine) (Cohodes 1986, Luo Yi-Qun 1985, Rayner 1988).

e. Fee-for-service (FFS)

Fee-for-service is the traditional method for obtaining health care. People have to pay each time they use the service. Health services are commercial goods, so the price changes are completely dependent on the market. People who need more health
care must pay more than people who need less health care. This is typical of the private health system. There are now many developing countries implementing fee-for-service. One of the most important, from the point of view of this thesis is China's rural areas now, most rural residents have to pay every time in their visit the doctor (Xiang Zheng 1988).

Every country is looking for an ideal model to perfect its own health care. To observe the potential of various models, the governments are introducing the market competitive system and the privatisation of health care enterprises in order to improve the working efficiency of health system. The stated aim is to create more choices to the patient in order to satisfy various levels of need. However the leading proponent of private health insurance, the U.S.A. is now implementing health reform, based on some examples of Social Security Insurance in Western European countries. Developing countries will choose a particular model depending on their own condition. Whether the privatisation of health service can improve the quality and quantity of health care and its working efficiency or not, is a worthwhile topic for discussion.

1.4.3 The change of health market system--privatization

a. Definition of privatization

In very general terms, privatization consists of a society moving from publicly to privately produced goods and services. Privatization generally entails making changes in some of the 'rules of the game'; i.e., changing some laws or regulations, on the nature, scope or existence of specific
government programs, and doing so in such a manner as to allow or encourage private sector entities to enter into domains in which they previously were not involved, or were not heavily involved (Fiedler 1990). Within the health sector, the privatization options are (1) private sources of funds (Price 1988). (2) the disposal of public hospitals and state owned health centres to the private sector. (3) substitution of fully subsidised health care services to the user pays philosophy, either as a part charge or a full charge to the individual. (4) the contracting out of public services to the private sector (Glennie 1991).

The respective roles of the public and private sectors in the financing of health services vary among developing as well as developed countries, in 13 Asian countries private sector activity is strong: the private, public and insurance components as a per cent of total health expenditure were 48, 42 and 10, respectively. The range of private health expenditure was 8-71% with a median 58% (Griffin 1992). For 21 African countries, private expenditure on health ranged from 14 to 81 % of total health expenditure with a median of 51% (World Bank 1987). By contrast, public spending accounts for more than three-quarters of health spending, on average, in the OECD(Organization for Economic Cooperation and Development) countries and accounts for more than 60 per cent of spending in all countries expect the United States and Turkey where is above 40% (Newbrander and Parker 1992).

b. The impetus for privatization

In recent years, privatization has been most commonly discussed as a public goal motivated by (1) pragmatic considerations---to reduce the burden on treasury and taxpayers,
and the belief that the private sector will be a supplementary force to an inadequate public sector (Naylor 1987). (2) to avoid some of the bureaucratic barriers to progress faced by public agencies, privatization of the public health system introduces competition which would lead to gain in efficiency and effectiveness. The people who support privatization think that state-run organizations are inefficient and impersonal with employees who share no financial incentive to provide a quality service (Donnelly 1991). (3) to give patient more choice within the health system (Glennie 1991). (4) to charge directly in the form of user fees and co-insurance and thereby reduce abuse of prepaid health service because the free health service and social security health insurance are too comprehensive and suffer from rampant-"Moral hazard" (Naylor 1987).

In addition, the impetus toward privatization often comes from the providers themselves who wish to expand the private sector's share of the market, since it offers the greatest opportunities for incomes. These kind of health services have been seen in many African countries and in China, in the relaxation of restrictions on private medical practice by government physicians, such as in Sudan, the public provider is allowed to use the public facilities and staff in the evening to see private patients; in China, public hospitals in cities have opened their doors to private patients, but many people especially the rural patients find it difficult to pay for the health services they have used (Xiang Zheng 1988, Newbrander and Parker 1992).
c. Is privatisation a viable option?

(1) As has been pointed out, health care should be a right and each person is entitled to a fair share of such services as determined by medical need rather than by income, or social status. But most of the hospitals which operate on a fee-for-service basis are profit-making enterprises. The private health system offers financial incentives to doctors to perform more investigations and treatment than are necessary or justifiable. Unlike other markets, the demand for health is strongly influenced by the provider. In the fee-for-services sector, health expenses form a much higher proportion of poorer households' income than of richer households'. Privatization of the health system limits poor people's needs, and produces inequality of access to health services (Fein 1986). Even so some people have joined risk arrangements such as, private health insurance. By its very nature, private health insurance cannot insure 100 percent of the population; it must exclude the poorest and least healthy. Insurance is based on inequality-segmentation of risk. In the free market, people are victims of the 'unfettered inequities' of the insurance principle (Daniels 1979, Bodenheimer 1990).

(2) As has been mentioned above, a private health system is a profit-making enterprise. There is a risk that this style of approach could result in the overuse of technology because of financial incentives available to doctors. The administrative cost of running a private health insurance system including those in the physician's office is very high. Whereas in Britain less than 6% of health care spending goes on administration, in the US the figure is some 22% (an estimated 77.7 billion dollars in 1983)
Therefore a private health system poses problems of cost control.

In view of total health care cost, the UK's NHS, where there is government ownership of facilities, and Canada's national health insurance system, in which the provincial and federal governments pay and tightly regulate health care providers, cost containment has been largely successful. Health care costs account for nearly 11 percent of the GNP in the US but only 6 percent in U.K. and 8 percent in Canada (Himmelstein and Woolhandler 1986).

(3) The privatisation of health services introduces market competition into the health system, but it cannot be used as a means to improve government effectiveness because of the complex nature of health care delivery, and the wide variety of professional disciplines represented. In addition, the information gap between consumers and providers and the uncertainties associated with illness impede the decision process in health care. It is particularly difficult to measure the providers' performance (Smith and Lipsky 1992, Naylor 1987). So the health care market is imperfect on both the demand and supply sides. Consumers do not understand the product, and are uncertain as to how to satisfy their needs from a free health care market when they are ill.

(4) Privatization affects community health care and PHC. We know that a government run department of Public Health can change priorities from alcohol and drug abuse prevention, to AIDS education, to the care of chronic mental patients and counselling in successive budget cycles without batting an eye. This fits with a growing feeling that successful community health
care and primary health care should by their very natures be collaborative and intersectorial. It is very difficult for a private health system to undertake this work. Many established private health agencies either are reluctant or refuse to serve the developmentally disabled and the chronic mentally ill—two groups for which government desperately needs community services because of deinstitutionalization (Donnelly 1991, Smith and Lipsky 1992).

All countries need a process for making health policy choices and priorities in PHC that will serve to determine who gets what, and that delineates as clearly as possible what kinds of health services will not be provided and why. These choices should not be left to the free market because health service delivery in a free market is geared to profit from services and rarely considers the person's real need (Young 1990).

To sum up the privatization of health services, we can see that privatization probably increases working efficiency (the contract system) and reduces the phenomena of 'moral hazard, but it concentrates too much upon profit-making and has very high administrative and marketing costs. Its unfairness principle affects the working class in industrialised countries and the poor in developing nations more deeply than any other sectors of the population. Privatization is non-collaborative and non-intersectorial, and therefore cannot improve primary health care structure which are very important to developing countries. The privatization of health services seems unsuitable for an imperfect health care market especially in poor areas, for example, health care privatization in Chile came about in an unusually strong
period of economic growth that was fuelled by heavy borrowing. That short-term boom ended, followed by recession, high unemployment, and a skewed distribution of income which reduced consumers' purchasing power to pay for private health services (Scarpaci 1987). The claim that imposing direct charge and user fees can reduce the abuse of medicine is only superficially correct. Such schemes predominantly act as deterrents for the poor and the elderly, result in increasing medical fees to recoup losses and ultimately only redistribute costs rather than effecting savings. Finally, countries seeking to increase the role of the private sector must ensure that they do not simply shift the cost burden from the government to elsewhere, and that they make adequate provision for safeguards for providing care to the poor and underserved (Benatar 1987).

1.5 Summary of Part One

As has been pointed out health conditions in the developing countries are much poorer than in the developed countries. The distribution of health resource is unbalanced. This imbalance is not only exists between the developed countries and the developing countries but also within countries, for example urban areas and rural areas. According to WHO principles, health should be every person's right. Every person should have the same opportunity to receive basic health services. The gap in health status between the developed countries and the developing countries should be reduced. To solve this problem, WHO issued a global target "Health for All by the Year 2000". Afterwards, WHO made a declaration which stated that Primary Health Care is the key to attaining this global target. Priorities in the PHC should
be set depending on each country's condition, but an important principle to secure implementation is equity. The process of PHC needs to involve the whole society, through community participation. Community participation should be related at all levels, and the objectives include not only health education, immunisation, family planning but also policy making. Chinese health policy making is usually "Top-down" in character. To increase effectiveness community participation is required which means from the "Bottom-up". Community health workers are the key to successful community participation. They differ from traditionally trained health personnel, and they need a diverse range of skills that extend beyond the realm of narrowly defined clinical practice. They are organizers, propagandists and promoters of community health activities.

Countries should pay attention to the change in the world health care market when they realize WHO's global target. Every country, but especially developing countries should select the appropriate health service model. From experiences over the last thirty years, it has become clear that various health service models have advantages and disadvantages. The current trend observed is for the introduction of market competition and privatisation by governments into a previously free health system. The purpose of these reforms is to increase the efficiency of health services and reduce the financial burden of government. It appears that the fee-for-service or and private health insurance system cannot satisfy the peoples' need. It is necessary that governments support their health care systems and expand the coverage of health services. The test of this change is whether
the privatisation of health services can increase the quality and quantity of health services. In comparison, the privatisation of health services may increase working efficiency, but it reduces equity of health services and affects the implementation of PHC. Privatisation does not promote a positive means of perfecting the health care market, and is particularly unsuitable for developing countries and poor areas.
Part Two: Chinese Health Care Transformation in 1978-1990

From 1978-1990, following the third Plenary Session of the 11th Chinese Communist Party Central Committee, the Chinese government implemented widespread economic reform (CCPCC Decision, January 1990). In the medical field, changes have been both a reflection of, and response to the economic reforms. Modernisation and new investment in science and technology have produced an emphasis upon the quality of care and the promotion of fundamental research into disease. Changes in the rural economy, in particular the responsibility system, have altered the system of cooperative funding for medical care (Hillier, 1988). So before I discuss "the three tier health network transformation in rural China", it is necessary to introduce the history of Chinese rural health care (1949-1978), and then to review the impact of health reforms in different sectors of Chinese health care, in order to realize the overall changes in Chinese health care organization, particularly in rural health care.

1.7. Historical Perspectives on Rural Health Care (1949-1978)

In 1949, China was described as having the greatest and most intractable health problems of any country in the world. The extent of morbidity and mortality from infectious and parasitic disease was enormous. The infant mortality was 200 per 1000. The death rate was 20 per 1000. The life expectancy was only 35 years. There were about 430 hospitals, although most of China's 2000 counties had a small health clinic (Wu Yan Ming, 1988; Hillier and Jewell, 1983).

After 1949, the structure of the health care system was pyramidal, with the Ministry in Beijing at the apex down through
provincial and County Bureaux of Public Health with a 3-level network at the base linking the village to the township and county hospital. This model of health service delivery was similar to that designed by the League of Nations Health Organisation experts in the 1930's (Wang Jun Le, 1988), and has proved to be remarkably robust.

As soon as the Communist government took power, immediate action was taken—centrally controlled and directed, towards the eradication of parasitic and infectious disease. Mass environmental 'clean-ups', and inoculation campaigns continued throughout the fifties, supported by a growing number of epidemic prevention stations. Towards the end of the 1950's during the 'Great Leap Forward', when the Commune (township) became the fundamental economic unit, and the basis of agricultural production, free health care, based on commune and village clinics was introduced (Hou, 1958).

From 1958-1963, the unsuccessful agricultural policies of the Great Leap Forward wiped out many of the developments in health care organisation and left the rural areas of China severely disadvantaged relative to the cities (Hillier and Jewell, 1983). Free, commune based health care ceased, and treatment was to be obtained only after a journey of several days and long queuing at the county hospital (SYC, 1983).

During the Cultural Revolution (1966-1976), radical changes in the health care system were proposed by a political commitment to 'putting the stress on rural areas'. This generalised directive undermined the detailed planning, which the Ministry of Public Health (MOPH) favoured. The cities were required
to send teams of doctors and students to work in the countryside, as part of mobile medical teams. The basic 3-level network of rural health care was revived, with the major emphasis on supporting and staffing the village clinics and expanding their numbers. Central government support for rural hospitals and clinics increased, and whereas in 1965 only 18% of hospital beds were in small town clinics and hospitals, by 1971 this had reached 41% (SYC, 1983).

The production brigade (village) became the focus of two important developments, the barefoot doctor, and the Cooperative Medical System. Although medical auxiliaries and village health workers had existed since even before the Revolution, they now became a key focus for solving problems of rural health care. Young peasants were selected by their village, given a short practical training in all aspects of primary care, both preventive and curative. This enabled appropriate staffing levels for the expanding rural services to be achieved in a short space of time. It was claimed that they treated 80% of illnesses in the villages, limiting expensive hospital referrals. By 1972, there were about 2 million barefoot doctors, a figure which has never been matched since (Hillier and Xiang Zheng, 1994).

Each area or unit was designed to be self-financing and responsible for its own needs. In this way it was thought the incentives for improvement were strong and the control of waste and mismanagement easier. Risks were shared and the scheme represented a redistribution of resources within the brigade. The CMS can be seen as an effective method of providing low cost services for millions of people. Some 85% of brigades were in the
scheme by 1975 covering 650 million people, about 76% of China's rural population (World Bank, 1984).

These developments were consolidated in the years following the Cultural Revolution. An infrastructure of basic level health care existed, with a referral system upwards for serious illness; there was decentralised responsibility for provision and financing; low cost care and basic health workers. Preventive health care was organised at grassroots level, carried out locally and supported by a chain of epidemic prevention stations and maternal and child health centres. This appealed to overseas visitors, who saw an attempt at rational and equitable health care organisation, balancing the needs of town and countryside.

But the difficulties encountered in the late seventies, before the economic reforms, were already undermining the rural health care system. Although some degree of redistribution had been achieved, overall investment by localities was low. In addition, health care facilities nationally, both in town and countryside, were failing to keep pace with population growth, and with the changing pattern of disease (Hillier and Xiang Zheng, 1994). Whilst parasitic and infectious diseases still took their toll, morbidity and mortality from chronic complaints like heart disease and cancer were also increasing. The localisation of primary health care tasks at village level, although admirable in promoting horizontal and grassroots integration placed a huge burden on the primary care health workers—the barefoot doctors. Their numbers were declining by the late 70's, they were down from 2 million in 1975 to 1.8 million by 1978. This was still however, over an average of 2 per village (Hillier and Xiang Zheng, 1994).
1.8 Changing Health Policies

1.8.1 The background of the developments in health care

During 1978-1989, Chinese health care organization changed dramatically. The number of doctors increased from an average of 0.5 per 1000 population to 1.01 per 1000 population, the number of beds from 1.84 beds per 1000 to 2.05 beds per 1000. The biggest growth was in the number of in-patients which increased from 25 million per year to 50 million or so. The capital value of hospitals enlarged threefold.

The morbidity of infectious diseases dropped from 20 per 1000 in 1978 to 4 per 1000 in 1989. Morbidity statistics, indicate that the pattern of diseases, in order of importance, are gastrointestinal disease, followed by respiratory disease and, accidental injury. The three main causes of death, in order of importance, are coronary heart disease, cerebrovascular disease and cancer. The mortality from infectious diseases dropped from 3 per 100,000 to 1.4 per 100,000, the infant mortality declined from 47 per 1000 to 13.9 per 1000 in the cities, 23.6 per 1000 in the rural areas. The death rate was 6.5 per 1000, the life expectancy was 69.1 years in 1989 (Zhi Jun-Bo, 1989).

1.8.2 The content of changing health policies

During health reform, health policies underwent two big changes. One was the reform of the structure of health management. The other was the reform of managerial methods.

The main contents in the reform of the structure of health management as outlined in the document of the State Council were (State Council of the PRC, April 1985; State Council of the PRC, February 1989):
a. Retention of State ownership as the overall method of control, co-existing with other health systems.

b. The encouragement of a plurality of systems of ownership in the rural areas (including the private health system).

c. The control and management of the township hospital to be transferred from county health bureau to the township government.

d. Decision making in most hospitals to become the director's responsibility. The hospital director to control personnel matters and finance.

The main reforms in managerial methods were

a. To introduce a competitive market system which was called the economic responsibility system. This system had advantages in terms of specifying roles, responsibilities and benefits over simple positional responsibility, as found in the more traditional managerial approaches. Targets were set and technical and financial regulations clarified.

b. Health workers were permitted to earn extra money afterhours or to hold two or more posts concurrently, and to set up specialised outpatient clinics.

c. Charges were raised, and patients who used new equipment, or had more complex tests were charged more.

d. Free services in preventive work were allowed to continue for the most part but there were to be some charges in connection with this work. Health insurance was to be developed, for example children's immunisation insurance and mother and infant 'safe delivery' insurance.

e. Health units were to be allowed to do non-medical work in order to increase their finances (State Council of the PRC 1985,
The State Council document summarises the major changes. However examined in more detail, there are a further five major health policies which have had notable influences on Chinese health care organization during 1978-1990.

a. A report of the Ministry of Public Health concerning permission for doctors to undertake private practice was approved by the State Council on August 20, 1980. This gave legal status to private practitioners. When they had passed an examination, they would be granted a licence from the county or city bureau of public health. Those wishing to sell medicines required an additional permit from the bureau of business enterprise (MOPH, 1980). The number of private doctors increased from 50,560 in 1983 (Fu Xing-Zhi, 1986) to 157,943 in 1988 (ZGWSTJ, 1988).

b. In 1982, the Ministry of Public Health introduced the idea of a pluralistic rural health system. This allowed for a mixture of health delivery services ranging from the cooperative medical system to private practice for example collective village health stations, group village health stations and solo village health stations (Nai-Su Zhu 1989).

c. In 1985, the State Council issued document No. 62 Which was named "Some Policies of Health Work Reform". The document had eight items, which involved all aspects of health care. It stressed the relaxed policies and decentralization and set out proposals for a number of ways to collect funds for health care. For example, the fourth item was about supporting private doctors running their own businesses, the sixth item confirmed the pluralistic rural health system as a major policy to be implemented (State Council, 1985, 4).
d. In the same year the Ministry of Public Health and the State Bureau of Chinese Traditional Medicine issued the 22 item "Health Reform Digest for 1985-1990". The contents confirmed the preceding directives on health reform, and stressed that these would be carried on (MOPH, 1987).

e. The State Council issued Document No. 10 in Feb. 1989, entitled "An Opinion about Further Relaxation of Health Reform Policies". The main contents covered permission for health workers to earn extra money after-hours, the relationship between cost and quality in medical service and permission for health units to do non-medical work. The aim of the document was to relax labour policies and improve the living conditions of health workers (Yang Hong-An, 1989, 8).

1.8.3 Three health stages during health reform

1. Early in the decade, in 1978-1981, the main focus was on medical modernization. The modernising trends meant that new investment was put into urban areas to build hospitals and to buy equipment. The emphasis on "medical modernization", extended to the question of health organization. However the aim was over ambitious. Because China was still recovering from the effects of the Cultural Revolution, there were not enough investment for thoroughgoing modernization of the health care system. Towards the end of 1981, the Ministry of Public Health felt that the pace of development was too rapid. Unrealistic targets had been set, for example the ambition of eliminating some infectious diseases by 1985. At the same time the Ministry of Public Health started to initiate reform in the rural areas by beginning to implement the pluralistic rural health system. This decision confused many among
the local health administrators. They interpreted the policy as complete laissez-faire. As a result, health administrators lost their direction, and became passive rather than active in maintaining any type of health care delivery (Nai-Su Zhu, 1989). In fact, most village health stations became private enterprises. Although the modernising reforms were planned to extend to one third of counties (701 counties) chosen as model counties, in fact only 300 counties began the implementation (Qian Xin-Zhong, 1980).

2. The Period of Rectification 1981-1985: During 1981-1985, the Ministry of Public Health revised the policy which it had initiated three years earlier and suggested some new guiding principles for reforming health organization. These were aimed at the rectification of earlier reforms to slow down the pace of expansion. Contracts for some hospital buildings were cancelled because there were not enough resources to support these (Qian Xin-Zhong, 1981). In the rural areas, the remaining model counties began to implement health reform.

3. By 1985, the reform of the rural health system was basically finished. The Ministry of Public Health decided to begin health reforms in the urban areas. The main tasks were to introduce a market competitive system which means that the economic targets are set by contract in hospitals (including county and township hospitals), and to implement the responsibility system. This stressed the need to separate Party and State work, and therefore to separate the Party secretary and hospital director's work in city hospitals and institutes (Cui Yue-Li, 1985).
The health policies were all made by the central government. The process of policy-making progresses thus: The Chinese Communist Party Central Committee decides the direction, the State Council builds organizations which are in charge of various sections, then the Ministry of Public Health makes specific health policies. Normally, these policies need to be approved by the State Council or they are issued directly by the State Council to confer greater authority on them. If the general direction decided by the CCPCC is not appropriated, the health policies made by the Ministry of Public Health will automatically become unreasonable and unfeasible. The decline of the CMS which is referred to below was due to the political need to wipe out all matters associated with the Cultural Revolution completely. (see 1.12.3)(Nai-Su Zhu, 1989) The development of Chinese Traditional Medicine without consideration of its financial viability on a national scale (see Chapter 4.3)(Hu Zhao Ming, 1986) is a further example of topdown policy-making mentioned in part 1. Community participation in policy-making does not exist. This is despite the fact that China is so big that there are different situations in various areas, and consequently it is very difficult to make the right policies without advice from local government, community organisations, professional organisations and individuals. This is why the process of reform requires monitoring.

1.9 Health Reform in Hospitals

1.9.1 Problems with hospital facilities

Though initially the main focus of health reform was on the rural areas, a nationwide modernizing health strategy had supposedly been pursued since 1980. At that time, the health
resources of the whole country were insufficient to meet the needs of the population. At the end of 1983, the number of beds in hospitals was only 2.07 per 1000 population, whilst the number of patients suffering from infectious disease amounted to 15 million per year. Thus the supply of hospital beds was inadequate, and was a long queue (The State Council, 1985, 4).

The main reason for this situation was capital scarcity. The average total health expenditure of hospitals was 13 billion yuan per annum, but hospitals received only 3 billion yuan in financial support from central and local government (province and city). Hospitals were obliged to derive income from taking on contracts with factories and enterprise units or suburban governments and townships to treat their patients. However, patient charges only accounted for one third or one fourth of hospital costs. Hospitals were losing 0.95 to 1.8 billion yuan per annum (Zhi Jun-Bo, 1987, 6).

A further reason was that there were no analysis of cost effectiveness and cost-benefit in hospitals, the charges for patients were lower than the cost of treatment, and there was very serious waste of resources in hospitals. These points will be developed further in Chapter 4 and Chapter 5.

There was no standard job-description for health workers and no standard hiring quotas were set up in hospitals. In order to solve national employment problems, many health workers were taken on, but there was no corresponding increase in beds, and many workers were underemployed.

Finally, most hospital directors had lacked management experience and knowledge although they had been
installed under the 'reforms'. The administrative organizations were overstaffed and inefficient in their work. There were usually 7-10 managers (including the director and Party secretary) in hospitals (Ji Yun-Long, 1979). Non-medical staff, managers and back-up personnel accounted for 19.6 per cent of total health staff (ZGWSTJ, 1988).

The number of government owned hospitals has been decreasing. There were 60,400 hospitals in 1987, a decrease of 7 percent compared with 1978. Most of the hospitals which have closed were small township hospitals with less than 50 beds. Total beds in all hospitals increased from 1.856 million in 1978 to 2.404 million in 1987, a rise of 29.5 percent. Beds were concentrated in county or city hospitals, while rural hospitals remained overcrowded or somewhat inaccessible. When the government hospitals decreased, the number of non-government hospitals in factories, mines and other enterprises, shot up by 37.1 percent 1980-1988 (ZGWSTJ, 1988, Hillier and Xiang Zheng, 1994).

1.9.2 Reform methods in more detail

Since 1985, health reform in the urban areas has been undertaken, rural health reform was by that time nearly completed. The main urban reforms had four aspects: firstly, in government hospitals, the director of the hospital or institute bore responsibility for all major decision making. Main areas of responsibility included personnel and financial matters. The main management tool was the contract system (see definition). Using the contract system means that the local ministry of public health laid down economic targets for the hospital. Actually, a market competitive system was introduced into hospitals. If the hospital
achieved the target and made more money, it could decide on the disposal of this surplus (Cui Yue-Li, 1985).

Secondly, hospitals were able to rectify their prices (in practice, this meant raising prices). Hospitals could charge patients more when using new equipment, and price was related to quality. For example, the registration fee* to see a professor was raised to 5 yuan per time, the registration fee to see a senior doctor was 2 yuan. The hospitals could charge an inpatient admission fee of 7 yuan per day in Shanghai and Beijing. Guangdong province, one of the richest provinces can charge much more than other provinces in its hospitals.

Thirdly, the Ministry of Public Health permitted health workers to earn extra money after-hours. Health workers could work longer hours and go to county and township hospitals to treat patients (Fu Xing-Zhi, 1988).

1.9.3 The positive consequences of the health reform in hospitals

The most obvious positive consequence was the increase in the quantity of out-patients and in-patients receiving treatment by 20 percent, as a result of implementing the contract system and the economic incentives. There was a more rational and increasing use of medical equipment, for example the rate of CT usage rose by at least 400 percent. Previously, hospitals had the equipment, but it often lay idle (Ding You-He, 1983).

Next, hospital management was strengthened, and working efficiency improved. Research into hospital organization in 37

*Registration fee means patients pay for each hospital visit themselves.
counties of Hubei province was carried out. Those directors of hospitals in the 25 counties which had implemented the responsibility system thought their decision-making powers had increased. 96% of directors felt they could control the use of equipment, 88% of directors had full financial control, 72% controlled personnel matters. Prior to these reforms, such control always rested with the hospital's Party Secretary (Xiang Zheng, 1989).

Finally, hospital income was increased. In 1986, Chongqing city in Sichuan province raised the standard charge for in-patients by 0.5 yuan per day, examination fees were raised by 35 percent. The local ministry of public health increased its income by 7 million yuan in one year (Zhao Ge-Ming, 1987).

1.9.4 The negative consequences of the health reform in hospitals

1. Health service quality decreased. Because of increasing numbers of patients, hospitals could not ensure accessible health facilities and back-up services for all patients. The director of the hospital was mainly concerned with earning money for the organisation. In 1988, the bureau of public health in Tianjin investigated the quality of its health services. Compared with the results in 1984, the percentage of patients satisfied with their health service decreased from 80% to 55% in 1988 (Yan Hui-Zhong, 1989).

2. Professional quality was reduced. Unprofessional behaviour occurred amongst doctors. Because they wanted to earn extra money, they preferred to 'moonlight' at county and suburban hospitals and ignored the quality of service in their own hospital. Some doctors asked for gifts from patients, or passively
accepted the patient's gift. According to the Tianjin quality control investigation, the percentage of doctors accepting gifts increased from 20% in 1984 to 74% in 1988. By 1989 this behaviour was almost commonplace. The percentage of doctors actively requesting gifts was 10% in 1984, and increased to 21% in 1988 in Tianjin. This phenomena caused widespread criticism and impaired the doctors' reputations (Yan Hui-Zhong, 1989, Hou Lian-Sheng, 1989,7).

3. Medical expenditure by patients has increased year by year. One of the reasons was that doctors wrote out "expensive prescriptions" in order to profit from selling medicine. In Beijing Union Hospital, each prescription cost on average 5.15 yuan in 1986. In 1987, this went up to 7.23 yuan, and 9.67 yuan in 1988. The in-patient fee was, on average, 637.65 yuan per patient in 1986, 757.75 yuan per patient in 1987, 931.52 yuan per patient in 1988 (Zhi Jun-Bo, 1988). According to a sample survey of China's hospitals, unreasonable 'expensive prescriptions' accounted for 2 percent of all prescriptions. An unofficial estimate suggests the figure maybe 10fold higher. Similarly, the figure for unnecessary tests had reached 20% (Huang Zhe-Min, 1989).

So the competitive system brought economic vigour to hospitals, but at the same time, the quality of services decreased. Therefore there is a conflict of objectives between implementing a competitive system in hospitals whilst trying to retain the social benefits of health services, especially in developing countries characterised by a scarcity of health resources.

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1.10 The State of Health Finances

1.10.1 Scarcity of government health investment

Chinese health care is seen as an aspect of social welfare. Thus patient charges were set below the cost of health services. Since 1949, medical fees have been reduced 3 times, and the proportion of medical cost covered by patient charges has become less and less. According to the Ministry of Finance, which calculates the balance of income and cost in all medical units, the financial deficit was 0.95 billion yuan in 1984 (Fu Xing-Zhi, 1987). How did the Ministry of Public Health make up the deficit? The Ministry of Public Health wanted the government to increase health investment. After 1978, when health investment stood at 2.02% of government expenditure, the government increased health investment to 2.49% in 1980, and 2.97% in 1985. In capital construction costs, the proportion for health investment increased from 0.64% in 1978, 1.44% in 1980 and 1.68% in 1985 (ZGWSTJ, 1988).

After 1985 however, government health investment decreased because of economic problems in China. Health investment was 6.428 billion yuan, accounted for 2.79% of government financial expenditure in 1986, and decreased to 5.946 billion yuan in 1987, 2.45% of government financial expenditure (ZGWSTJ, 1988). This was less than the investment in education and was far from the 5% standard of GNP which was recommended by WHO (Zhi Jun-Bo, 1987,6). According to the final accounts, the total financial subsidy accounted for one third of health expenditure in 1984, and was reduced to one fifth in 1989. The remaining health costs had to be found by the health work unit itself. An analysis
of salaries showed that the salary of health workers was in fifth position out of 13 professions in 1982, but it had fallen to tenth position by 1987. The salary of a health worker was 36 yuan less than the national average for all equivalent workers (Huang Zhe-Min, 1989).

1.10.2 Three options to solve this problem

In view of this situation, how should China develop its health care? There are three options. Option one, the government could increase health investment and continue to be responsible for all aspects of health care. Option two, the government could give some financial aid, whilst patient charges could be increased. The proportion of free services should reduce in order to save the balance of costs no longer received from the government. Option three, the health work units could become independent and set their own charges or implement privatisation. Under the current conditions, option one is too difficult for the government to undertake. Option three is too expensive for the patients. Option two conforms to reality better (Zhi Jun-Bo, 1987, 3). It formed the background to the 62nd document in 1985, and the 10th document in 1989 which were issued by the State Council. The main points concentrated on two forms of payment by patients, to increase standard charges for patients and to reduce the proportion of free services without changing the characteristic of health care.

1.10.3 The uneven allocation of health investment

There appeared to be an uneven allocation of health investment between rural and urban areas. In other words, the
reforms themselves did nothing to improve the imbalance. Urban expenditure is estimated in excess of 80 yuan per capita, more than triple the rural expenditure. Also striking are the patterns of public expenditure on health. State subsidies for health in urban areas exceed by a factor of almost ten those for rural areas, approximately 70 yuan per capita compared to less than 7 yuan per capita. Private expenditures per capita amount to less than 6 yuan in urban areas but over 10 yuan in rural areas (Jamison, 1985). As of 1988 most urban workers continued to pay only a fraction of their medical bills, while the majority of rural residents continued to bear almost the full cost themselves. Moreover, urban residents still have better access to hospitals and specialty clinics than rural residents (Beijing Review, 1988).

1.11 Health Personnel

After 1949, the numbers of health personnel grew very rapidly, reaching 4,313,011 persons by the end of 1985, compared with 540,000 persons in 1949, an almost 7-fold increase (Li Man-Chun, 1988). In 1949, there were 15,234 undergraduate students in medical and pharmacy colleges. By 1988, the number of medical undergraduate students had reached by 191,527, an 12.5-fold of 1949 (ZGWSTJ, 1988).

1.11.1 The structure of health personnel

There is a shortage of middle level professional staff. In 1988, the proportion of high level professional staff who graduated from medical university and college was 25.9%; middle level professional staff who graduated from middle medical school (nurse, midwife), 47.8%; primary health worker (assistant
nurse), 26.3%. But the standard proportion of health personnel was 1:3:1 (high:middle:primary). It was obvious that the proportion of middle level professional staff was too low (Zhu Ao-rong, 1988,10). In 1987, there were 0.6 million nurses in China. But nurses were only working above county hospital level. There were no nurses in primary health organizations. If nurses were to be allocated to all hospitals on the basis of standard proportion, there would be a shortfall of at least 1 million nurses in China (Cui Yue-Li, 1987).

There is no continuous education system. Most doctors do not get the opportunity to further their studies after graduation. There were very few advanced medical schools in China (Li Man-Chun, 1988).

1.11.2 The uneven distribution of health personnel

The geographical distribution of health personnel is uneven. In 1988, there are 7.69 per thousand health personnel in the urban areas, 2.12 per thousand in the rural areas. The number of senior doctors was 3.25 per thousand in the urban areas, 0.84 per thousand in the rural areas (ZGWSTJ 1988). In addition, there was an obvious gap between rich areas and remote areas and those on the borders or inhabited by national minority. Coastal areas were generally better served than those inland.

There is a lack of co-ordination of medical education planning between medical professional staffs and health administrators. Whilst most health administrators are professional staff who have graduated from medical universities and colleges, they lack a knowledge of health management. In Yunnan province, for example only 1.92% of health administrators had ever studied
There is a lack of coordination in hospitals between medical staffs, public health and MCH workers. For example, in Shandong province, the number of clinic practitioners accounted for 65% of all medical professionals, the number of preventive health workers only accounted for 8%. In Jilin province, the MCH workers accounted for 3% of all health workers (Dong Hui-Jun, 1989).

These problems had developed because of the following:
1. The training of health personnel is divorced from practice. Three different government departments are involved. Health personnel planning is done by the Health Department, training is carried out by the Education Department, allocation of health personnel is made by a Central and Local Planning Committee. The three departments are independent of each other and lack coordination.
2. The teaching institutions are dependent only on the Ministry of Education. Their only concern is student throughput. They do not need to consider health service needs.
3. There were strong pressures to achieve higher status for the non-elite. As a result, many good middle medical schools became universities and colleges during health reform. This aggravated the poor-coordination of health personnel planning.
4. There was no policy about training health personnel for the rural areas. The higher medical school did not train the students which the rural areas needed.
5. There was a shortage of educational investment (Da Lian Conference, 1989,11).
Looking at the last section concerning the allocation of health investment and this section, the same phenomenon can be observed. This is the inequity in utilisation of health resources between urban areas and rural areas. The urban residents enjoy better access to health services than those of rural areas. This imbalance has become a serious obstacle in the development of rural health care.

1.12 Primary Health Care Change in the Rural Areas

1.12.1 The decline of the CMS

During health reform, Chinese rural health care developed more slowly than urban health care. The number of hospitals above county level increased from 8,000 to 12,000, a 50% increase between in 1978-1989. But the number of township hospitals decreased by 14.2% from 55,000 to 47,000. The number of beds increased in city hospitals by 57.4% (1.127 million beds). In township hospitals, it decreased by 3.3% from 0.747 million to 0.723 million. Therefore, one effect of the reform was to lessen hospital resources in the countryside. However, the most important change was the disintegration of the Cooperative Medical System (ZGWSTJ, 1988).

At the end of 1978, as health reform was beginning, the CMS covered 82% of villages in China. The three tier primary health networks were in place. Following the third plenary session of the 11th Party Central Committee in 1978, new policies were designed to stimulate the economy and overcome the low levels of productivity in industry and agriculture, particularly the latter. These policies were a hybrid attempt to combine socialist planning with a competitive market system. Collective agriculture, based on
the team and commune system was abolished. Instead, individual household production of grain and a diversification of rural enterprises was encouraged. This effectively ended collective projects. The changes in rural economic structure made it difficult for collective financial and popular support for the CMS to continue (Ding You-He, 1980,7).

In 1979, the Ministry of Public Health's policy for the rural areas was to continue to insist on the CMS as the basic funding form. In line with the ideology of modernisation, which also accompanied the reforms, however, it was emphasised that the professional level of barefoot doctor's (BFD) needed to be improved, by rotational training of BFD. A new and important objective was approved which differed from previous policies. This was to strengthen the health work units at county level e.g. the county hospital, epidemic station, MCH. This was a further example of 'modernizing' in health policy (Qian Xin-Zhong, 1979). During the period 1979-1980, the CMS began to diminish and coverage was reduced to 67% villages (ZGWSTJ, 1987).

Throughout 1980, the Ministry of Public Health maintained a consistent policy towards the CMS and continued to stress a steady improvement of the BFD standards of practice. But the Ministry of Public Health did not stress a standard nationwide proportion of recompense for patients in the CMS. Villages could make the standard of recompense to whatever suited their financial resources. Before 1980, the higher the standard of recompense was, the better the CMS was (Qian Xin-Zhong, 1980). The CMS coverage now was down to 65% or so of villages (ZGWETJ, 1987).

In 1981, because of the effects of rural economic
reform, the Ministry of Public Health began to consider how to develop Chinese rural health care in the new economic climate. The Ministry of Public Health agreed that a village which had good economic conditions should retain the CMS, but if the village was poor, it could charge patients and need not implement the CMS. It was the first time that the Ministry of Public Health had given permission to charge patients, actually, it gave the 'green light' to the implementation of privatisation in rural health care. This marked a turning point in rural health policy. An important change accompanying it was that the BFD could obtain a rural doctor's license and bear the title 'rural doctor' if he or she passed an examination. Otherwise the BFD was now known as 'rural health worker' (Qian Xin-Zhong, 1981). In the 1981, the CMS still covered about 60% of villages. There had been only a slight decrease (ZGWSTJ, 1987).

In 1982-1983, the Ministry of Public Health began to bow to those political pressures which wanted to remove all forms of collective provision. The Ministry of Public Health thought that a high level of recompense to CMS users was good regardless of the actual economic conditions of the village and peasants. It was the first time the MOPH criticized the slogan 'the higher the standard of recompense was, the better the CMS was'. In 1982, the Ministry of Public Health made an informal confirmation of the pluralistic rural health system (Luo Yi-Qun, 1983). Then in 1983, the CCPCC issued the first document which encouraged the implementation of the responsibility and contract system in agriculture, industrial enterprises and business. Whilst the document recognised that cultural and health enterprises continued to retain government and
collective forms of management, they too were encouraged to give more responsibility to individual enterprise managers (CCPCC, 1983). This document emanating from the CCPCC gave the Ministry of Public Health confidence to implement the responsibility and contract system in the management of health organization in rural areas. After that, the Ministry of Public Health confirmed officially a pluralistic rural health system. It said "A pluralistic rural health system was superior to the CMS which was a single rural health system. We should confirm and encourage the way" (Wang Wei, 1983). As a consequence the CMS went into a sharp decline with coverage reduced to 9% of villages in 1983 (ZGWSTJ, 1987).

In 1985, the State Council issued document 62, item 6 of which reconfirmed the necessity of a pluralistic rural health system. Then the Ministry of Public Health decided officially to change the name of Barefoot Doctor into Rural Doctor. The BFD was created in the Cultural Revolution by Zhang Chun-Qiao, one of the discredited Gang of Four, who put forward the name at the beginning of the Cultural Revolution. But it was to be regarded as an outdated title from now on (Chen Min-Zhang, 1985,1). The BFD's time had passed (Luo Yi-Qun, 1985).

In 1986, the CMS decreased to 5.4%. As of 1988, the CMS covered 5.7% of villages, and had changed its form to allow pluralistic sources of payment. It received its money from per capita payments and also received a subsidy from the collective fund, the taxation of rural industrial enterprises and funds from the regional health budget (Luo Yi-Qun, 1987,10; ZGWSTJ, 1988; Hillier and Xiang Z 1990,2).
During 1978–1986, the numbers of BFD decreased. 0.37 million barefoot doctors, midwives and rural medical workers left their jobs. During the same period when every component of the rural nonagricultural sector was gaining employees, the numbers working in health actually declined (Taylor, 1988).

1.12.2 Consequences of the decline of the CMS

First of all, the breakdown of the CMS produced a serious impact on all primary health care activities, such as, mass mobilization for the Public Health Campaigns, eradication of schistosomiasis by eliminating snails, providing basic maternal and child health care (Chen-PC, 1983).

Second, the decline of the CMS also increased the financial burden of illness borne by the peasants. Stays in hospital were to become a heavy burden for patients. The high cost may have prevented some patients from seeking necessary treatment (Henderson, 1982).

Third, these changes have had a major impact on the continuing education of barefoot doctors or rural doctors. In 1978, the cost of barefoot doctors' education and their salary during training was generally financed by the CMS. After its decline, even though many barefoot doctors can now earn a living on a fee-for-service basis, the means of upgrading their skills is impaired, and the quality of preventive and curative services may suffer (Liu YC, 1983).

Fourth, preventive medicine is affected by the decline of the CMS. Without the CMS, emphasis on preventive programs has decreased, because they are not as profitable on a fee-for-service basis as medical treatment, even though they may be more cost-
beneficial to the township (McClargey-M, 1989). For example, according to an investigation in 12 townships of Dezhou, Shandong province which reported cases of poliomyelitis, each township had only one preventive health worker, 75% of rural doctors had incomes which were less than those of peasants. So rural doctors did not want to do preventive work. As a result, some children were not inoculated and suffered from poliomyelitis. In January-July, 1988, there were 209 poliomyelitis cases in China, but during the same period in 1989, these cases increased to 525. One of the aims of preventive health work is to eliminate poliomyelitis in China by 1995. Without solving the inoculation problem in the rural areas, this aim will be very difficult to achieve (Zheng Ling-Qiao, 1989,9).

1.12.3 The causes of the decline of the CMS

A number of factors are responsible, and these are discussed below.

1. The decline was clearly influenced by political factors. The CMS developed rapidly during the Cultural Revolution (1966-1976). The Gang of Four once labeled it as "newborn thing" produced by that political campaign. Now that period of history is commonly regarded as a disaster. The CMS was considered by some to have been a product of the Cultural Revolution, and therefore they thought that it should be dismantled. Subsequently the changes in health policy speeded up the decline (Nai-Su Zhu, 1989).

2. The decline was caused by lack of availability of collective funds. The changes of rural economic structure induced major changes in the funding of the Cooperative Medical System. As a result of the responsibility system, peasants' income increased.
With the change from collective to individual production, the village welfare funds disappeared, because the villages no longer administered any collective revenue from the sale of their village produce. The village administrators were unable to pay the barefoot doctors' salaries. Therefore, many transferred the responsibility system of agriculture into health work. The village committee made a contract with the BFDs to run the clinic or the BFDs carried out their own business. This meant that the BFDs became in effect private doctors and the village health stations were run as private enterprise (Luo Yi-Qun, 1983).

3. The decline was caused by increasing demands for a better quality of health services. The peasants' income increased and they demanded a better quality of health services. They were willing to pay for services at the township hospital or the county hospital (Hsiao, 1984).

4. The decline of the CMS can also be attributed to the low quality of the BFDs. The usefulness of barefoot doctors was strictly limited to an early period in the development of health services in a poor rural community, when preventable disease caused a major part of morbidity. Prevention then was, from the technical point of view, a fairly simple task. The method of training BFDs was to give them a short-term initial training, then rotate them over a longer period. This took a lot of time, and was ineffective. It proved very difficult to improve the BFD's professional level to that of a middle level doctor. One health planning objective which has been suggested is to directly train middle and high school students for two to three years. These students could replace the low quality BFD (Luo Yi-Qun, 1985, 3).
Training could be geared to producing a more 'all-round' community health worker, who retains local contacts, and possesses organisational, as well as clinical skills.

1.13 Summary of Part Two

1.13.1 Health reform produced positive consequences in Chinese health care

Chinese health care has been affected by health reform. By and large the main changes were a relaxation of previously rigid policies and an extension of various ways of developing health care, for example, the Ministry of Public Health permitted doctors who worked in the national hospitals to make extra money after-hours. A market competitive model which is the economic responsibility system has been implemented in the Chinese health care market, and this has brought economic vigour to hospitals. In the urban areas, decision making in government hospitals, became the directors responsibility. The Ministry of Public Health rectified the price standard and encouraged self-sufficiency in urban hospitals. Health work units devised various ways of collecting funds to overcome the shortage of national investment.

1.13.2 The main problems in Chinese health care

1. The main disadvantages of health reform were that the urban areas received more benefit from health reform. Unequal distribution of health resources brought rural health care into a position of difficulty (Shu-Min Huang, 1988).

2. The CMS declined. Rural doctors and health workers replaced the barefoot doctors, with one important difference, that is, a majority of them were private doctors. Therefore only a
small minority of peasants can now rely on a collective health insurance plan to defray the cost of hospital care, and thus a majority are at risk of financial disaster if any member falls seriously ill. Privatisation of health care restricted rural residents' utilisation of health services (Davis, 1989).

3. Health policies which were made during health reform were lacking in operational detail, and some were unfeasible. For example, having to implement a plurality of systems in rural areas confused the local health administrators, because the process of policy-making lacked any community participation and was affected by political factors.

In China, 80% of the population live in the rural areas. Therefore rural health care should be the most important aspect of health work and the object of careful planning. How is it to be strengthened? How are the consequences of the reform in rural health care to be evaluated? What health system is the most suitable for rural health care? What problems in rural health care lie in the future? Specific research work is necessary to reply to these questions, and below, in the following chapters, an attempt will be made to reach answers.
Chapter 2. DESCRIPTION OF THE INVESTIGATION PROCESS

2.1 Research Contents

1. Principles of selection:
   a. A consideration of the county, township, village and the three tiers.
   b. Research subjects include administrators, providers and the consumers, i.e. leaders at various levels, doctors and rural residents.
   c. The changes in the rural three tier health network following health reform.
   d. An examination of the changes from the point of view of individual, finance and property.
   e. Two approaches are used, i.e. historical and current.

2. The main research contents
   a. For all three levels
      To investigate the basic health conditions of rural residents; their health service need and utilization, the factors which have influenced health service need and utilization by rural residents after health reform; an evaluation by rural residents of the health service.
   b. County level
      i. To investigate the function and effect of county health organization.
      ii. To investigate the influence of health reform on the health service and financial conditions of the county hospital.
      iii. To study the status and functions of the Chinese traditional medicine hospital.
iv. To investigate the influence of health reform on the county health school.

c. Township level

To investigate the basic health service, financial status, and health personnel in the township hospital; to compare reformed and unreformed township hospitals.

d. Village level

i. To investigate and compare efficiency and equity issues among a variety of health delivery models including the CMS, private practitioners and group practices.

ii. To investigate the attitudes of rural doctors, village leaders and rural residents towards the development of village health care.

2.2 Research Site, Subjects and Chronology

1. Places and subjects

The investigation took place in the East-China Region, which includes three provinces: Jiangxi, Zhejiang and Shandong. Most of the research was carried out in Jiangxi province in 1989. But there was a supplementary investigation in four counties in 1990 which concentrated on county level health organisation. One was in Zhejiang (it was also investigated in 1989), another in Shandong, the remaining two in Jiangxi (they are two of the seven counties which were investigated in 1989). In these four counties, there were four county hospitals and three county health schools. The purposes of supplementary investigation were: a. to understand further the financial conditions of county hospitals since these are the most important health organisations
at county level; b. to understand the influence of health reform on the county health school which is the base for training rural health personnel. Places and subjects are shown in Table 2.1 and Table 2.2.

Table 2.1 Investigative places in 1989-1990

<table>
<thead>
<tr>
<th>Provinces</th>
<th>County</th>
<th>Township*</th>
<th>Village*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jiangxi</td>
<td>7</td>
<td>9</td>
<td>21</td>
</tr>
<tr>
<td>Zhengjiang</td>
<td>1</td>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>Shandong</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>9</td>
<td>12</td>
<td>30</td>
</tr>
</tbody>
</table>

*Townships and villages were selected in four counties from Jiangxi and Zhejiang in 1989.

Table 2.2 Number of investigative subjects

<table>
<thead>
<tr>
<th>Subjects</th>
<th>1989</th>
<th>1990</th>
</tr>
</thead>
<tbody>
<tr>
<td>Households</td>
<td>725</td>
<td>0</td>
</tr>
<tr>
<td>Rural residents</td>
<td>3493</td>
<td>0</td>
</tr>
<tr>
<td>Inpatients</td>
<td>482</td>
<td>0</td>
</tr>
<tr>
<td>County leaders</td>
<td>17</td>
<td>0</td>
</tr>
<tr>
<td>County hospitals</td>
<td>7</td>
<td>4</td>
</tr>
<tr>
<td>County Chinese traditional hospitals</td>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td>County health schools</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Township leaders</td>
<td>20</td>
<td>0</td>
</tr>
<tr>
<td>Township hospital doctors</td>
<td>162</td>
<td>0</td>
</tr>
<tr>
<td>Township hospitals</td>
<td>12</td>
<td>0</td>
</tr>
<tr>
<td>Rural doctors in village health stations</td>
<td>44</td>
<td>0</td>
</tr>
<tr>
<td>Village leaders</td>
<td>59</td>
<td>0</td>
</tr>
<tr>
<td>Village health stations</td>
<td>21</td>
<td>0</td>
</tr>
</tbody>
</table>
2. Research data utilized in the thesis

Chapter 3: the data concerning health services for rural residents were from three counties in Jiangxi, and one county in Zhejiang in 1989.

Chapter 4: the data concerning health care at county level were from seven counties in Jiangxi in 1989 and four counties in Jiangxi, Zhejiang and Shandong in 1990.

Chapter 5: the data concerning township hospitals were from nine townships in three counties of Jiangxi and three townships in one county of Zhejiang in 1989.

Chapter 6: the data concerning health care at village level were from 21 villages in Jiangxi in 1989.

2.3 Research Methods and Steps

1. Basic research method

This study was designed to analyze current health delivery models by a structure-process-outcome approach (Jay L. Lebow, 1974). This approach is multi-disciplinary and involves using ideas and concepts from health management, health economics, statistics epidemiology and health policy.

a. Basic data were recorded by using the research form at the worksite (see appendix).

b. The questionnaire survey of attitudes and intentions. Rural residents were surveyed by visiting their families. The head of the household answered the questions, the investigator filled out the questionnaire. In the survey of rural leaders and doctors, they filled out the questionnaire themselves. The investigator explained the questionnaires, collected and checked them at the worksite.
There were no refusals and no survey forms were returned incomplete.

2. Selection and sampling

   a. All counties in China have been classified by the State Bureau of Social Statistics into three categories, according to their average annual per capita income in 1984 (SBSSC, 1985). These counties were considered according to their economic level (high, middle and low income).

   b. After that, the townships and villages to be studied were selected using cluster sampling. Once a county, township and village had been chosen, the county hospital, the county Chinese traditional medicine hospital, the township hospital and the village health station were included as respondents.

   C. Households and Inpatients were selected using a simple random sampling technique.

      We chose the households in two stages. As mentioned above, firstly, we used cluster sampling to choose 30 villages from the townships and counties which have been selected. Secondly, we used a simple random sampling to choose households which are the basic unit for investigation. a. We obtained a list of the head of household ID number from each village committee. b. Each ID number was divided by 15. This number is determined according to an amount of households which we are able to do. Then we obtained the remainder of 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14 which cannot be divided. The same number of households would be put in one group. We chose one group from 15 groups for investigation.
Inpatients were selected from 7 county hospitals (average 70 inpatients per hospital). We chose inpatients by a systematic sampling method. We went to patient's file office of the department of inpatient and chose inpatient from medical unit, surgical unit, gyneuological unit and pediatric unit (each unit inpatient accounts for 25%). We followed the file order choosing one each 20th file until we obtained an appropriate number of patients.

Because of the limitation of time and researchers, the townships, the villages and household were selected from three counties in Jiangxi and one county in Zhejiang in 1989. By means of these sampling procedures, 15% of the townships, 4% of the villages of the four counties were selected, 6% of the households were selected from the villages which were investigated. The research method and steps in 1990 were same as those in 1989.

2.4 The Data Sources
1. Basic data sources
   b. Health statistical yearbook of the county health bureau.
   c. The bureau of county social statistics.
   d. The financial bureau of the county
   e. The yearly report of the county hospital and county Chinese traditional hospital.
   f. The yearly report of the county health school.
   g. The financial department of township government.
   h. The yearly report of the township hospital.
2. A note on bias in the collection of secondary data.

   a. The researcher went to the government department and collected the secondary data himself. The data has collected from available statistical materials and annual reports directly, not by verbal collection to prevent reporting bias.

   b. We would choose some secondary data to check with original data again. These secondary data have been collected, for example the distribution of health personnel in township hospitals (quantity, age, education etc.), we have got the data from the County health bureau, but we would go to some township hospitals to check again in case of an information bias.

   c. We made the investigative list and items before the researcher set about collecting the secondary data. The researcher had to follow the list in collecting the data to remove the risk of interviewer bias. This method was also used for collecting primary data.

   Generally speaking, the collection of secondary data has avoided sources of bias and procedures have been implemented to guarantee the validity and reliability of the data.

3. There are 14 investigative forms and questionnaires for special contents investigation (for more details see appendix).

2.5 Statistical Methods and Software

   1. The data were input by using IBM PC computer with DBASE III Plus.

   2. The statistics of the data uses ELONEX PC 386S-200 computer with SPSS/PC+ VERSION 3.1.
3. The figures were drawn by using ELONEX PC 386S-200 computer with Harvard Graphics (Version 2.10).

4. Word processor uses the ATARI computer with 1ST WORD.

2.6 Quality Control in the Research

1. Before collecting data, make clear each index; after recording the index, check and gather in time; find out any missing data or wrong data, supply and correct them at once.

2. The data were from original records of various governmental departments, in addition to those collected from the questionnaires.

3. Design the questionnaire using simple questions putting the sensitive questions towards the end of the questionnaire.

4. Before the leaders and doctors filled out the questionnaire themselves, the investigator explained each question for them.

5. The questionnaire survey of village households was anonymous. The researcher explained each question to the respondents.

6. Interviews were no longer than 30 minutes.

7. All of the researchers who administered the survey were students of Shanghai Medical University under supervision. They had been carefully trained.

8. Random sampling procedures have been used.
2.7 The Main Investigative Site--An Introduction to Jiangxi Province

2.7.1 Geography

Jiangxi is located at the middle to lower reaches and the south bank of the Yangtze River in China. The longest distance from south to north is 625 kilometers; from east to west, 490 kilometers. Total area is 166,000 square kilometers, which accounts for 1.7% of whole country area. It occupies the eighteenth position among provinces as regards size. Mountain and hilly areas account for 78% of the land area in the province; low land, 12%; land, 10% (Ma Chen Xian, 1989).

2.7.2 Population

In 1988, Jiangxi had 77 counties, the population was 35.58 million, 3.3% of China's total population (CHSD, 1988). According to the fourth census in 1990, the literacy rate was 16.22%, and Jiangxi occupied the eighteenth position out of 30 provinces. The literacy rate was 24.67% in the rural areas; 12.17%, in the urban areas (People's Daily, 1990). The mortality rate was 6.07/1000 (the rural areas, 6.5/1000; the urban areas, 5.0/1000) in 1982. The infant mortality rate was 47.72/1000 (the rural areas, 54.2/1000; the urban areas, 17.12/1000) in 1982 (Ma Chen Xian, 1989).

2.7.3 Economy

The economic level of Jiangxi is that of the middle level in China. In 1985, the gross national product was 26.45 billion Chinese yuan, 1.6% of China as a whole. The economic base...
has changed from simple agricultural production to a combination of industrial and agricultural production (Table 2.3; Chinese Statistical Yearbook, 1986).

Table 2.3 The national product and income in Jiangxi province (Billion Chinese Yuan)

<table>
<thead>
<tr>
<th>Items</th>
<th>1952</th>
<th>1965</th>
<th>1983</th>
<th>1985</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industrial production</td>
<td>0.582</td>
<td>2.260</td>
<td>10.607</td>
<td>15.061</td>
</tr>
<tr>
<td>Agricultural production</td>
<td>1.542</td>
<td>2.339</td>
<td>8.940</td>
<td>11.390</td>
</tr>
<tr>
<td>National income</td>
<td>1.710</td>
<td>3.819</td>
<td>12.497</td>
<td>17.300</td>
</tr>
</tbody>
</table>

2.7.4 Medical Care

Since 1949, health care in Jiangxi province has developed well. The number of health organizations (including health bureaux, hospitals, epidemic stations) was 94 in 1949. This has increased to 5,373 in 1980 and 5,583 in 1988. Health personnel increased from 2,800 in 1949 to 79,000 in 1980, and 138,238 in 1988. Hospital beds also increased from 1,900 in 1949 to 76,900 in 1980, 90,151 in 1988. The average female life-expectancy was 69.54, that of males 66.79 (ZGWSTJ, 1988).
2.7.5 Maps Relevant to the Study

1. The map of China

1. JiangXi Province
2. ZheJiang Province
3. ShanDong Province
2. The map of JiangXi

1. TongGu  2. ShangGao  3. FenYi
7. LeAn
CHAPTER 3 HEALTH SERVICES FOR RURAL RESIDENTS FOLLOWING HEALTH REFORM

China is the biggest agricultural country in the world. Those who live in rural areas account for 80% of the total population in China. Therefore the health service provided for rural residents holds a central position in Chinese health work. With the change in the rural economic system, the rural health system has implemented a parallel series of changes. Now a plurality of health systems have replaced the CMS, and the economic responsibility system has been applied to the staffs of county and township hospitals. These changes are bound to influence health service availability and the utilisation patterns of rural residents. To establish to what extent the reforms have had an effect, and to understand how matters might be improved, an investigation was carried out in parts of Jiangxi and Zhejiang's rural areas. The purpose of this chapter is to study the needs and the options of rural residents within the three tier health organisation after health reform and to analyse what factors related to the reforms have affected the health services. The chapter begins with background description of the county, township and village and their three tier rural health networks.

The survey began in March, 1989, in 3 counties in Jiangxi province, Fenxi, Shanggao and Tonggu, and Shen county in Zhejiang province. There were in total 12 townships, 30 villages, 725 households and 3,494 rural residents to be investigated (24 households were chosen by random sample in each village, which accounted for 6% of the total number of households). First, the
questionnaire was designed and piloted, then households were visited and the head of the household (defined here as the person in the family who makes the important decisions, which in China is usually the oldest married male) was interviewed with a structured questionnaire schedule (see Appendix). The main topics of investigation were the age; the sex and the education level of head of household; the number in the family; the diseases from which each member had suffered and the number of times of seeking medical help in two weeks; the total annual medical expenditure and income for each family.

3.1 General Remarks Concerning Rural Health Services and Rural Residents

Estimating the need for health services is a useful method to evaluate the effects and the social benefits of a health service. This is done by studying the health conditions and health need of rural residents and by analysing both satisfactory standards, and factors influencing health services for rural residents.

3.1.1 Basic condition of rural residents

We questioned the heads of 725 households to obtain data on the whole family. The average population was 4.8 per household. The average gross income was 3089.7 yuan the household in 1988. An average age of 725 heads of household was 42.6 years old. Among them, 632 were peasants, which accounted for 87.2%. The rest were individual businessmen, rural cadres and rural industrial workers (Figure 3.1). Individual businessmen were those rural residents who went in for commodity buying and
selling. They did not work in the fields. Some rural cadres were government permanent employees with salaries from the government. These included township government staffs even if they lived in the rural areas. By contrast the cadres who worked in villages received only a subsidy from the village collective fund or the township government. They were not permanent government employees. The rural industrial workers means those rural residents working in a township or village factory. They did part time field work in the busy season.

As for educational level: 175 heads of household were illiterate; 319, primary school; 167, middle school; the remainder, high school. This range was similar to that shown in the ten provinces rural health service study (MOPH, 1986, Figure 3.2).
Type of medical practice used: 556 households used individual private doctors' services and paid fee-for-service. 88 households used the group village health stations services, which was composed of three or four private doctors. Therefore these households were also using private doctors services (see Definition). This meant that 88.8% of all households were paying for their own medical care. On the other hand, 42 households (5.7%) were still covered by the CMS. The remaining 39 (5.4%) were covered by health insurance from their rural factories. The majority of peasants transferred from the CMS to the self-financing medical system during health reform, which shows a changing village picture, both as regards the health stations and the rural doctors. In other words, most village health stations became the private enterprises. The rural doctor was replaced by private doctor (see below).
3.1.2 Health services need and utilisation

There was a total of 3493 people in 725 households. The two-week morbidity rate was 97/1000. The prevalence of chronic disease was 75/1000. The rate of days spent sick in bed over two weeks was 100.2/1000. The average number of days in bed per person was 2.6 in 1988. These rates were lower than those shown in the "seven countries and 12 places study" (Table 3.1). This study was carried out by WHO from 1964-1974 in the USA, Canada, UK, Argentina, Finland, Poland and Yugoslavia. The total population sample was 0.56 million. The international data concerning health service need and utilisation are helpful as a comparison.

Table 3.1 Comparison of the health service need and utilisation between the Chinese rural areas and 7 countries and 12 places

<table>
<thead>
<tr>
<th>Items</th>
<th>725 households in 4 counties</th>
<th>*10 provinces in China</th>
<th>** 7 countries and 12 places</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chronic disease prevalence rate (per thousand)</td>
<td>75</td>
<td>86</td>
<td>93</td>
</tr>
<tr>
<td>Days in bed (one person/year)</td>
<td>2.6</td>
<td>2.4</td>
<td>7.1</td>
</tr>
<tr>
<td>Attendance at clinic (one person/year)</td>
<td>2.3</td>
<td>2.6</td>
<td>6.0</td>
</tr>
<tr>
<td>Attendance at clinic per thousand population within a fortnight</td>
<td>87</td>
<td>97</td>
<td>155</td>
</tr>
<tr>
<td>Annual hospital admission rate/1000</td>
<td>47</td>
<td>32</td>
<td>110</td>
</tr>
</tbody>
</table>

*Data from The Ministry of Public Health PRC "National Rural Health Service Investigation Materials", December 1986, the Department of Administration, WeishengBu, Beijing.

It should be pointed out that the comparative data rendered by the '7 countries and 12 places' study and China were gathered on using the same design and method, ie, stratified random sampling. In other respects, the two studies are not comparable. The Chinese investigations were carried out later, and in a population with different characteristics. 60.5% of the WHO survey were in the urban areas, 39.5% in the rural areas; in China, the whole sample was of rural residents. This might have influenced the higher WHO figures: Urban populations may be more likely to recognise and name certain diseases, and seek treatment for them. There are also more doctors from whom they can seek treatment. As a result, the reported prevalence rate of urban inhabitants is likely to be higher than that of the rural inhabitants. However this does not completely invalidate the comparison. It is interesting to note that, although the number of days confined to bed was lower in the Chinese example, the chronic disease prevalence rate was approaching that of the WHO study. It is not unfair to suggest therefore, that this is likely to be, accurate, or even an underestimate. The Chinese data are likely to underreport more minor conditions for reasons described above.

Health service utilisation, the number of physician visits per person per year and annual hospital admission per thousand in Chinese rural areas were lower than the WHO study (Table 3.1). This suggests that the health service utilisation in Chinese rural areas was not as high as in 7 countries and 12 places studied by WHO, especially in patient admissions.
When making comparisons within China, between this study and the MOPH data, utilisation rates did not differ so much. In this study, outpatient rates were lower, and inpatient rates higher than in the MOPH study.

3.2 Analysis of the Factors Which Influenced the Need for Health Services and Their Utilisation by Rural Residents

Many factors can influence the need for health service and utilisation, such as social economy, culture, occupation, medical health system, age, sex, individual behaviour and lifestyle, the distribution of health care, service time, distance to hospital, traffic condition and medical service quantity and quality. It is argued here, however, that the most important fact that may have influenced need and utilisation in this case is the collapse of the CMS in rural areas after health reform, since peasants now pay directly for health care. In order to consider the matter, below five factors are analysed in more detail. These are the health care system available, family type and source of income, family population, education of head of households and age of population.

3.2.1 Health care system

There were 3,493 people in 725 households. Among them, 163 (4.7%) people were covered by the CMS, but the great majority (89.3%) were paying for their own health care. This proportion is typical of rural residents in China today. If we compare health need and utilisation for rural residents under the various medical systems, we can see that those covered by the CMS had higher rates of reported illness (4.9) in 1988 than those who were paying for
themselves (2.4, solo; 2.3, group, Table 3.2). After health reform, joining the CMS was on a voluntary basis. Therefore the older people, children and sick people who needed more health services preferred the CMS. This would also explain why the prevalence rate of the CMS group was higher than the others. This will be discussed further in chapter 6.4.2.

Table 3.2 Comparison of the health service need and utilisation for rural residents under various medical systems

<table>
<thead>
<tr>
<th>Items</th>
<th>Self-finance (solo)</th>
<th>Self-finance (group)</th>
<th>CMS</th>
<th>Other</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The Population in investigation</td>
<td>2618</td>
<td>515</td>
<td>163</td>
<td>197</td>
<td>3493</td>
</tr>
<tr>
<td>2. The times peasants suffered diseases in two weeks</td>
<td>243</td>
<td>45</td>
<td>31</td>
<td>19</td>
<td>338</td>
</tr>
<tr>
<td>#3. The times one peasant suffered from disease one year</td>
<td>2.4</td>
<td>2.3</td>
<td>4.9</td>
<td>2.5</td>
<td>2.5</td>
</tr>
<tr>
<td>4. The number of peasants visiting doctor in two weeks</td>
<td>222</td>
<td>38</td>
<td>24</td>
<td>19</td>
<td>303</td>
</tr>
<tr>
<td>#5. The number of visiting to a doctor(one person/year)</td>
<td>2.2</td>
<td>1.9</td>
<td>3.8</td>
<td>2.5</td>
<td>2.3</td>
</tr>
<tr>
<td>6. Medical expense in two weeks(Yuan)</td>
<td>2165</td>
<td>467</td>
<td>96</td>
<td>108</td>
<td>2836</td>
</tr>
<tr>
<td>#7. Medical expense (one person/year,Yuan)</td>
<td>21.5</td>
<td>23.6</td>
<td>15.3</td>
<td>14.3</td>
<td>21.1</td>
</tr>
</tbody>
</table>

#3=2/1x26, #5=4/1x26, P<0.05. #7=6/1x26 P<0.05.

On the subject of health utilisation, the average number of visiting to the doctor in the CMS group in 1988 was 3.8, which was obviously much higher compared with the self-financing group. But the medical expenditure of the CMS group was lower than that
of the self-financing group. This shows that the health utilisation in the CMS group was higher than in the self-financing group, and also the CMS kept medical expenditure down.

What produced these effects? From Table 3.3, we know that 87.5% peasants, that were covered by the CMS went to the village health station, whereas 66.2% peasants paying for themselves went there. It was an advantage for self-financing peasants that they could choose where they went to see the doctor. They had the opportunity, for example, to go to the county hospital in the hope of receiving better health services. But the CMS group had a limitation on their choice. The cost of one visit to the doctor at the village health station was 6.28 yuan; at the township hospital, 15.10 yuan; at the county hospital, 20.80 yuan. Therefore, the medical expenditure of the CMS group was inevitably lower than that of the self-financing group, and this clearly shows the effect the CMS has on controlling medical expenditure.

Another way the method of payment can influence utilisation is demonstrated if we consider the patients who did not go to hospital. In the investigation, there were 23 patients in 1988 who

Table 3.3 Comparison of percentage of various medical systems covering peasants to see doctor at various level hospitals

<table>
<thead>
<tr>
<th>Places</th>
<th>Self-financing (solo)</th>
<th>Self-financing (group)</th>
<th>CMS</th>
<th>Other</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Village</td>
<td>66.2</td>
<td>78.9</td>
<td>87.5</td>
<td>78.9</td>
<td>70.3</td>
</tr>
<tr>
<td>Township</td>
<td>25.7</td>
<td>13.2</td>
<td>8.3</td>
<td>5.3</td>
<td>21.5</td>
</tr>
<tr>
<td>County and over County</td>
<td>8.1</td>
<td>7.9</td>
<td>4.2</td>
<td>15.8</td>
<td>8.2</td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

P<0.01

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should have gone as inpatients but they did not go to hospital. All were self-financing patients. Therefore it seems reasonable to conclude that the change from the large scale use of the CMS influenced the health service need and utilisation by rural residents. In other words, the privatisation in Chinese rural health care restricted the health service utilisation of rural residents. We can get other evidences from Chapter 6.

3.2.2 Family economy

It is often suggested that family income is the most important factor affecting health utilisation and medical expenditure (Ding You He 1980; Luo Yi Qing 1987,10). Table 3.4 shows the health utilisation by rural residents with different incomes. At first sight, there is no direct relationship between income and medical utilisation. Whilst it appears that the number of visits to the doctor was least in the lowest income group (1.9). The highest number, 2.6 was amongst those with a yearly income between 200 and 500 yuan i.e. those officially classed as

Table 3.4 The different family incomes and health service utilisation

<table>
<thead>
<tr>
<th>Items</th>
<th>Yearly income per person (yuan)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&lt;200</td>
<td>200-500</td>
</tr>
<tr>
<td>1. The population of investigation</td>
<td>215</td>
<td>953</td>
</tr>
<tr>
<td>2. Number of visits to doctor (one person/year)</td>
<td>1.9</td>
<td>2.6</td>
</tr>
<tr>
<td>3. Medical expenditure (one person/year)</td>
<td>22.61</td>
<td>27.53</td>
</tr>
</tbody>
</table>

2. \( P > 0.05 \)  
3. \( P < 0.05 \)

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low income. The next two groups with higher incomes showed below-average utilisation. The point tells us that high income families do not necessarily have high medical consumption. Another is that those with the lowest income were spending almost 10% of their annual income on medical care.

Why was medical expenditure low in high income families? The number of visits to doctor was also not high in high income families. There might be five possible reasons. Firstly, the development of economy and culture has not been rapid in all rural areas. Therefore peasants' knowledge of modern medicine was fairly low. Most peasants thought medical expenditure was an extra economic burden. They did not want to increase health expenditure when the family income went up, but preferred to spend more money on building a house. So it appears that the medical expenditure in a high income family may not have been higher than that in a low income family. Secondly, in high income families, there existed the capability to consume in other respects for example drinking or gambling. Thirdly, sensitivity to matters of health was possibly greater in the high income family. So a high income family would see the doctor in time and the patient would not delay in treatment. Therefore finally, medical expenditure was less. Fourthly, perhaps the doctors did not always charge a rich family more, although this seems unlikely. Fifthly, low income families may try not to see a doctor at first but when a family member becomes very ill, buy expensive medicine, and do not care, at that moment, how much they pay. They might even prefer expensive medicine. The explanations above do not completely explain why family income and expenditure are not correlated,
but we may conclude from these analyses that family income is not the decisive factor influencing the health service utilisation of peasants. This is further evidence against the argument that the increase in peasants' income is one of reasons for collapse of the CMS. It has been suggested that when the income of peasants increased during health reform, the peasants became dissatisfied with the CMS's low level of health service and sought better services. This contributed to its decline (see Chapter 1, part two).

3.2.3. Population

If we divide the 725 households into various groups depending on the size of the family, we can see that the number of visits to the doctor and the medical expenditure both reduce, the bigger the family. Both factors were negatively correlated with family size. The correlation with number of visits was \( r = -0.87, p < 0.05 \); that with medical expenditure, \( r = -0.83, p < 0.05 \) (Table 3.5).

Table 3.5 Family size and health service utilisation

<table>
<thead>
<tr>
<th>Family size</th>
<th>Population of investigation</th>
<th>Number of visits doctor</th>
<th>Medical expenditure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>one person per year</td>
<td>one family per year</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>12</td>
<td>6.5</td>
<td>6.5</td>
</tr>
<tr>
<td>2</td>
<td>68</td>
<td>5.7</td>
<td>11.4</td>
</tr>
<tr>
<td>3</td>
<td>306</td>
<td>2.5</td>
<td>7.6</td>
</tr>
<tr>
<td>4</td>
<td>788</td>
<td>2.1</td>
<td>8.6</td>
</tr>
<tr>
<td>5</td>
<td>905</td>
<td>2.4</td>
<td>11.9</td>
</tr>
<tr>
<td>6</td>
<td>1414</td>
<td>2.0</td>
<td>13.0</td>
</tr>
</tbody>
</table>

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Linear Regression Equation, \( Y=6.8-0.937X \)

If we rate family size as the independent variable, \( X \); number of visits to the doctor as the dependent variable, \( Y \), we can build a linear regression equation \( Y=6.8-0.937X \). The relationship is clearly shown in Figure 3.3.

Generally speaking, there are more children and elderly people in a large family. The number of visits to the doctor and the medical expenditure should be also high compared with a smaller family. Yet these results show the opposite. This might be for 2 reasons: as the family's size increased, so did its potential for medical expenditure, and in a self-financing system, larger families would have to carefully consider their medical expenditure, and limit consumption. Although the number of individual visits was negatively correlated with family size, the number of family visits (i.e. the number of times someone in the family went to visit the doctor) went up. From Table 3.5, we know
that in a 6-person family there was an average of 13 visits per year. In the other words, there was at least one person going to see the doctor per month in their family. This could be a severe cause of anxiety for the person responsible for family finances, and might cause him (usually him) to seek to limit the health needs of individual members of the family. When the family member needed treatment at the county hospital, this cost both time and money, and probably led to an attempt to limit the waste of both.

3.2.4 Education

It is worth enquiring whether educational level, i.e. high school, middle school and primary school is related to health utilisation. It is generally agreed that educational level affects the people's understanding of health care. However, the educational level of people is usually low in the rural areas.

In this investigation, there were 175 illiterate heads of household in 725 households. The head of household is usually the family policy maker. Did the difference in educational level affect the health utilisation of the whole family? Table 3.6 shows that the lower the educational level of the head of household, the fewer, the visits to the doctor. For households where the head was illiterate, the average number of individual visits to the doctor was 1.8, compared with 2.7 in those household where the head had a high school education. Medical expenditure increased from the illiterate group to middle school group, but was lowest in the high school group. It is probable that people in this group would recognise the need for treatment earlier, thus avoiding more extensive and expensive treatment at a later date.
This suggests that the difference in educational level of the household's head affected the health utilisation of the family. The degree to which various factors affected health service utilisation for peasants is a complex question. We have seen that both family size and educational level are important, but these factors are related to each other. Generally speaking, in the Chinese rural areas, the lower the educational level of the family, the larger the family size. In contrast, the higher the educational level of the head of household, the smaller the family (Table 3.6).

Table 3.6 The education of household's head and health service utilisation

<table>
<thead>
<tr>
<th>Items</th>
<th>Illiterate</th>
<th>Primary school</th>
<th>Middle school</th>
<th>High school</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The population in difference educational level of household's head</td>
<td>924</td>
<td>1591</td>
<td>710</td>
<td>268</td>
<td>3493</td>
</tr>
<tr>
<td>2. Number of visits to doctor (one person/year)</td>
<td>1.8</td>
<td>2.4</td>
<td>2.6</td>
<td>2.7</td>
<td>2.3</td>
</tr>
<tr>
<td>3. Medical expense (one person/year)</td>
<td>19.22</td>
<td>20.18</td>
<td>28.69</td>
<td>12.51</td>
<td>21.10</td>
</tr>
<tr>
<td>4. Average population each family</td>
<td>5.3</td>
<td>5.0</td>
<td>4.3</td>
<td>4.2</td>
<td>4.8</td>
</tr>
<tr>
<td></td>
<td>2. P&lt;0.05.</td>
<td>3. P&lt;0.05</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3.2.5 Age

The age of people has an obvious effect on health service need and utilisation. The people who most need health services are the elderly and children. This investigation
indicated again that the highest number of visits to the doctor was in the 0-1 year group (8.7 times per year). As age increased, the number of visits fell. In the 15-24 year group, the number of visits was the lowest (0.6 times per person per year). After that, visits gradually increased with age. Figure 3.4 and Table 3.7 shows this in the 'bathtub curve'. The trend for medical expenditure paralleled that of visits. Health problems are most likely amongst the very young and the very old, yet during health reform, there were no useful policies directed specifically at these groups. Young fit adults seems to be less at risk. They need perhaps greater persuasion to be involved in a health insurance system, since they spend little on health at present, and use the medical services less. If the CMS, or a version of it was to be revived, their particular utilisation patterns would have to be taken into account before establishing a fixed rate insurance.

Table 3.7 The age and health service utilisation

<table>
<thead>
<tr>
<th>Age</th>
<th>Population of investigation</th>
<th>Number of visits to doctor (one person/year)</th>
<th>Medical expense (one person/year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-</td>
<td>99</td>
<td>8.7</td>
<td>55.68</td>
</tr>
<tr>
<td>1-</td>
<td>165</td>
<td>7.7</td>
<td>57.52</td>
</tr>
<tr>
<td>5-</td>
<td>276</td>
<td>2.7</td>
<td>16.96</td>
</tr>
<tr>
<td>10-</td>
<td>397</td>
<td>0.9</td>
<td>3.21</td>
</tr>
<tr>
<td>15-</td>
<td>897</td>
<td>0.6</td>
<td>8.96</td>
</tr>
<tr>
<td>25-</td>
<td>552</td>
<td>1.4</td>
<td>18.09</td>
</tr>
<tr>
<td>35-</td>
<td>401</td>
<td>2.0</td>
<td>35.92</td>
</tr>
<tr>
<td>45-</td>
<td>291</td>
<td>3.0</td>
<td>20.73</td>
</tr>
<tr>
<td>55-</td>
<td>237</td>
<td>2.3</td>
<td>41.69</td>
</tr>
<tr>
<td>65-</td>
<td>178</td>
<td>4.4</td>
<td>23.66</td>
</tr>
<tr>
<td>Total</td>
<td>3493</td>
<td>Average 2.3</td>
<td>Average 21.10</td>
</tr>
</tbody>
</table>
3.2.6 General evaluation

In the analysis of the factors above, their relative importance varies. If we compare maximum and minimum values for each factor (Table 3.8), the difference is greatest in the case of age (8.1), and lowest in the case of income (0.7).

Table 3.8 Internal changes of various factors, grouped

<table>
<thead>
<tr>
<th>Various factors</th>
<th>Number of visits to the doctor (one person/year)</th>
<th>Medical expenditure (one person/year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical system</td>
<td>3.8</td>
<td>1.9</td>
</tr>
<tr>
<td>Family income</td>
<td>2.6</td>
<td>1.9</td>
</tr>
<tr>
<td>Family population</td>
<td>6.5</td>
<td>2.0</td>
</tr>
<tr>
<td>Education</td>
<td>2.7</td>
<td>1.8</td>
</tr>
<tr>
<td>Age</td>
<td>8.7</td>
<td>0.6</td>
</tr>
</tbody>
</table>

*Max.: Maximum  *Min.: Minimum
A further comment must be made about the influence of the medical system on health service utilisation. As already discussed, the health service utilisation of the peasants covered by the CMS was higher than that covered by the other medical systems. By contrast, the medical expenditure in this group was lower than others. This relationship holds irrespective of other factors, and is especially significant where the CMS is in working order. However, in our sample, the majority of peasants were covered by the self-financing medical system. At that point, the other factors become significant. Age was the most influential factor. Family size and educational level were the factors which jointly affected the peasant's health service need and utilisation. The economic factor had been considered the most important previously. But this analysis suggests it was not as influential a factor on peasant's health service utilisation as thought before. The explanation is that the Chinese rural economic level has been improved by the rural economic reform since 1980. The reforms have not yet extended to improve health care for peasants. The peasants first had to solve food and clothing problems. That done, they would look for better health service.

3.3 Investigation of Attitudes towards Health Services for Rural Residents after Health Reform.

3.3.1 The quality of health service

725 heads of household evaluated the quality of health services in county, township and village three tier medical
organisations. Highest satisfaction was with the village health station (50.1%). Lowest satisfaction was with county hospitals (10%). Only 5.4% of respondents were dissatisfied with village health stations, which had the lowest dissatisfaction score of the three levels examined (Figure 3.5).

The main reason for dissatisfaction was the high price of medicine and treatment. Respondents thought that the county hospital possessed superior equipment, and buildings and more skilled doctors compared to township hospitals and village health stations. The worst in this respect was the village health station. With regard to service attitudes, 36.5% thought these were unsatisfactory in the township hospital, 39.6% in the county hospital, but only 4.4% at the village health station. For county and township, service attitude was the second most important cause of dissatisfaction after cost (Table 3.9).

Table 3.9 Regard reasons for dissatisfaction with various health facilities (%)

<table>
<thead>
<tr>
<th>Item</th>
<th>Village</th>
<th>Township</th>
<th>County</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical expense</td>
<td>60.0</td>
<td>38.5</td>
<td>47.2</td>
</tr>
<tr>
<td>Poor facilities</td>
<td>24.5</td>
<td>10.7</td>
<td>1.9</td>
</tr>
<tr>
<td>Poor service of staff attitude</td>
<td>4.4</td>
<td>36.5</td>
<td>39.6</td>
</tr>
<tr>
<td>Low technical level of staff</td>
<td>11.1</td>
<td>5.4</td>
<td>9.4</td>
</tr>
<tr>
<td>Other</td>
<td>0.0</td>
<td>8.9</td>
<td>1.9</td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>
One reason why the service attitude was poorer in the county hospital could have been because the doctors received their salary from the government. The quantity of patients did not basically affect their income. They did not have as great a sense of personal accountability as the village doctors. This is straightforwardly a managerial problem. Everyone paid by the government is a permanent staff member, and there is no one who controls the quality of health services. The health reforms ignored this problem. In fact it was necessary to improve the county and township staff's responsibility and working practices in order to supply proper health service for peasants. A series of health policies for health reform such as the hospital economic responsibility system (see Definition) emphasised how to increase the efficiency and profits but not quality. Although the hospitals
were able to enlarge wards and buy new medical equipment, the patients were still dissatisfied with hospital services because of the service attitudes of staff. Furthermore, with so much concentration in the reforms on economic gains, various methods were used to increase the charges for patients. These resulted in high medical expenses, which were such a cause of dissatisfaction to peasants. The poor medical conditions in village health stations should be a cause for concern. The quality of a village health station affects the health service for peasants, because it is the first point of contact and the primary supplier of health care. However the health reforms had a negative impact on it (see Chapter 6).

3.3.2 Medical system

According to the investigation, 88.8% of 725 households were paying for medicine themselves, which covered 89.7% of population. Just under half (43.9%) of household heads questioned were satisfied with this system, whilst 26% were not. Reasons for dissatisfaction, were, first that the disease caused the rural residents to became poor. When a family member became ill, the family could not afford medical expenses because it had lost the CMS protection. 70% peasants were of this opinion, it was by far the most frequently mentioned reason (Figure 3.6). In 3.2.1, we note there were 23 patients who needed hospital admission but were unable to go to hospital in 1988. These 23 patients were totally self-financing, and 16 of them did not go to hospital because the cost was too high, and they could not afford it.
3.3.3 Medical expenses

When the heads of household answered the question "Do you want to join the health insurance system for outpatients' service?" it meant the outpatient service was free if peasants subscribed to this kind of health insurance. 543 persons said "Yes", which accounted for 75% of heads of household. They were asked "Do you want to join the health insurance for inpatients' services"? 61.4% said "Yes".

When asked about the amount of medical insurance they wished to pay, heads of households said they would like to spend an average of 58.72 yuan premium for insuring the whole family's health including outpatient and inpatient services. This premium accounted for only 1.9% of 3089.7 yuan, the average family yearly income. In 1988, the actual medical expenditure of each family in
the study was 101.70 yuan, which accounted for 3.3% of family income. This indicated two points, first, the actual medical expenditure was not excessive, and was within the capacity of most families. Therefore insurance subscriptions may be a practical possibility. Second, the educational and economic level of peasants are not high enough at present, they do not think an investment for health is necessary. This explains why, although they could afford more, they are only prepared to spend 1.9% of annual income on a premiums and regarded the 3.3% average expenditure as far too high. During health reform, there was little specific health education for peasants, and it is probably necessary to convince them of the value of personal health investment. Their experiences with the CMS, which many had been forced to join in the past, had been unsatisfactory, because the CMS had many managerial and quality problems (Hillier and Xiang, 1994). Therefore extra encouragement towards an insurance based system may be required.

3.4 Summary of Chapter 3

Utilisation of health services among Chinese rural people is low relative to need. In some part, this is because Chinese rural areas are not very prosperous or developed at present. The survey results showed that privatisation of Chinese rural health care gave rural people more choices. The private doctors in the village health station had a better service attitude than the doctors in the county hospital. However, overall costs to be patients in the private system were higher than in the CMS group. 23 patients who were totally self-financing were unable to go to hospital because they could not afford the cost
of medical service. On the other hand, the health utilisation in the CMS group was higher than in the self-financing group. The CMS gave the rural residents a greater sense of security. So the high risk people who require more health services preferred the CMS (see Chapter 6).

In view of various factors influencing the need for health service, the type of health care system is a decisive factor in influencing utilisation. As stated in the previous paragraph, though in some cases private health enterprises could give rural people more choices and work more efficiently than public health enterprises, the privatisation in Chinese rural health care limited the health service utilisation of rural residents after health reform.

The age, number in the family and the educational level of household head had a broad influence on utilisation. Smaller families had a higher number of visits to be doctor per person per year, but of course, family size is also correlated with the educational level of the head of household. According to Chinese rural conditions, education is the only important influential factor in health service utilisation by peasants. Because the peasants in China still have quite strong traditional views, no matter what their educational level is, they wish to have more children. They think that more children in the family indicates more prosperity. Probably, with the educational level of peasants increasing beyond the present primary school level that most peasants have today, the educational level of peasants will be a decisive factor.
Money was not a decisive factor in health service utilisation for the rural residents because health consumption is usually controlled by hospitals and doctor. Moreover, an average approximate 600 yuan yearly income per person did not allow peasants to have the chance to choose good health services freely. The main consumption for peasants was still on food, clothes and enlarging agricultural production. Therefore the medical expenditure in the high income family was not bound to be higher than that in lower income family.
CHAPTER 4 HEALTH CARE AT COUNTY LEVEL

There has been a county, township and village three tier health network in Chinese rural areas for 40 years. The county health organization is a technical guidance centre for medical work, preventive medicine, MCH and family planning as well as a base for training health personnel. Generally speaking, the county hospital, epidemic station, maternal and children health station, and middle health school are standard health organizations in the county. In 1982, the Ministry of Public Health convened two meetings in Heng Yang and Shi Jia Zhuang city and announced the policy of building a Chinese traditional hospital in all counties. Following that announcement, most counties have built a Chinese traditional hospital as well (Hu Zhao Ming, 1987).

In addition to the organizations mentioned above, some counties have special preventive organizations such as the tuberculosis institutes, and those concerned with mental disease, schistosomiasis, leprosy, infectious disease, occupational disease and tumours. Some institutes are independent, some attached to a county hospital or epidemic station. These institutes are set up on the basis of an overall consideration of the local historical, economic, epidemic situation and health resources. Also, an organisation which repairs medical equipment, and services the whole county is usually present. It can be attached to the county hospital or independent.

4.1 Development of Health Enterprises County Level

From February to April 1989, seven counties were chosen in
Jiangxi province for investigation. These were FenYi, ShangGao, TongGu, Lean, YiHuang, LinChuan and ChongRen. The content of the investigation included:

1. The basic condition of the 7 counties in 1988, including geography, population, economy, education, culture, health organization, health personnel and health service.

2. The finances and health services both in the county hospital and the Chinese traditional medicine hospital in 7 counties.

3. The medical expenses of 482 in-patients in the county hospitals.

4. The expenditure of National Health Insurance in 7 county hospitals.

5. In depth investigation of 17 county leaders.

6. Supplementary investigation in 4 county hospitals and three county health schools in Jiangxi, ShanDong and ZheJiang provinces in 1990.

The scope of county health care is wide, and this discussion concentrates on the principal aspects of county health care which have been affected by health reform. The county hospital is the biggest health service provider amongst county health organisations. By studying the health service and finances of the county hospital, it is possible to identify the general influences of health reform upon health care at county level. Looking at the expenditure on national health insurance and the hospitalization expenses of patients helps to understand further the influences of health reform on the county's financial
condition. A comparison of the county hospital with the county Chinese traditional hospital is also made, because the county Chinese traditional hospital is the second biggest health provider amongst the county health organisations. In addition, there was a new policy concerning the development of county Chinese traditional hospitals during health reform. By comparing the two types of hospital, it is possible to evaluate the policy. The study also concentrates on the county health school rather than the MCH and county epidemic stations which are at the same level. The reason is because during health reform, Chinese rural health personnel underwent a large change. The barefoot doctor was replaced by the rural doctor and health worker (see Chapter 6). The county health school was a base for training rural health personnel before health reform, therefore it is important to investigate what changes took place there.

4.1.1 Geography, economy and population condition in 7 counties

42.9% counties were located in mountain areas, others were located in hilly land. It was rather inconvenient for peasants to visit the doctor because of these geographical conditions, especially in mountain areas. Few villages had a direct bus service. It was very difficult to send patients to county hospitals in the case of serious illness. However, the emergency services in township hospitals and village health stations were not very good, lacking the necessary equipment. There were 136 townships, and 1,403 villages in 7 counties. The total population was 2.11 million, the agricultural population were 1.767 million (83.7%).
Economic Condition: The average gross value of industrial output was 92 million yuan in each county in 1988, however the gross value of industry in township and village was only 10 million yuan. This indicates that the counties were rather well developed economically. Therefore health units at county level found it relatively easy to get financial support compared with the township hospitals and village health stations.

The average gross value of agricultural output was 63 million yuan. An average annual personal income of workers, 1107.5 yuan, which was less than the average 1261 yuan of the country. The yearly income of peasants was 550 yuan, which was less than an average 605 yuan for the whole country's peasants (People's Daily 1st, December, 1990). But the income of urban residents was double that of the rural residents. As regards health care, most residents in the urban areas were covered by national health insurance and labour health insurance. National health insurance is a scheme under which the government supplies free medical services for teachers, high school students and staff who work for the government. Under labour health insurance, the factory supplies free medical service for its workers. Normally, their families can get 50% of costs from both health insurance schemes. But most residents in rural areas were paying for their own health care, using private doctors. A few were still covered by the CMS. So there was different social benefit between the urban residents and the rural residents.

Education and Health: The illiteracy rate of children 12+ was 24.85% in 7 counties in 1982, which was higher than 21.38% for the whole of Jiangxi and 22.81% of the whole country
in the same year. The infant mortality rate was 19.26/1000 in 1988, which was less than 23.55/1000 for all rural areas in the same year (ZGWSTJ, 1988).

4.1.2 Health personnel and organizations

There were 46 health organizations (including hospital, MCH centres and epidemic stations); 2087 beds; 2812 health workers in 7 counties, and 2157 persons were health professional personnel, which accounted for 76.7% of health workers, slightly less than the 79.6% of the country as whole. 'Health professional' personnel means these persons have studied medicine (including advanced study and part time study) in a health school or medical university, and have direct clinical contact with patients. They include doctors, clinic technicians, nurses and pharmacists. A low proportion of health professionals would indicate that the administrative and back up service personnel were too numerous. Including township hospital beds and health professional personnel, average bed numbers per thousand population were 1.35, average number of professional personnel per thousand population was 1.59; both figures are less than 1.59 beds and 2.16 health professional personnel in rural areas (ZGWSTJ, 1988). As to the number of medical doctors, (the title 'medical doctor' means the person has been in health school or medical university for three or five years full time study and got one degree and the requisite qualifications for treating patients), the 7 counties average at 0.44/1000 compared with national and international data—see Table 4.1.
Table 4.1 Comparison of the number of beds and doctors between 7 counties and other countries

<table>
<thead>
<tr>
<th>Region</th>
<th>Year</th>
<th>Doctor per thousand population</th>
<th>Year</th>
<th>Bed per thousand population</th>
</tr>
</thead>
<tbody>
<tr>
<td>7 counties</td>
<td>1988</td>
<td>0.44</td>
<td>1988</td>
<td>1.35</td>
</tr>
<tr>
<td>Chinese rural areas</td>
<td>1988</td>
<td>0.54</td>
<td>1988</td>
<td>1.59</td>
</tr>
<tr>
<td>China</td>
<td>1988</td>
<td>1.01</td>
<td>1988</td>
<td>2.30</td>
</tr>
<tr>
<td>WHO 7 countries and 12 places</td>
<td>1974</td>
<td>1.51</td>
<td>1974</td>
<td>10.00</td>
</tr>
<tr>
<td>Japan</td>
<td>1986</td>
<td>2.10</td>
<td>1983</td>
<td>11.80</td>
</tr>
<tr>
<td>India</td>
<td>1982</td>
<td>0.41</td>
<td>1978</td>
<td>0.80</td>
</tr>
<tr>
<td>USSR</td>
<td>1985</td>
<td>4.20</td>
<td>1985</td>
<td>13.00</td>
</tr>
</tbody>
</table>

The data is from Chinese Health Statistical Digest 1988, the Ministry of Public Health P.R.C..

Preventive health personnel in 7 counties were 222, which accounted for 7.9% of total health personnel. This proportion reached the Ministry of Public Health standard which was that 7% of total health workers should be preventive health workers in 1984 (Dai Zhi-Cheng, 1988).

There were 128 MCH health staff in 7 counties with an average 18 health staff in each county. According to the Ministry of Public Health's standard, which is 1 MCH health staff to 10,000 population at county level, these seven counties should have 211 MCH health staffs. So there was a shortage of 83 MCH workers (Liu Xiao Xian 1988).

From the quantity and distribution of health personnel, the senior doctors were more numerous than junior doctors in seven counties. 73% of senior doctors were distributed in county health work units (Table 4.2), (Normally the term 'senior doctor'
means that the person has been in medical university for three or five years full time study, followed by 3-5 years clinical work. Junior doctors usually graduate from middle health school. They have to work more than five years, then pass a qualifying examination, after which they may obtain a senior doctor position).

Table 4.2. The structure of health personnel in seven counties in 1988

<table>
<thead>
<tr>
<th>Item</th>
<th>Senior doctor</th>
<th>Junior doctor</th>
<th>Nurse</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>County level</td>
<td>683</td>
<td>203</td>
<td>485</td>
<td>1371</td>
</tr>
<tr>
<td>preventive doctor</td>
<td>62</td>
<td>37</td>
<td>75</td>
<td>174</td>
</tr>
<tr>
<td>MCH Doctor</td>
<td>37</td>
<td>18</td>
<td>12</td>
<td>67</td>
</tr>
<tr>
<td>Township Hospital</td>
<td>257</td>
<td>239</td>
<td>176</td>
<td>692</td>
</tr>
</tbody>
</table>

As well as the proportions of health professionals per thousand population at various levels being lower than the national average, the low proportion of junior doctors was very unusual,—only 22.5% of the national average (whole counties, 0.91; seven counties, 0.21). This suggests that it might be important to replenish middle level health personnel in these areas, because it is impossible to train many high level health personnel in a short time.

Most health personnel in this study had graduated from a health school, but they also included 121 (5.6%) people at the county level who had graduated from a medical university. At township level, there were only 8 medical university graduates which accounted to 0.66% of the whole township level health
personnel (Table 4.3). The rural health personnel are few in number and poorly qualified. This is a long standing problem which hinders the development of rural health personnel services where development depends upon having more graduates. There is no adequate training for basic level health personnel either, but attracting medical graduates is very difficult. There are long standing differences between the urban areas and the rural areas such as a poor working conditions, and out of date medical equipment.

Table 4.3. The educational level of health personnel in seven counties in 1988

<table>
<thead>
<tr>
<th>Item</th>
<th>Graduate (5 years)</th>
<th>Graduate (3 years)</th>
<th>Middle health school</th>
</tr>
</thead>
<tbody>
<tr>
<td>County level</td>
<td>121</td>
<td>190</td>
<td>1324</td>
</tr>
<tr>
<td>Township hospital</td>
<td>8</td>
<td>71</td>
<td>379</td>
</tr>
</tbody>
</table>

4.1.3 Health services

Total patients numbered 1,237,212 in the seven counties in 1988. The total number of patients treated in township hospitals was 2,452,633. Total patients discharged from county level health units numbered 47,190 in 1988, those from the township hospital, 102,909.

Bed utilisation and turnover in county and township levels are compared and the results presented in Table 4.4.

1. Not only in seven counties but in Jiangxi and nationally, the bed turnover was higher in township hospitals than in county hospitals. But high turnover does not imply efficient utilisation. Most patients were admitted to the township hospital
Table 4.4. The utilization of beds in hospital in 1988

<table>
<thead>
<tr>
<th>Item</th>
<th>The utilization rate of beds (%)</th>
<th>Bed turnover rate</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>County Level</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 counties</td>
<td>75.6</td>
<td>23.2</td>
</tr>
<tr>
<td>*all counties in Jiangxi province</td>
<td>82.9</td>
<td>28.6</td>
</tr>
<tr>
<td>*all counties in China</td>
<td>85.3</td>
<td>26.1</td>
</tr>
<tr>
<td><strong>Township Level</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 counties</td>
<td>47.1</td>
<td>45.6</td>
</tr>
<tr>
<td>*all townships in Jiangxi province</td>
<td>41.6</td>
<td>31.6</td>
</tr>
<tr>
<td>*all townships in China</td>
<td>47.3</td>
<td>29.2</td>
</tr>
</tbody>
</table>

*(ZGWSTJ, 1988)*

only for observation and they stayed in hospital for a few days, before discharge. If patients were seriously ill, they would be transferred to a county hospital or a city hospital. Most township hospitals do not have adequate facilities to operate on patients. So use of township hospital beds is limited. This point can be also proved by the bed utilization rate. The rate in the township hospital is half that of the county hospital. A consequence of the low rate of bed utilization is an increase in medical costs and a decrease in profits in township hospitals (see Chapter 5).

2. Bed utilisation and bed turnover in the seven counties were both lower than those at county level in Jiangxi and nationally. This was not because people were healthier, but because the poor transport and lack of money made it difficult for peasants to go to their county hospital. The shortage of good doctors in some county hospitals also influenced the bed utilisation.
4.1.4. The development of health economy

Average health expenditure in seven counties was 738,000 Chinese Yuan in 1988, which only accounted for 3.2% of total county government financial expenditure. It was less than the 8.2% of the rich Shanghai suburban counties (ZGWSTJ, 1988). It is doubtful whether this proportion is sufficient for the development of rural health services. According to the Chinese current situation, health investment is planned to account for 5% of the governmental budget by the year 2000, which could be enough to meet the basic needs for developing rural health care. It needs the government to make up its mind to raise health investment in a short time, otherwise it is very difficult to put an end once and for all to the lack of doctors and medicine in the rural areas (Xiang Zheng, 1988).

The main health expenditure (37%) is for the support of the county hospital. 20% goes on preventive work, 25% for the township hospital. This distribution is the same as for other counties in China (Table 4.5).

<table>
<thead>
<tr>
<th>Item</th>
<th>Average level in 7 counties</th>
<th>JiangXi province</th>
<th>Whole country</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expenditure for hospital</td>
<td>36.9</td>
<td>36.5</td>
<td>41.8</td>
</tr>
<tr>
<td>Expenditure for prevention</td>
<td>19.5</td>
<td>17.2</td>
<td>14.0</td>
</tr>
<tr>
<td>Expenditure for township hospital</td>
<td>25.2</td>
<td>19.4</td>
<td>18.1</td>
</tr>
</tbody>
</table>

These three kinds of expenditure amounted to over 80% of total expenditure. Health expenditure for MCH, training health personnel and the CMS was very small proportion of the total. As well as the regular health investment from the county government budget, there were some extra health investments for special health work from central and local government, such as an average 250,000 yuan for family planning in 1988, 144,000 yuan for other health work, including schistosomiasis elimination and new medical equipment. Part of the extra investment came directly from the central government and the provincial government, the rest was from the special budget of the county government. This health investment excluded a capital construction investment for health, which was included in the total county budget for capital construction. It was usually obtained from the provincial government and some factories. An average capital construction investment for health was 258,000 yuan in seven counties in 1988.

At county level, in general, health investment was inadequate to meet the needs of health service development. Because of inflation more and more health expenditure went in salary payments for staff. Only a small part of health investment was used for enlarging the service. Some rural areas were only able to maintain the existing situation.

4.1.5. The expenditure of national health insurance (NHI)

The NHI is an important part of county health enterprise, which means the government supply of free medical services for state employees. This expenditure is not included in health investment, but comes from the administrative expenditure
of the department in which these people work. The government is responsible for all medical expenditure, and agrees to reimburse what has been spent. Since health reform, the expenditure of the NHI has gone up year by year because of the raising of medical prices and increased personal demand for health services. The NHI has become a heavy financial burden to governments at various levels. So one recent aspect of cost control has been an attempt to reform the management of the NHI.

According to government statistics, the expenditure on NHI in China in 1986 was 1.8 times of that in 1980, an average increasing by 18.9% each year. The rate of increase was greater than that of national income (Tian Yi Nong, 1987,10). In the seven counties of the study, average NHI expenditure of 1988 was double that of 1986. Total money was 614,290 yuan, which accounted for 2.7% of the total county expenditure. Expenditure on other health matters was 3.2% the total county expenditure. There was only 0.5% difference between the two. There is no doubt that the increasing rate of NHI surpassed that of industrial and agricultural output and price. What were the reasons? We can get answers from the table 4.6.

Table 4.6. Average county expenditure of national health insurance

<table>
<thead>
<tr>
<th>Year</th>
<th>Expenditure (Yuan)</th>
<th>Increase (%)</th>
<th>Population are covered</th>
<th>Increase (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1986</td>
<td>302,161</td>
<td>100.0</td>
<td>3,580</td>
<td>100.0</td>
</tr>
<tr>
<td>1987</td>
<td>432,956</td>
<td>143.3</td>
<td>4,681</td>
<td>130.8</td>
</tr>
<tr>
<td>1988</td>
<td>614,290</td>
<td>203.3</td>
<td>4,880</td>
<td>136.3</td>
</tr>
</tbody>
</table>
1. The people covered by the NHI increased from 3580 an average of in each county in 1986 to 4880 in 1988, because many people had retired since 1982. In 1982, the cadre policy changed, the government wanted the veteran cadres retired, so that young people could take their places. Most cadres who were at retirement age had to leave their jobs. These cadres were old and infirm and many suffered from chronic diseases. Their medical expenses were several times greater than the average per capita medical expense.

2. Medical cost increased due to the change in the prices of medicines and medical materials. Medical equipment replacements, additional test items and more charges increased the medical costs of people covered by the NHI.

3. Waste was another important factor which caused the increase in NHI's expenditure. As we know, the NHI supplied a free medical service, so if a family had one person covered by the NHI, this person could see the doctor more frequently and obtain more medicines for others in the family, which produced an example of 'moral hazard'. This mean that users will always demand more than is supplied, leading to abuse of health services. The hospital did not prevent this from happening, because the more patients went to hospital, the more medicines the hospital sold, and the bigger profit the hospital received. As a result, where 'one person was covered by the NHI, the whole family enjoyed the NHI'. Usually, this sort of family kept many medicines, which were sometimes resold at a profit to a private doctor. This was, of course, both wasteful and illegal (Xiang Zheng 1988,7).

To avoid waste and control the increase in NHI's expenditure, many places attempted managerial reform. In seven
counties, medical expenses were linked to the benefit of the individual, hospital and work unit. Each paid a part of the total. All of them were obliged to control medical expenses. The 'seven counties' used this method to reduce medical expenditure on NHI.

The difference between urban and rural areas was very striking. In this study, average per capita NHI medical expenditure for urban residents (workers) was 125.8 yuan in 1988, 11.4% of their 1107.5 yuan yearly income. The urban resident did not pay this 125.8 yuan. In contrast, the average medical expenditure per peasant was about 20 yuan in 1988, only 3.6% of their 550 yuan yearly income (Chapter 6). This amount of the money was paid by the peasant himself. The medical expenditure of peasants was far less than that of urban residents. The volume of medical services received by peasants was not as great as those available to urban residents and the health status of peasants was inferior to that of urban residents. The mortality of urban residents was 5.56 per thousand in China in 1988, that of peasants was 6.52 per thousand in same year (ZGWSTJ, 1988).

4.2 The State of County Level Health Units (including the county hospital, the MCH, the county traditional Chinese medicine hospital and the epidemic station)

Two investigations of the state of the County Health Unit were carried out. On the first occasion, in 1989, we collected data from seven county hospitals, the county Chinese traditional hospital, and the MCH and epidemic station in Jiangxi province. We analysed the hospitalization expenses, and compared the economic and health service conditions in both kinds of
hospital, the county hospital and county Chinese traditional hospital (See 4.3 below). The second time in 1990, we collected supplementary materials from four county hospitals in Jiangxi, Shandong and Zhenjiang provinces. The purpose was to understand further how these county hospitals are able to make up their financial deficits.

4.2.1 Income and expenditure

The total income was 18.77 million yuan in 1988 in seven county level hospitals. The expenditure was 17.59 million yuan. The profit was 1.18 million yuan. On checking income and expenditure, it appears that the biggest proportion of expenditure and income was derived from selling and buying medicine. The income from selling medicine was 10.52 million yuan, which made up 56% of total income, the expenditure on buying medicine was 8.80 million yuan, which accounted for 50% of total expenditure. The profit from selling medicine was the main support for running the hospital. The income from medical treatment was only 0.49 million yuan, of which fees for operations and registration were the main proportion. These low operation and registration fees did not reflect the real working value of medical staff. For example, my research in Xinyu, Jiangxi province in 1987, investigated the cost of an operation on a patient for gastric ulcer in the Xinyu city hospital. From 1981 to 1987, the average yearly increasing rate of cost was 4.4%, which was lower than the 7.7% of rate inflation and the 14.33% from selling medicine. One case paid only 28.35 yuan for an operation on gastric ulcer in 1987 (Xiang Zheng, 1988, 7). Therefore, doctors work yielded
comparitively little profit. As a result, the economic position of medical staff was not very high in many areas of China. Some people said that the income of a brain surgeon was not as much as a hairdresser's. We can understand why the rural doctors often complained about their salaries. The doctors who were in county hospitals preferred to go to township hospitals to perform operations because the patient charges were not controlled by the county hospital, and they could earn extra income but there are not many chances for them.

4.2.2 Analysis of hospitalization expenses

We chose a random sample of 482 in-patients in seven county hospitals for investigation. The purpose was to discover, through analysis of the hospitalization expenses, what health services the patients got after health reform. The development of county hospitals themselves, will be discussed below.

1. General conditions

Among 482 in-patients, 209 were female, 273, male. 166 (34.4%) in-patients were covered by the NHI or the Labour Health Insurance (the latter health insurance means that the factory supplies free health services for workers. The cost is borne by the factory budget, not by the government). 316 (66%) in-patients were self-financing patients. Most of them were peasants. Others were children and students in middle school.

The distribution of diseases is shown in Table 4.7. The major group were diseases of the respiratory system, which accounted for 31%. Most patients suffered from pneumonia and bronchitis, the second major group were diseases of the digestive
system (21%). Table 4.7 indicates that the majority of patients suffered from common and frequently occurring diseases. Only 6 patients suffering from tumour went to the hospital because the patients who suffered from more complicated diseases were transferred to civic and provincial hospitals.

Table 4.7. Distribution of diseases

<table>
<thead>
<tr>
<th>Type of disease</th>
<th>No. of patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respiratory</td>
<td>147</td>
</tr>
<tr>
<td>Gastroenteritis</td>
<td>101</td>
</tr>
<tr>
<td>Urological</td>
<td>12</td>
</tr>
<tr>
<td>Circulatory</td>
<td>30</td>
</tr>
<tr>
<td>Parturition</td>
<td>37</td>
</tr>
<tr>
<td>Nervous</td>
<td>17</td>
</tr>
<tr>
<td>Bone</td>
<td>56</td>
</tr>
<tr>
<td>Surgical trauma</td>
<td>41</td>
</tr>
<tr>
<td>Tumour</td>
<td>6</td>
</tr>
<tr>
<td>Missing Data</td>
<td>35</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>482</strong></td>
</tr>
</tbody>
</table>

After health reform, the number of self-financing patients increased in the county hospital. Most of them were peasants. These self-financing patients had more opportunities to purchase health services. On the one hand, this was an advantage. It was not necessary to get permission if they wanted to choose a hospital to see a particular doctor. The self-financing patient could receive county level health services if they paid the same or slightly higher than the patient who was covered by the NHI or labour health insurance. On the other hand, the self-financing patient had to bear the full cost. If they stayed in hospital longer due to severe disease, they might encounter financial difficulty. The study shows that such cases often occurred in the rural areas, as we shall see below.
2. The relationship between occupation, length of patient stay and in-patient medical expenditure.

If patients are classified by occupation, we can see that 45% workers and 44% cadres stayed in the hospital more than ten days, 33% peasants stayed in the hospital more than ten days. The health services they got were very different (Table 4.8).

Table 4.8. The relation between occupation and length of patient stay

<table>
<thead>
<tr>
<th>Days in hospital</th>
<th>Workers</th>
<th>Peasants</th>
<th>Students</th>
<th>Cadres</th>
<th>Children</th>
<th>Others</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;5</td>
<td>24</td>
<td>60</td>
<td>8</td>
<td>2</td>
<td>52</td>
<td>15</td>
</tr>
<tr>
<td>5-</td>
<td>26</td>
<td>50</td>
<td>4</td>
<td>7</td>
<td>51</td>
<td>14</td>
</tr>
<tr>
<td>10-</td>
<td>26</td>
<td>46</td>
<td>6</td>
<td>3</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>20-</td>
<td>10</td>
<td>6</td>
<td>0</td>
<td>4</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>30-</td>
<td>5</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>91</td>
<td>163</td>
<td>19</td>
<td>16</td>
<td>112</td>
<td>40</td>
</tr>
<tr>
<td>Missing data</td>
<td>41</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The reason for the difference was not that the peasants were less severely ill. As we can see from the Table 4.7, most patients who had been in the county hospital suffered from common or frequently-occurring disease. Yet peasant stays were shorter, because they paid themselves. The workers and the cadres did not have this constraint. The county hospitals preferred patients who were insured because their longer stays resulted in more profit.

Evidence to support this view comes from an analysis of the hospitalization expenses. Except for blood transfusion, which all patients pay for themselves, other expenses would depend on the kind of health insurance cover available to the patient. Some peasants could get a little financial support from the CMS, most
pay themselves. The medical expenses of workers and cadres are paid by the factory and the government. The students in middle school, and children would depend on their parents. If their parents were covered by the NHI or the labour health insurance, according to the rules, the parents paid half. The peasant's children have to be fully supported by their parents, unless their parents have some CMS cover. The students in university were the same as the cadres, and were covered by the NHI. We can see from Table 4.9 that 73.6% workers and 94% cadres did not need to pay any thing, but this applied to only 28% of peasants who were covered by the CMS or by labour health insurance from rural industry. Although some workers and cadres paid for themselves, this was only for blood transfusion and some minor items. Peasants were charged more, relatively, than workers or cadres. Most workers, even if they contributed to their own costs, had bills of less than 100 yuan. Nearly half the peasants paid more than this, and in 12% of cases, 3 times as much. The highest charge to a peasant was 777.3 yuan. This is a large financial burden when set against the average peasant income of 550 yuan per annum. If the peasant suffered from a disease such as cancer, which could not be treated at county level, the peasant had to be transferred to a provincial hospital. The total costs which also included travel and accommodation for accompanying relatives could use up the whole years income of the family. There is no doubt that this heavy expenditure is a consequence of the collapse of the CMS after health reform. The privatisation of Chinese rural health system worsened the inequity in health care that has already existed between the urban areas and the rural areas (see Chapter 6).
Table 4.9. A relation between occupation of inpatients and their medical expenses*

<table>
<thead>
<tr>
<th>Expense (Yuan)</th>
<th>Workers</th>
<th>Peasants</th>
<th>Cadres</th>
<th>Students</th>
<th>Children</th>
<th>Others</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 50</td>
<td>6</td>
<td>32</td>
<td>1</td>
<td>5</td>
<td>11</td>
<td>5</td>
</tr>
<tr>
<td>50-</td>
<td>10</td>
<td>32</td>
<td>0</td>
<td>3</td>
<td>47</td>
<td>8</td>
</tr>
<tr>
<td>100-</td>
<td>4</td>
<td>14</td>
<td>0</td>
<td>3</td>
<td>13</td>
<td>8</td>
</tr>
<tr>
<td>150-</td>
<td>0</td>
<td>12</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>200-</td>
<td>3</td>
<td>7</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>250-</td>
<td>1</td>
<td>6</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>300-</td>
<td>0</td>
<td>14</td>
<td>0</td>
<td>7</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>91</td>
<td>163</td>
<td>16</td>
<td>19</td>
<td>112</td>
<td>40</td>
</tr>
</tbody>
</table>

*Missing data 41

3. The nature of hospitalization expenses

An average hospitalization expense was 145.7 yuan. From Table 4.10, 54.6% of that cost was for medicine. Operation fees accounted for only 3.7%. With the inclusion of a treatment fee, this was raised to 24%, still a comparatively small proportion. Compared with the proportional distribution of costs in the U.S.A., there is a large difference. In 1981, in the U.S.A., 7.6% of costs were for medicine, 39.2% for the labour charges of doctors and nurses (Stein, 1983). Bed charges in China are also very low. At around 1.8 yuan per day, a hospital stay is cheaper than a hotel. Although medicine costs were high, most profit from selling medicine would be taken by the pharmacy and factory. The hospital received only a small percentage. But, of course, the costs to the patient were still very high.
Table 4.10 The form of hospitalization expense

<table>
<thead>
<tr>
<th>Items</th>
<th>Money (Yuan)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Western Medicine</td>
<td>62.1</td>
<td>42.6</td>
</tr>
<tr>
<td>Chinese Medicine</td>
<td>17.5</td>
<td>12.0</td>
</tr>
<tr>
<td>Treatment Fee</td>
<td>30.1</td>
<td>20.7</td>
</tr>
<tr>
<td>Bed Fee</td>
<td>14.5</td>
<td>9.9</td>
</tr>
<tr>
<td>Examination</td>
<td>6.5</td>
<td>4.5</td>
</tr>
<tr>
<td>Operation</td>
<td>5.4</td>
<td>3.7</td>
</tr>
<tr>
<td>Materials</td>
<td>3.9</td>
<td>2.6</td>
</tr>
<tr>
<td>X-Ray</td>
<td>1.2</td>
<td>0.9</td>
</tr>
<tr>
<td>Ultrasound Scanner</td>
<td>0.9</td>
<td>0.6</td>
</tr>
<tr>
<td>ECG</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td>Oxygen</td>
<td>2.3</td>
<td>1.5</td>
</tr>
<tr>
<td>Other</td>
<td>1.2</td>
<td>0.9</td>
</tr>
<tr>
<td>Average Total</td>
<td>145.7</td>
<td>100.0</td>
</tr>
</tbody>
</table>

4.2.3. Methods adopted by the county hospital for making up their deficits

A supplementary investigation of the financial organisation of four county hospitals in Jiangxi, Shandong and Zhejiang was made in 1990. These four county hospitals began to implement health reform in 1982. A main reform measure was to introduce the system of market competition which is the economic responsibility system. The quantity of hospital services are linked with profits. The detail was that doctors were given a quota of patients. If doctors saw more patients than their quota, they would receive extra money. This was an attempt to generalise the 'responsibility system', which had been successful in increasing peasant agricultural output, into the hospitals.

In 1988, the four county hospitals extended the implementation of the responsibility system throughout their organisations. Not only the medical staff, but each department and all other employees had economic targets set. The individual was responsible to the department, the department was responsible to
the hospital, the hospital was responsible to the county health bureau. The rules were the same throughout: if they exceeded the target, they would receive a bonus; if they failed, fines were imposed. It is worth noticing that the implementation of the 'responsibility system' in the Chinese health market was simply a copy of the model of economic reform and did not consider the health care market that also contains elements of social benefit. This reflects the fact that health policy-making in China is completely determined by the central government with virtually no consultation from society, community organizations and individuals. A further discussion is in the 4.3. Below, the impact of the responsibility system is considered.

1. Basic finances

In the four county hospitals studied, the income from selling medicine accounted for 44%-54% of total income, which was the highest proportion of all types of income, and was tending to

Table 4.11. The form of income in 4 county hospitals

<table>
<thead>
<tr>
<th>Items</th>
<th>1980</th>
<th>1985</th>
<th>1989</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total income (Ten thousand yuan)</td>
<td>389.69</td>
<td>668.80</td>
<td>1846.65</td>
</tr>
<tr>
<td>Proportion medicine</td>
<td>45.04</td>
<td>47.35</td>
<td>54.16</td>
</tr>
<tr>
<td>Test and treatment</td>
<td>6.39</td>
<td>13.00</td>
<td>19.45</td>
</tr>
<tr>
<td>Registration fee</td>
<td>3.60</td>
<td>4.25</td>
<td>5.02</td>
</tr>
<tr>
<td>Health investment from the government</td>
<td>13.57</td>
<td>15.84</td>
<td>4.42</td>
</tr>
<tr>
<td>Preparation</td>
<td>3.96</td>
<td>2.69</td>
<td>3.84</td>
</tr>
<tr>
<td>Other</td>
<td>27.44</td>
<td>16.87</td>
<td>13.11</td>
</tr>
<tr>
<td>Total</td>
<td>100.00</td>
<td>100.00</td>
<td>100.00</td>
</tr>
</tbody>
</table>
increase yearly. But it did not increase as quickly as the income from treatment, which went up from 6.39% in 1980 to 19.45% in 1989. The proportion of health investment from government reduced from 13.57% in 1980 to 4.42% in 1989 (Table 4.11).

To analyse the financial balance of each year in four county hospitals (Table 4.12, Figure 4.1): Figure 4.1 shows that the income from medical services increased yearly, from 36.3 ten thousand yuan in 1980 to 492.76 ten thousand yuan in 1989. The biggest increase was in 1988, when income from medical services increased by 86% over 1987. The income from selling medicines alone in 1988 was also the biggest jump in ten years, it went up by 40% over to 1987 figure. 1988 was the year when there was widespread implementation of the responsibility system. In that same year 1987-1988, governmental health investment reduced by 10.2 percent. This increase in income generated a four fold
Table 4.12 Economic condition in 4 county hospitals
(Ten thousands yuan)*

<table>
<thead>
<tr>
<th>Year</th>
<th>Medical service</th>
<th>Governmental investment</th>
<th>Expenditure</th>
<th>Income</th>
<th>Net profit again selling medicine</th>
<th>Balance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1980</td>
<td>36.30</td>
<td>52.89</td>
<td>136.94</td>
<td>-47.75</td>
<td>44.89</td>
<td>-2.88</td>
</tr>
<tr>
<td>1981</td>
<td>38.34</td>
<td>55.28</td>
<td>166.98</td>
<td>-73.36</td>
<td>53.70</td>
<td>-19.66</td>
</tr>
<tr>
<td>1982</td>
<td>43.47</td>
<td>67.74</td>
<td>176.64</td>
<td>-68.16</td>
<td>56.24</td>
<td>-11.92</td>
</tr>
<tr>
<td>1983</td>
<td>52.63</td>
<td>89.10</td>
<td>237.91</td>
<td>-96.18</td>
<td>67.41</td>
<td>-28.77</td>
</tr>
<tr>
<td>1984</td>
<td>68.48</td>
<td>117.06</td>
<td>269.48</td>
<td>-83.94</td>
<td>70.97</td>
<td>-12.97</td>
</tr>
<tr>
<td>1985</td>
<td>103.79</td>
<td>105.95</td>
<td>254.07</td>
<td>-44.33</td>
<td>81.31</td>
<td>36.98</td>
</tr>
<tr>
<td>1986</td>
<td>123.34</td>
<td>152.89</td>
<td>344.92</td>
<td>-68.69</td>
<td>99.38</td>
<td>30.69</td>
</tr>
<tr>
<td>1987</td>
<td>204.23</td>
<td>152.84</td>
<td>453.89</td>
<td>-96.82</td>
<td>125.69</td>
<td>28.87</td>
</tr>
<tr>
<td>1988</td>
<td>381.18</td>
<td>137.21</td>
<td>578.23</td>
<td>-59.84</td>
<td>176.37</td>
<td>116.53</td>
</tr>
<tr>
<td>1989</td>
<td>492.76</td>
<td>81.75</td>
<td>617.75</td>
<td>-43.24</td>
<td>180.58</td>
<td>137.34</td>
</tr>
</tbody>
</table>

*The income and expenditure of medicine have been deducted from total income and expenditure.

increase in profits for 1988 over 1987. Therefore it seems reasonable to conclude that health reforms brought a vigour to the hospital's running and aroused the enthusiasm of the staff. The reforms increased staff productivity and income and there is no doubt that, on the simple outcome measure of deficit reduction, the ten years of health reform helped the hospitals to extricate themselves from a deficit position. Other factors which lessened the deficit cannot be ignored, however. These include price increases, and significantly, the lossening of controls on patient choice because of the collapse of the CMS. Peasants could now choose their own services, for which they had to pay themselves. The county hospital, because of its range of services scored an easy victory over the township hospitals in the competition for patients.

2. Examination of deficit strategies

As Table 4.12, shows, without the large profits made from selling medicine, the hospitals would have remained in a
deficit position. They could not survive financially solely on the income from medical services and their government subsidy. This suggests that the medical services were not charging patients at cost.

a. Selling and buying medicines proved the most useful way to make up the deficit. Average charges for medicines to outpatients increased by about 400%, between 1980-1989 those for inpatients by nearly 600% (Table 4.13).

Table 4.13. Average cost per visit or treatment episode of outpatient and inpatient service (yuan)

<table>
<thead>
<tr>
<th>Year</th>
<th>Total expenditure</th>
<th>Medicine</th>
<th>Total expenditure</th>
<th>Medicine</th>
</tr>
</thead>
<tbody>
<tr>
<td>1980</td>
<td>1.74</td>
<td>1.40</td>
<td>32.69</td>
<td>28.24</td>
</tr>
<tr>
<td>1981</td>
<td>1.83</td>
<td>1.48</td>
<td>35.60</td>
<td>30.95</td>
</tr>
<tr>
<td>1982</td>
<td>1.98</td>
<td>1.58</td>
<td>42.99</td>
<td>36.75</td>
</tr>
<tr>
<td>1983</td>
<td>2.26</td>
<td>1.78</td>
<td>50.08</td>
<td>43.12</td>
</tr>
<tr>
<td>1984</td>
<td>2.70</td>
<td>2.14</td>
<td>63.39</td>
<td>51.88</td>
</tr>
<tr>
<td>1985</td>
<td>3.23</td>
<td>2.41</td>
<td>85.02</td>
<td>64.72</td>
</tr>
<tr>
<td>1986</td>
<td>3.52</td>
<td>2.67</td>
<td>99.58</td>
<td>77.23</td>
</tr>
<tr>
<td>1987</td>
<td>4.50</td>
<td>3.28</td>
<td>131.76</td>
<td>96.23</td>
</tr>
<tr>
<td>1988</td>
<td>6.31</td>
<td>4.80</td>
<td>228.28</td>
<td>145.62</td>
</tr>
<tr>
<td>1989</td>
<td>7.86</td>
<td>5.96</td>
<td>274.52</td>
<td>167.13</td>
</tr>
</tbody>
</table>

Net profits from sales of medicine increased more rapidly after 1986 (Table 4.12) because the reform was carried out further. The rate of profit from selling medicine was 15%. The average ratio of gross profit to net profit from selling medicine was 7 to 1 after 1986. It meant the hospitals increased their gross income seven fold from selling medicine, resulting in a one-fold net income increase.

b. Another method was to charge more for medical services. Table 4.13 shows that charges for outpatient service increased yearly, from 0.34 yuan in 1980 to 1.9 yuan in 1989, by 5.6 times. Increases in inpatient charges were massive, from 4.45
yuan in 1980 to 107.39 yuan in 1989, jumping 24.1 times (total expenditure - medicine). The main measures were to increase the number of medical service items, for example, the registration fee was divided into day time, out-of-hours, emergency service and senior doctor service, to increase the numbers of laboratory tests and to increase the price of each item of medical service.

c. Changes in government health investment: the government health investment was used mainly to pay staff salaries. It increased yearly before 1988, but reduced in 1988-1989 (Table 4.12). The government hoped that the hospitals would solve their own financial problems by implementing the economic responsibility system. The government found it was also in financial difficulty. According to this study, an average health investment covered only half of the staff's salary, whereas in 1983 government paid nearly 60% of staff salaries. The proportion declined yearly and by 1986 was down to 26%. Government investment contributed relatively little to management of the deficit. Health reforms reduced the financial burdens of the government, but added to those of the hospital. The hospitals had to look for methods to transfer their costs to patients in order to stay open. If the patients were covered by the NHI and the labour health insurance, there was no problem, for hospitals shifted the costs to the factories, or back to the government. But for patients those paying for themselves, mainly peasants, there were clear difficulties.

d. After health reform, the hospitals increased their working efficiency and attempted to reduce waste and administrative expense. Table 4.12 shows how an incremental rate
of expenditure was decreasing yearly since 1986, from 35.8% in 1986 to 31.6% in 1987, 27.4% in 1988 and 6.8% in 1989.

Health reforms in the county hospital had undoubtedly some positive effects. Income was increased, some expenditures were controlled, managerial efficiency was improved and the government's contribution also decreased. On the other hand, the economic responsibility system and some reform methods which emphasised incentives, strengthened the monopoly position of doctors towards patients. The doctors tried to see more patients and make large prescriptions in order to complete their working quota early and earn extra money. Government health investment was insufficient, and the welfare functions of the hospital i.e. providing care, were seriously impaired. The situation stimulated excessive use of medical services and profits were achieved by selling increased amounts of medicine. Last of all, the costs to peasants were considerably increased.

How might these problems be solved? One answer might be to increase the charge for technical services and to reduce the expenditure on medicines. The profit from selling medicine would then be transferred to profit from technical services. This reduces the burden to consumers and increases the direct income of the hospital. For example, with 15% profit from selling medicine, if the outpatient service reduces 1 yuan of medicine costs, the hospital reduces 0.15 yuan income, but at the same time, increases registration fee to 0.5 yuan, the charge for patients will be reduced 0.5 yuan, and the hospital could increase 0.35 yuan income. This seems a feasible method of benefiting both consumer and hospital, and cuts the profits to pharmaceutical companies (Table 4.14).
Table 4.14. Price adjustment (yuan)

<table>
<thead>
<tr>
<th>Item</th>
<th>Income of hospital</th>
<th>Expenditure of patient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduction of 1.00 yuan in selling medicine</td>
<td>*-0.15</td>
<td>-1.00</td>
</tr>
<tr>
<td>Increase of 0.5 yuan registration fee</td>
<td>+0.50</td>
<td>+0.50</td>
</tr>
<tr>
<td>Balance</td>
<td>+0.35</td>
<td>-0.50</td>
</tr>
</tbody>
</table>

* The rate of profit from medicine sales is 15%.

4.3. A Comparison of the County Hospital (CH) with the County Chinese Traditional Hospital (CCTH)

Traditional medicine, as is well known, plays an important role in China. Several important forms of traditional medicine are practiced, including Chinese, Mongol, Tibetan, Ugyur and others. Because over 93 percent of China's population is of the Han ethnic group, Chinese traditional medicine (CTM) predominates, although official policy does not discriminate in favor of any particular system of traditional medicine (Jamison 1985).

Before health reform, the development of Chinese traditional medicine was not as rapid as western medicine in China. At present, there are 1.05 million doctors of western medicine, a nine fold increase over 1949. By contrast there were only 0.32 million traditional doctors in 1986, less than in 1950. There were only 171 Chinese traditional hospitals in 1976 (Yu Xiang-Dan 1988,3).

In view of this situation, the Ministry of Public Health convened a conference on CTM in Heng Yang, Hunan province in 1982, to discuss the developing problems of Chinese traditional
medicine. In the same year, the development of CTM was placed on the general programme of the new constitution which was issued in 1982. The CCPCC and the State Council held five meetings on the matter. The CCPCC decided "Chinese traditional medicine should have the same position of importance as Western medicine" in June, 1985. The State Council set up the State Bureau of Chinese Traditional Medicine (SBCTM) on January 4, 1986. It was established formally on December 6, 1986 (Hu Zhao Ming, 1986). The objective of the Ministry of Public Health was that there should be one Chinese traditional medical hospital in each county by 1995. This policy originated from the CCPCC. The CCPCC decided the direction of the CTM then the State Council built an organization to express the importance of the CTM. In following the CCPCC, the Ministry of Public Health made the policy of building a County Chinese Traditional Hospital in all counties. The counties just implemented the policy without thinking about its financial viability. The whole process of policy-making follows a typical 'top-down' model as mentioned in the literature, where community participation is absent. This policy had positive effects for improving Chinese traditional medicine and provided convenient access to a hospital for rural residents. The number of Chinese traditional medicine hospitals increased from 678 in 1980 to 1445 in 1985, and 1932 in 1988. During health reform, Chinese traditional health workers increased by 46.2%. CTM developed very rapidly during health reform (ZGWSTJ, 1988).

However, was such a rapid development necessary? How much in demand is it? The policy lacked systematic investigation and study. Data from seven counties were analysed to
compare the county hospital with the county Chinese traditional hospital. The purpose was to consider the feasibility of building a CCTH in all counties. Because of the lack of data about finance from one CCTH, six county hospitals were compared with six county Chinese traditional hospitals.

4.3.1 Analysis of basic health resource

Table 4.15 shows that the number of staffs, beds and fixed assets in the CH were 2.7 times, 4.5 times and 3.1 times of those in CCTH respectively. Governmental investment was only 2.6 times greater. Looking at health investment average per staff and average per bed, both were lower in the CH than in the CCTH. This indicated a scale of the CCTH was small, but the governmental investment was big. It was due to the effect of health reform.

Table 4.15. Comparison of basic health resource in the CH with that in the CCTH

<table>
<thead>
<tr>
<th>Item</th>
<th>CH</th>
<th>CCTH</th>
<th>CH:CCTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average staffs in each hospital</td>
<td>226</td>
<td>83</td>
<td>2.7:1</td>
</tr>
<tr>
<td>Average bed in each hospital</td>
<td>218</td>
<td>49</td>
<td>4.5:1</td>
</tr>
<tr>
<td>Average fixed assets of each hospital (Ten thousand yuan)</td>
<td>161.2</td>
<td>52.2</td>
<td>3.1:1</td>
</tr>
<tr>
<td>Average governmental investment to each hospital (Ten thousand yuan)</td>
<td>16.4</td>
<td>6.2</td>
<td>2.6:1</td>
</tr>
<tr>
<td>Average governmental investment to each person (yuan)</td>
<td>726</td>
<td>747</td>
<td>0.97:1</td>
</tr>
<tr>
<td>Average governmental investment to each bed (yuan)</td>
<td>752</td>
<td>1265</td>
<td>0.59:1</td>
</tr>
</tbody>
</table>
A comparison of health personnel (Figure 4.2) shows that the educational level of doctors in the CCTH was lower than that in the CH. 22.6% of doctors had no record of formal schooling. A majority of doctors in the CCTH were in a low professional position compared with those in the CH. The difference is important and relates to the background of Chinese traditional doctors. Chinese traditional Medicine has a long history. Many Chinese traditional doctors followed their masters to study in the rural areas. They had few opportunities to study in medical school. But in CCTH, some Chinese traditional doctors took courses in medical school, so they had the ability to treat patients using western medical knowledge. The higher level professional position is called "Zhu Ren" Doctor. The middle level professional position is called "Zhu Zhi" doctor. Normally, both of them studied in medical college. If Chinese traditional doctors had many years of clinical experience and passed the examination, they could also achieve these titles. The lowest level professional position is called "Yi Shi", which described those doctors who have studied in health school for only two or three years.

4.3.2. Analysis of income and expenditure

The expenditure of the CCTH was three fold lower than that of the CH; the income, 3.3 times lower. The expenditure and income was unbalanced, an average deficit per CCTH was 29,000 yuan in 1988. Even including government health investment, each CCTH had only 33,000 yuan profit. If the per capita profit is calculated, there was an average of 398 yuan in the CCTH; 1062
Figure 4.2. Comparison of Health Personnel

CH = County Hospital
CCTH = County Chinese Traditional Hospital

P(0.05)
yuan, in the CH. This shows that the CCTH could only survive on basis of the government subsidy. They did not have the capacity to enlarge their services (Table 4.16).

Table 4.16. Comparison of two kinds of hospital medical income and medical expenditure (ten thousand yuan)

<table>
<thead>
<tr>
<th>Item</th>
<th>CH</th>
<th>CCTH</th>
<th>CH:CCTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>An average total medical income in each hospital</td>
<td>180.0</td>
<td>55.1</td>
<td>3.3:1</td>
</tr>
<tr>
<td>An average total medical expenditure in each hospital</td>
<td>172.4</td>
<td>58.0</td>
<td>3.0:1</td>
</tr>
<tr>
<td>An average profit of each hospital</td>
<td>7.6</td>
<td>-2.9</td>
<td>-</td>
</tr>
<tr>
<td>After adding governmental investment, the profit of each hospital</td>
<td>24.0</td>
<td>3.3</td>
<td>7.3:1</td>
</tr>
<tr>
<td>An average profit of staff making (yuan)</td>
<td>1062.0</td>
<td>398.0</td>
<td>2.7:1</td>
</tr>
</tbody>
</table>

The sources of income of the CH and the CCTH differed [Table 4.17(a)]. The main income of the CCTH was from outpatient services (62.4% of the total). At the CH, inpatient services accounted for 62.3% of total income. The reasons were that the technical level of health staffs was lower in the CCTH, the scale of work undertaken was small, and there were fewer beds. The capacity to carry out surgery was less. Table 4.17(b) shows that 78.6% of CCTH income was from medicine sales compared with 62.1% in the CH. The income from tests and treatment was lower in the CCTH.
Table 4.17(a). Comparison of the sources of medical income between the CH and the CCTH (%)

<table>
<thead>
<tr>
<th>Item</th>
<th>CH</th>
<th>CCTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outpatient income</td>
<td>30.8</td>
<td>62.4</td>
</tr>
<tr>
<td>Inpatient income</td>
<td>62.3</td>
<td>32.9</td>
</tr>
<tr>
<td>Pharmaceutical manufacture</td>
<td>3.8</td>
<td>0.0</td>
</tr>
<tr>
<td>Other</td>
<td>3.1</td>
<td>4.7</td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table 4.17(b). Sources of income in outpatient departments and inpatient admissions (%)

<table>
<thead>
<tr>
<th>Item</th>
<th>CH</th>
<th>CCTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Selling medicine</td>
<td>62.1</td>
<td>78.6</td>
</tr>
<tr>
<td>Tests and treatment</td>
<td>25.7</td>
<td>12.9</td>
</tr>
<tr>
<td>Bed charges</td>
<td>4.2</td>
<td>2.2</td>
</tr>
<tr>
<td>Registration fees</td>
<td>1.1</td>
<td>1.6</td>
</tr>
<tr>
<td>Subtotal</td>
<td>93.1</td>
<td>95.3</td>
</tr>
</tbody>
</table>

73% of the medicines sold to outpatients at CCTH were traditional remedies, the remainder were western medicines. At the CH, 44% of medicine was traditional Chinese medicine, which is quite a large proportion. Clearly, Chinese traditional medicine is also well developed as a treatment option in the CH. When it comes to inpatient treatments, the CCTH uses less traditional medicine, with 40% of its prescriptions being for western drugs. Combining western and traditional treatments for inpatients was an important characteristic of the service at the CCTH.
4.3.3 Level of working efficiency in the two kinds of hospitals

According to 'the working regulations for Chinese traditional hospitals in China', a standard ratio of bed to staff was 1 to 1.3-1.4 in a hospital of fewer than 150 beds, 1:1.3-1.4 fewer than 300 beds in the county hospitals (Peng Yui Chong, 1988, 3). Yet the investigation showed substantial overstaffing in CCTH (Table 4.15). 66 staff members should be enough for each CCTH, but there was an average of 83 staff members in each CCTH, a surplus of 17. Average numbers of staff at the CH should be 294, but the actual average was 226 staff members, a shortfall of 68. Was staff surplus at the CCTH related to greater bed utilization and harder work? Figure 4.3 suggests that both *the rate of bed utilisation, and *the average time of bed turnover were lower in the CCTH than in the CH. For the whole of Jiangxi province, the rate of bed utilization was 75% in the CCTH, 83% in the CH (ZGWSTJ, 1988). So
the staff surpluses can not be justified on the basis of greater utilization.

If patients numbers are calculated at CCTH, each doctor saw an average of 686 outpatients in 1988 compared with 514 patients in the CH. Nevertheless as to the patients discharged from hospital and *average bed utilisation days, the CH averaged 7.3 times and 1.3 times compared with the CCTH. This shows that outpatient services are what the CCTH is mainly engaged in. The quantity of inpatient services supplied by the CCTH seems insufficient. From an average output of each staff, average bed utilisation days in the CCTH were 134 in 1988; in CH, were 289. If one bed utilisation day is to equal to three outpatients service, the general output of each staff member in the CH was 1,381, that in the CCTH was 1,086. Average working output per staff in the CH was 1.3 times greater compared with the CCTH (This index combines the service quantity of outpatient with the service quantity of inpatient, and is only for evaluating the two kinds of hospitals)(Table 4.18).

\[
*\text{The rate of bed utilisation} = \frac{\text{Total days of bed occupancy}}{\text{Total days of bed utilisation}} \times 100\%
\]

\[
*\text{The average time of bed turnover} = \frac{\text{Total patients are discharged from hospital}}{\text{Total beds utilisation}}
\]

\[
*\text{Average bed utilisation days} = \frac{\text{Total days of bed are occupied}}{\text{Total beds that can be used}}
\]
Table 4.18. Comparison of output of the CH with that of the CCTH in 1988

<table>
<thead>
<tr>
<th>Item</th>
<th>CH</th>
<th>CCTH</th>
<th>CH:CCTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>An average output of each hospital</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outpatients service times</td>
<td>116,011</td>
<td>56,972</td>
<td>2.0:1</td>
</tr>
<tr>
<td>The patients discharged from hospital</td>
<td>5,864</td>
<td>806</td>
<td>7.3:1</td>
</tr>
<tr>
<td>Bed utilisation days</td>
<td>65,162</td>
<td>11,160</td>
<td>5.8:1</td>
</tr>
<tr>
<td>-------------------------------------</td>
<td>----------</td>
<td>---------</td>
<td>---------</td>
</tr>
<tr>
<td>An average output of each staff</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outpatient service times</td>
<td>514</td>
<td>686</td>
<td>0.8:1</td>
</tr>
<tr>
<td>The patients discharged from hospital</td>
<td>25.9</td>
<td>9.7</td>
<td>2.7:1</td>
</tr>
<tr>
<td>Average bed utilisation days</td>
<td>289</td>
<td>134</td>
<td>2.2:1</td>
</tr>
<tr>
<td>*General output</td>
<td>1381</td>
<td>1088</td>
<td>1.3:1</td>
</tr>
</tbody>
</table>

*General output = number of outpatient service + (bed utilisation days x 3)  
1381 = 514 + (289x3)

[one bed utilisation day equals three outpatients service.]

Overall it seems that the volume of health services provided by the CH was greater than that of the CCTH. Staff members in the CH were busier than that in the CCTH, but their salaries were the same. Costs of the CCTH were higher, but their profitability was lower, which seems a wasteful use of resource.

4.3.4. The prospects for development of CCTH

The CCTH is small scale, with staff who are relatively less well trained in a formal sense. Per unit of input, output is relatively low, and these hospitals have a deficit.

1. One problem is that CCTH is excessively dependent on governmental subsidy and income from medicine sales. The support
from government is difficult to expand, and is vulnerable to policy change. Selling medicine is also a strategy pursued by county and township hospitals. If these sales are regulated, the impact on the income of CCTH is likely to be even greater because of their greater dependence on such sales (Yan Hui Zhong, 1988,8).

2. The research suggests that the CCTH encouraged the wastage of health resources. The CCTH have been unable to alter their deficit position, yet government policy is that a CCTH should be built in all counties by 1995, and that its scale and standard should be the same as the CH (Hu Zhao Ming, 1987). The deficit will be very huge in whole counties and this can not be rescued by improved efficiency. As shown above, the rate of bed utilization was low. Most patients are self-financing, and in the market for patients, the CH, with its superior doctors and greater access to medical techniques is bound to win. The government can not afford the huge investment needed to improve these hospitals and train their staff. The greater dependence on medicine sales of the CCTH currently would have to be increased. These medicines are bought from pharmaceutical factories using the CCTH's main source of finance-government money. And prices to patients would still have to be increased.

4.3.5 The way forward for the CCTH

1. Enlarging the traditional medicine department of the county hospitals.

The CCTH do not exist yet in all counties. Measures should be suited to local conditions. After the feasibility of building the CCTH has been proved then building could go ahead. If
this is impossible consideration should be given to enlarging the department of Chinese traditional medicine in the county hospital, because all county hospitals already have such departments. This approach would take advantage of the strong 'outpatient' nature of Chinese health services and expand on this valuable characteristic. The support services and superiority of medical equipment are also likely to be greater in the CH. Such an option would also reduce the scale and dependence upon government investment, improve the utilization of health resource and expand the departments of Chinese traditional medicine in county hospitals, suiting measures to local conditions. After proving the feasibility of building the CCTH, then it could go ahead. If not, an enlargement of the department of Chinese traditional medicine in county hospital should be considered, because all county hospitals possess one. In this way, western medicine and Chinese traditional medicine learn from and help each other, to make up each other's deficiencies. This method brings the outpatient service characteristics of Chinese medicine into full play as well as drawing support from inpatient services and the superior medical equipment in the county hospital. It reduces the scale of governmental subsidy, improves the utilization of health resource and extends the department of Chinese traditional medicine in the county hospital.

2. Readjustment of the internal structure of the CCTH.
Some counties already have a CCTH. Since the outpatient service is the main service provided, distribution of health personnel and other health resources should take account of this fact.
3. Closer co-operation and exchange between the two types of hospital.

A further option suggests a sharing and exchange of facilities and resources between the CH and CCTH. The CH could transfer its inpatients to the CCTH in order to raise bed utilization. The CCTH could send doctors to the CH to study western medicine in order to improve their medical skills. Following such training doctors would be able to treat patients by western medicine and Chinese traditional medicine together. The two kinds of hospital could bring their advantage into full play, in-co-operation rather than competition.

4.4 County Health School (CHS)

The CHS is the main base for training rural health personnel. Before health reform, the CHS had two kinds of student, the first was a regular student who studied in the CHS for two or three years, the second was a barefoot doctor who usually received six or twelve months advanced study there. The CHS contributed greatly to solving the educational needs of rural health personnel at that time. However the development of the CHS was neglected during health reform and no adequate plans were laid to solve personnel shortages for the rural areas. A supplementary investigation was carried out about the CHS in 1990. 4 counties in Jiangxi, Shandong and Zhejiang provinces were chosen. One of them did not have a county health school, so finally, three county health schools were investigated.

4.4.1 General condition

There were 962 students and 51 teachers in three county
health middle schools in 1989. The teacher/student ratio was 1:19, which was far lower than the recommended ratio of 1:8 (State Education Commission, 1987). 21.1% of the teachers had a five years university course; 33.3%, three years university training; 22.8%, professional middle school training; 22.8%, below middle school. 77.8% of teachers had joined the CHS in the last five years. Low health investment by the government, meant resources of only 148.36 yuan for each student in 1989, far lower than the 835.8 yuan per student in provincial and municipal middle level health schools with whom they might be compared (Chen Min Zhang, 1989, 2). Over half the teachers (54%) wanted to leave and work elsewhere. Below, some of the reasons for these problems and the impact of the health reforms are analysed.

4.4.2 Changes in the CHS during health reform

1. Changes in income sources.

The ratio of national budget accounting for total income in the County Health Schools reduced year by year, and that of tuition fees increased gradually. Though health investment from the government increased yearly after 1983, it only took into account inflation and the increased salaries of staff. It could not be used for the development of the CHS. In 1989, the government's national share of the budget in the three county health schools would not cover the staff's salary (Table 4.19 and Figure 4.4). Government investment was down from 5% of the beginning of 1980's to 1.5% at the end of 1980's (the proportion means the national budget of the CHS accounted for total budget of county health bureau). This reflected the reduction in the total budget to the county, where most of the health budget was spent on
Figure 4.4. The Income Form of Three County Health Schools

![Graph showing the income form of three county health schools.]

Table 4.19. The main income of three county health schools

<table>
<thead>
<tr>
<th>Year</th>
<th>Total income (Yuan)</th>
<th>National Budget (Yuan)</th>
<th>%</th>
<th>Tuition fee (Yuan)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1983</td>
<td>87,231</td>
<td>41,500</td>
<td>47.6</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>1984</td>
<td>138,470</td>
<td>65,000</td>
<td>46.9</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>1985</td>
<td>151,708</td>
<td>54,170</td>
<td>35.7</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>1986*</td>
<td>224,120</td>
<td>83,830</td>
<td>35.4</td>
<td>136,124</td>
<td>60.7</td>
</tr>
<tr>
<td>1987</td>
<td>304,210</td>
<td>106,620</td>
<td>35.0</td>
<td>193,590</td>
<td>63.6</td>
</tr>
<tr>
<td>1988</td>
<td>494,581</td>
<td>139,900</td>
<td>28.3</td>
<td>344,944</td>
<td>69.7</td>
</tr>
<tr>
<td>1989</td>
<td>613,679</td>
<td>147,468</td>
<td>24.0</td>
<td>448,688</td>
<td>73.1</td>
</tr>
</tbody>
</table>

*One county has accepted self-financing students since 1981, another in 1985, other in 1986.

developing the county hospital. The CHS had to take in self-financing students in order to survive. Before health reform, tuition was free for students, and a part of their living expenses would be supplied by the CHS, according to individual means. In the eighties however, the student had to pay tuition
fees and all their living expenses. Because the CMS also declined, there were few rural doctors going to the CHS for advanced study. The tuition fee that the CMS paid previously had dried up. The county health school was no longer available as a resource for improved subsidized training for rural doctors, but became a college for fee-paying students.

2. The result of health reform-----the entrance and the exit of self-financing students.

The majority of students the CHS enrolled were not targeted in terms of expected numbers. Nevertheless, unplanned enrollments to the CHS was encouraged by the government. It was a way of solving the CHS's financial difficulties as well as quickly addressing the problem of shortage of health personnel in rural areas (Chen Min Zhang, 1987,2). However, the research showed that each province and city already had a health school and 66.7% of counties had a health middle school. So province, city and county school, all wanted to enrol students in similar courses. This caused competition. It was obvious that the county health school could not win. Therefore, such schools could predict neither their intake of students nor their income.

There was also a limit to the economic capacity of students. At each of the 3 schools, the annual expenditure of students in 1989 was 1.28 times, 2.70 times and 1.50 times more respectively than the yearly average income of local peasants (Table 4.20). Even if some students wished to study in the CHS, they had to give up for financial reasons. Financial factors determined the likely source of students and also indicated that this reform measure was not suitable to poor rural
areas or was merely a interim measure. It could not become the basic means by which the lack of health personnel in the rural areas could be addressed.

Table 4.20. The economic situation of self-financing students in three county schools in 1989 (Yuan)

<table>
<thead>
<tr>
<th>County</th>
<th>Peasant's average income</th>
<th>Student expenditure</th>
<th>*Index</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Tuition fee</td>
<td>Living expense</td>
</tr>
<tr>
<td>A</td>
<td>953.4</td>
<td>502.6</td>
<td>720</td>
</tr>
<tr>
<td>B</td>
<td>455.8</td>
<td>571.7</td>
<td>660</td>
</tr>
<tr>
<td>C</td>
<td>822.0</td>
<td>510.8</td>
<td>720</td>
</tr>
</tbody>
</table>

*The index means the time that student's total expenditure accounted for peasant's average income.

It was not easy to assign these students to jobs. On investigating their future intentions, 30% of the self-financing students would like to conduct their own business after graduation, which means that they would become private doctors. 45% students preferred to go to township hospitals, but only 25% students intended to go to village health stations. Why would nearly half of the students want to go to township hospitals? The reason is that the staff who work in the township hospital have a regular salary from the government each month, and they are permanent. However, the township hospitals themselves were in a financially difficult position. They did not have the funds to pay these students although they needed them. The village health station, on the other hand, was able to pay them, but they did not want to go there. Therefore, 70% of students were difficult to assign.
4.4.3. Countermeasures

The CHS is a part of the national education system. It has trained many primary health workers since 1949. At present, it is experiencing financial difficulty, with a lack of resources. There are also problems in student enrollment and assignment. Below, some options for solving the predicament are considered.

1. Aim to try get more health investment from the County Health Bureau and county government.

2. Alter the way courses are organised by taking rural doctors in rotation for refresher courses.

There were a few barefoot doctors who had attained the status of rural doctors in these three counties, but the quality of rural doctors was not high. In the three counties 15% of rural doctors had primary level education; 64%, middle school; 15.4%, high school; 6% had further training in the CHS. The rural doctors could be encouraged to go to the CHS, by setting up an examination for them. Failure to pass the examination, would mean that they could not be certified as a rural doctor. A retirement system for elderly rural doctors could also be implemented. There are three merits in this course of action. First the quality of rural doctors is ensured. Second the CHS will have opportunities to train rural doctors. At present a majority of rural doctors are private doctors and they do not like to pay out of their own pockets to go to the CHS. The rural doctors who work in a collective village health station are not private doctors, but the village finds it difficult to support them to go to the CHS due to the collapse of the CMS. However, if an examination is enforced, the rural doctors are obliged to engage in advanced studies at the
CHS. The CHS can get income from training rural doctors. Third any vacancies produced by rural doctors failing the examination would be filled by the CHS students. This would solve students assignment problems.

3. Controlling the scale of the school in order to take into account actual local conditions, to readjust the curriculum and control the quantity of enrollment into school, the CHS should receive professional guidance from the provincial and civic health schools. This would have two useful outcomes—improving the CHS, and avoiding a conflict with provincial and civic health schools.

4.5 Investigation of the Objectives of County Health Enterprise Development

To investigate how people thought about the future of the county health enterprise, we interviewed 17 leaders, who included the president of the county, the director of the county health bureau and the director of the county hospital. 16 leaders were male, 1 female; their average age was 42 years old; 2 leaders graduated from middle school, the rest graduated from middle professional school or university.

4.5.1 Development of capital construction

The majority (82.4%) of leaders thought the most urgent need was to increase medical equipment for various county medical units. However, the 77% saw no urgent need to develop the number of hospital beds. 65% also agreed that an expansion of health personnel was unnecessary (Figure 4.5). On the other hand, 53% thought that the professional level of health staff should be improved.
4.5.2 County health system

In the development of the county health system, the first organization which needed to be strengthened was the county epidemic station. 47% of leaders held this opinion. The second organization which needed to be improved was the county hospital especially with regard to the quality of service, 30% of leaders held this opinion. A further 59% of leaders agreed that it was important to implement the economic responsibility system. The rest of the leaders did not agree or thought it was a makeshift measure. On constructing the CCTH, 82% of leaders approved of this, but they thought the scale of the CCTH should be 40 beds, 60 staff members and the CCTH should mainly concentrate upon Chinese traditional medicine. It is easy to understand why a
majority of leaders agreed with constructing the CCTH. From their point of view, it could make the county health system better to build the CCTH. Unfortunately they did not do the cost accounting and the analysis of cost-benefit, or know whether it was necessary to build the CCTH in their county.

The major focus in the development of county health care is preventive work, and it was this which was ignored during health reform. The development of rural preventive work was not promising. Many infectious diseases appeared after having been controlled or eradicated for example the schistosomiasis in Jiangxi province (see chapter 1).

The reform measure, the overall economic responsibility system could improve the county hospital and reduce the government subsidy in a short period. But approximately half of the leaders know this reform has some shortcomings. It encourages the county hospital to seek economic benefit blindly, for example by selling more medicines, and ignores social benefit such as the supply of satisfactory services for patients. An important measure to develop county health care should be to increase governmental subsidy.

4.5.3 Main problems in developing health work at county Level

According to the opinion of leaders interviewed, the most important problems were: a. lack of money; b. unreasonable prices as evidenced by the cost of some health service items, which were lower than the charges for patients; c. the rural residents were too poor to afford the medical expenses (Figure 4.6).
On the health management system side 53% of leaders thought that the main problem was the low salaries of health staff. Another problems mentioned were poor medical service quality and the low quality of management cadres. We also asked leaders "do you think that the county government subsidies will be increased in the future or not". Only one person answered "Yes", the remaining, sixteen leaders thought the government health investment would be kept at its current level or reduced a little allowing for inflation.

4.6 Summary of Chapter 4

Following the order of the analysis, there are five points which summarize the main problems in health care at county level now.
4.6.1 The uneven allocation of health resources

According to the findings of the study, there is an uneven distribution of health personnel between the urban areas and the rural areas, the medical expenditure of peasants was also far less than that of workers and cadres, and the peasants had to pay for health care themselves. By contrast, workers and cadres were covered by free health services. These freedoms produced 'moral hazard' which caused an increase in National Health Insurance's expenditure. Because of peasants' lower incomes they stayed in hospital for a shorter time than workers and cadres. This indicates that the peasants enjoyed fewer medical services than the workers and cadres. As a consequence, an inequality of access to health service between the urban residents and the rural residents occurred, which in turn produced health differentials. The mortality of rural residents was higher than that of urban residents. The gap between the rural areas and the urban areas was still increasing during health reform because of the privatisation of Chinese rural health system.

4.6.2 Effects of the economic responsibility system

During the health reform period, county hospitals introduced a system of market competition,– the economic responsibility system. As a consequence staff became more productive and the cost of the hospital was controlled. This solved some financial problems and the county hospital changed from being in deficit to a profit situation. But there were some awkward consequences. The county hospital profited by selling more medicines, added payments for tests and increased the charges
for services. This produced a heavy financial burden load rural residents and limited their utilisation. It also increased labor insurance expenditure and national health insurance. As a result, the latter equated approximately to the financial expenditure of county health enterprise. Therefore, 42% of county leaders thought the economic responsibility system was only a temporary answer to their difficulties. The market competitive system should not affect the quality and quantity of health services.

The best measure to improve the situation would be to increase the amount of government subsidy. Nevertheless, it seems impossible to do so on the basis of the present national resources. However, the government could control the health care market continuously, as in the UK 'the internal market' (see Chapter 1), where the government introduces the system of market competition but controls the health care market in such a way as to guarantee that people obtain basic health services.

Another way is to adjust the price of health services. This means charging patients at cost. There is no doubt that this would replace selling medicines as a means of making up the deficit of the county hospital, but it would produce a larger economic burden to the peasants, and would destroy the concept of social benefit in health. This also seems unfeasible. Finally, the charges for technical services (the operation fee) could be increased, to reduce the expenditure on medicines. The profit from technical service would then replace the profit from selling medicines. The merits would be that hospital income would increase, the burden on peasants would not increase, the real
value of doctors work would be embodied in the charges, doctors salaries would increase and wastefulness would be eliminated.

4.6.3 The feasibility of the CCTH

The policy of the Ministry of Public Health to build the CCTH in all counties had positive effects in improving Chinese traditional medicine and increasing accessibility to medical services for rural residents. However, our comparison of six CCTHs shows that it is unfeasible to build the CCTH in all counties, ignoring geographical distribution, the population and the wishes of residents, the limitation of national resources and lack of local health resources. The investigation showed that the profitability and efficiency of the CCTH was obviously lower than that of the CH. The CCTH had to rely on government investment and preferential policies to maintain its running.

No feasibility study was carried out before the decisions regarding CCTH were made. Among six CCTHs, half were constructing new buildings. The average investment was over 400,000 yuan in each hospital. Chong Yen county constructed a new CH building in 1987, and also a new building for the CCTH in 1988. Because of lack of money, construction work on both buildings had to stop. This was very wasteful. Where resources are limited, the county should concentrate upon the development of the department of Chinese traditional medicine in the CH. In this way full use of the health personnel and medical equipment of the CH can be made, and traditional medicine developed. In those counties which have already built the CCTH, the CCTH's internal structure could be adjusted or combined with the CH, to be managed jointly.
Briefly, the current policy appears to be waste of resources. The reason for its having occurred is because of the lack of consultation with society, community organizations and individuals. The whole process of policy-making is 'top-down' in China and has also been affected by the political change towards a free market system. To transfer a model of economic reform into the health care market without thinking of the social consequences, to destroy the CMS and encourage the privatisation of rural health care are all examples of policies applied top down regardless.

4.6.4 The future of the CHS

The development of rural health personnel was adversely affected by the health reforms. The barefoot doctors had been the main rural health force before health reform. But now, most of the barefoot doctors were replaced by private doctors. This produced a huge alteration to the structure of rural health personnel. At the same time, there was a lack of policies for stabilising rural health personnel. Many rural health personnel returned to the towns (Hu Zhao Ming, 1990,11). The results of this investigation have indicated that the number of health personnel in seven counties was lower than the average level for all counties. There was a particular shortage of middle level personnel. However, the greatest difficulty was the relatively low educational level of health personnel. The percentage of rural doctors who had graduated from university was only 5.6%. A strategy for solving the problem of providing adequately trained staff could be to enrol rural students, give them special training which is suitable to rural health work in the future and to assign them
back to the place where they come from (Jian Kang Bao, 1990, 11).

The county health school should play the main part in the training of rural health personnel, for, whilst civic and provincial health schools can train them easily, it is rather difficult to guarantee that students will be assigned to rural areas. Even if they are, most are working at county level, with only a few students in township hospitals and village health stations. By contrast, most of the students trained by the county health school were sent to township and village level. The county health school trained many barefoot doctors for the village health station during "the 1960's Cultural Revolution period". Since health reform, the development of the county health school has been slow. The biggest difficulty was that the county health schools had a financial crisis because government health investment was not enough to keep them open. So the county health school had to charge for tuition. According to our survey, this was an unsuccessful venture, because in poor rural areas, self-financing students were not able to pay their full tuition fee and their living expenses.

Numbers of students were also limited because of competition from the civic and provincial health schools. There were no effective assignment policies. Health schools should be reorganised away from enrolling self-financing students towards giving advanced study for rural doctors. To make a long term change in health personnel in the rural areas, the government needs to increase health investment to the county health school so as to stabilise the teaching staff, to improve the teaching quality and to provide adequate numbers of students and appropriate assignments.
4.6.5 Issues in preventive health and service quality

From the survey, it can be seen that the economic level and a majority of the health targets in seven counties were similar to the average of the whole country. There were basic health organisations in the seven counties. County health directors thought that the health organisation which most needed to be strengthened was the county epidemic station. After health reform, the rural preventive system was affected severely by the collapse of the CMS. Therefore it was not only the county epidemic station, but all three levels of the rural preventive system which needed to be strengthened.

From the health services point of view, the survey found that the county hospital has basically satisfied the demands of rural residents. The main focus in the development of the county hospital should not be placed by adding beds and health staff but improving medical service quality, by replacing out of date medical equipment and giving opportunities for staff to have access to advanced study. The reforms of health services, therefore, whilst giving some impetus to providing sustainable hospital services, have done little beyond this in supporting the expertise which is supposed to exist at county level, as the apex of the 3-tier system.
CHAPTER 5  THE CHANGES IN TOWNSHIP HOSPITALS

Township hospitals are units of the rural health service. They are responsible for guidance, health education and the monitoring of primary health work, such as public health campaigns, preventive services including immunisation, maternal and child health and family planning. Township hospitals occupy the axis position in the three tiers of rural health work.

5.1 General Conditions of 9 Townships

Nine township hospitals in Jiangxi province, and three township hospitals in Shen county of Zhejiang province were investigated.

First, three Jiangxi counties, Fenyi, ShangGao and Tonggu were surveyed according to their economic level (high, middle and low income). Second, three township hospitals were chosen by random sampling from each category making nine in all. These hospitals were compared on a number of criteria for the period 1986 to 1988. The main investigation included:

a. Health service, finance and health personnel condition in township hospital.

b. Standard and availability of medical equipment.

c. Attitudes of 20 township leaders and 162 township hospital staff.

d. The basic conditions of the township.

5.1.1 Geographic and economic conditions

One third of the townships are located in mountain areas, the others are located on low lying land. There are 128
villages and a total population of 188,017. The gross national product of the 9 townships was 180 million yuan. In 1988, average income per capita was 630 yuan, which places it at the middle level for Chinese rural areas (Table 5.1). The literacy rate of those over 12 years old was 6.6% in 1982. The school enrollment rate of those children below 14 years old was 73.6% in 1988.

Table 5.1 The basic condition of the nine townships in 1988

<table>
<thead>
<tr>
<th>Name</th>
<th>Population</th>
<th>Average income per head (yuan)</th>
<th>Financial income (ten thousands yuan)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.DongChun</td>
<td>11,784</td>
<td>466</td>
<td>19.0</td>
</tr>
<tr>
<td>2.YangQiao</td>
<td>39,654</td>
<td>578</td>
<td>77.1</td>
</tr>
<tr>
<td>3.HuZhe</td>
<td>16,424</td>
<td>669</td>
<td>101.0</td>
</tr>
<tr>
<td>4.TianXin</td>
<td>37,530</td>
<td>653</td>
<td>82.4</td>
</tr>
<tr>
<td>5.SiXi</td>
<td>36,070</td>
<td>700</td>
<td>116.0</td>
</tr>
<tr>
<td>6.JianJiang</td>
<td>21,876</td>
<td>710</td>
<td>59.7</td>
</tr>
<tr>
<td>7.SanDu</td>
<td>9,028</td>
<td>491</td>
<td>56.0</td>
</tr>
<tr>
<td>8.DaDuan</td>
<td>11,468</td>
<td>601</td>
<td>63.1</td>
</tr>
<tr>
<td>9.ErYuan</td>
<td>4,183</td>
<td>602</td>
<td>18.4</td>
</tr>
<tr>
<td>Average</td>
<td>20,890</td>
<td>630</td>
<td>65.9</td>
</tr>
</tbody>
</table>

5.1.2 Health condition in the 9 townships

The infant mortality rate was 32.8 per thousand, which was higher than the average 23.6 per thousand for all rural areas in 1988 (ZGWSTJ, 1988). The maternal mortality was 0.4 per thousand. 6.0% population had a safe water supply, which was low compared with the 20% in all China's rural areas in 1988 (CHSD, 1988). 'Safe water' means water which is disinfected and produced by a water factory or from a deep well. The rural residents were basically covered using private doctors' services. There were only 1.9% people enrolled in the Cooperative Medical System. There
were no CMS administrative unit nor any special investment in the CMS by township hospitals.

5.2 The Conditions of Township Hospitals

Since 1988, the township hospital management system has changed. In the past financial responsibility for the township hospital was transferred from the county health bureau to the township government. The county health bureau allocated health investment to the township government, then the township government allocated the money to the township hospital. The purpose of the reform is to enhance the management duty of the township government and to increase health resources. The township government can receive revenue from township industry to support the township health care system. In fact, these nine township governments did not allocate new health investment for the hospital. They were only able to transfer the money from the county health bureau to the township hospital. So this health investment from the county health bureau was the sole outside revenue source for the township hospital. It was very stringent and only covered 40% or 60% of staff salary. This did not satisfy the development needs of township hospitals. The township government was also in charge of the personnel matters within township hospitals.

5.2.1 The basic condition

In 1988, average fixed assets in the nine township hospitals were 129,027 yuan. The average number of staff and beds was 20 and 27 respectively. There was an average of 67 outpatients per day. An average of 958 inpatients per year was discharged from hospital (Table 5.2).
Table 5.2 The basic condition of the nine township hospitals in 1988

<table>
<thead>
<tr>
<th>Name</th>
<th>Fixed assets (Yuan)</th>
<th>Staff</th>
<th>Beds</th>
<th>Outpatients (year)</th>
<th>Patients of discharged from hospital (year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. DongChun</td>
<td>64,885</td>
<td>11</td>
<td>4</td>
<td>14,935</td>
<td>902</td>
</tr>
<tr>
<td>2. YangQiao</td>
<td>140,000</td>
<td>29</td>
<td>32</td>
<td>23,910</td>
<td>1,285</td>
</tr>
<tr>
<td>3. HuZhe</td>
<td>65,000</td>
<td>18</td>
<td>12</td>
<td>21,871</td>
<td>452</td>
</tr>
<tr>
<td>4. TianXin</td>
<td>331,890</td>
<td>49</td>
<td>45</td>
<td>27,350</td>
<td>2,141</td>
</tr>
<tr>
<td>5. SiXi</td>
<td>370,671</td>
<td>56</td>
<td>50</td>
<td>41,129</td>
<td>2,858</td>
</tr>
<tr>
<td>6. JianJiang</td>
<td>84,077</td>
<td>20</td>
<td>5</td>
<td>10,312</td>
<td>123</td>
</tr>
<tr>
<td>7. SanDu</td>
<td>13,939</td>
<td>10</td>
<td>2</td>
<td>23,140</td>
<td>34</td>
</tr>
<tr>
<td>8. DaDuan</td>
<td>77,781</td>
<td>29</td>
<td>12</td>
<td>28,637</td>
<td>507</td>
</tr>
<tr>
<td>9. ErYuan</td>
<td>13,000</td>
<td>24</td>
<td>15</td>
<td>27,400</td>
<td>320</td>
</tr>
<tr>
<td>Average</td>
<td>129,027</td>
<td>27</td>
<td>20</td>
<td>24,298</td>
<td>958</td>
</tr>
</tbody>
</table>

YangQiao, TianXin, SiXi and DaDuan township hospitals are key township hospitals, which means these hospitals receive more money and better medical equipment from the county health bureau and township government than common township hospitals. The scope of service in the key township hospital covered several townships. More comprehensive services are provided by the key township hospital than the common township hospital. Table 5.3 shows that

Table 5.3 Comparison of key township hospital with common township hospital

<table>
<thead>
<tr>
<th>Items</th>
<th>Key hospital (average)</th>
<th>Common hospital (average)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed assets (yuan)</td>
<td>230,085</td>
<td>48,180</td>
</tr>
<tr>
<td>Staffs</td>
<td>41</td>
<td>17</td>
</tr>
<tr>
<td>Beds</td>
<td>35</td>
<td>8</td>
</tr>
<tr>
<td>Patients (per year)</td>
<td>30,256</td>
<td>19,532</td>
</tr>
<tr>
<td>Discharge from hospital (per year)</td>
<td>1,698</td>
<td>366</td>
</tr>
</tbody>
</table>
the fixed assets, the staffs, the number of beds and the number of patients treated were greater in key hospitals than in the common township hospitals.

An analysis of income shows that average income from selling medicine was the main income of township hospitals, which accounted for 66.25% of total income. Health investment from the county health bureau accounted for only 7.19% of total income. An analysis of outpatient and inpatient services shows that the fees from the former accounted for 57.54% of medical income; the fees from the latter, 22.37%. This analysis reveals two characteristics of the health services in township hospitals; firstly, the main health services supplied were outpatient services; secondly, the main income was derived from selling medicine.

Comparing expenditure with income gives similar results. Medicines are also the main item of expenditure, accounting for 62.6% of the hospitals' total expenditure. In contrast, expenditure for staff training and basic hospital repair and construction work was very small, accounting for 0.15% and 1.80% respectively. Expenditure on retired staff accounted for 2.06% of the total. These payments do not bring any direct benefit to the hospital. Other 'expenditures' including administrative fees accounted for 17% (more detail financial analysis to be seen at the 5.3).

The running of township hospitals relied on too few staff. Most health services were supplied by two or three doctors. For example, in SanDu township hospital, one doctor did almost all the medical work. Self financing patients could choose their own
doctors under the responsibility system. The more patients a doctor treats, the more money he gets. Technically competent doctors would be more likely to be chosen, and consequently would bear a greater share of the work.

5.2.2 The quality and quantity of medical facilities

The equipment of township hospitals was very limited. Between them, the nine township hospitals had 8 X-ray machines, 2 centrifuges, 4 ECG, 3 ultrasound scanner type A and 1 type B, 5 microscopes and 2 refrigerators. In addition, there were no regulations to monitor the use of fixed assets and no policy for calculating depreciation. The township hospitals had no enthusiasm or responsibility to improve the management of fixed assets and medical facilities. The result was an invisible deficit of fixed assets.

In 1988, township hospitals spent an average 2,427 yuan to buy new medical equipment. Maintenance expenditure was on average 811 yuan per hospital. This indicates that township hospitals can not depend on themselves to get good medical equipment because most health investment was spent on staff salaries and there was no special investment from the county health bureau and township government for buying new equipment.

5.2.3 The building and development the hospitals

When interviewed, nearly all leading cadres at the township level said that hospital facilities should be increased, but less than half felt that it should be the responsibility of the township government to support the hospitals, leading to expansion, capital construction, and so forth (more detail to be
seen at the 5.5.3). It is very difficult to increase health investment for township hospitals. One possibility might be to use fixed assets to develop the township hospital. If we compare fixed assets utilization in the nine township hospitals (the factors of medicine and health investment are excluded), we see that their average income was 0.58 yuan from 1.0 yuan fixed assets, but the expenditure was 0.71 yuan to maintain 1.0 yuan fixed assets. The deficit is 0.13 yuan. This is a common problem in the township hospitals in Chinese rural areas. The property of township hospital is of less and less value as time goes by.

An analysis of hospital construction shows the same problems. All of the hospitals in the study were built in the sixties and seventies, as part of the hospital expansion at that time. Now the fabric was shabby, and as many as a third of the buildings had been given over to staff accommodation.

5.2.4 The structure and quality of health personnel

In the nine township hospitals in 1988, the number of doctors was greater than the number of nurses, the proportion was 2.02:1.00. According to guidelines issued by the Ministry of Public Health "The Size of Health Personnel in Hospitals" in 1978, the proportion of doctors to nurses should be 1:2 (Peng Yui Chong, 1988,3). These were not enough nurses for the township hospital. At first glance, the number of senior doctors looks very promising in terms of expertise; however most of these doctors did not have any higher medical education but had been promoted as a result of long service. It is very difficult for township hospitals to recruit a doctor who has graduated from a university
Table 5.4 The education level of health personnel in 1988

<table>
<thead>
<tr>
<th>Level</th>
<th>Number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undergraduate (5 years)</td>
<td>1</td>
<td>0.62</td>
</tr>
<tr>
<td>Undergraduate (3 years)</td>
<td>13</td>
<td>8.02</td>
</tr>
<tr>
<td>Middle health school</td>
<td>53</td>
<td>32.72</td>
</tr>
<tr>
<td>High school</td>
<td>19</td>
<td>11.73</td>
</tr>
<tr>
<td>Middle school</td>
<td>54</td>
<td>33.33</td>
</tr>
<tr>
<td>Primary school</td>
<td>22</td>
<td>13.58</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>162</strong></td>
<td><strong>100.00</strong></td>
</tr>
</tbody>
</table>

There was only one such doctor among the 9 townships (Figure 5.1, Table 5.4).
At the end of 1988 the statistics on staff turnover showed a tendency for health personnel to flow outwards rather than joining the hospital staff. A further analysis of staff changes over a 5-year period showed that more people left the township health service than joined it (Table 5.5).

Table 5.5. The employment flow of health personnel over 5 year period

<table>
<thead>
<tr>
<th>Name</th>
<th>Entering</th>
<th>Leaving</th>
<th>Entering-Leaving</th>
</tr>
</thead>
<tbody>
<tr>
<td>Senior Doctors</td>
<td>9</td>
<td>23</td>
<td>-14</td>
</tr>
<tr>
<td>Junior Doctors</td>
<td>12</td>
<td>25</td>
<td>-13</td>
</tr>
<tr>
<td>Senior Nurses</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Nurses</td>
<td>19</td>
<td>16</td>
<td>3</td>
</tr>
<tr>
<td>Other</td>
<td>11</td>
<td>12</td>
<td>-1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>51</strong></td>
<td><strong>76</strong></td>
<td><strong>-25</strong></td>
</tr>
</tbody>
</table>

Township hospitals had no control over personnel matters. Some non-professional people were employed at the hospital. Some of the doctors had previously retired, but were now re-employed to plug the gaps left as younger doctors quit the health care system, either to set up private practice, or to leave medicine altogether.

Therefore, we have a situation where quality of service may be affected by relatively modest educational standards, and by the degree of staff turnover.

5.3 The Crises of Development in Township Hospitals During Health Reform

As the above analysis shows, township hospitals were developing many difficulties and becoming poorer and poorer. Below, the reasons for their predicament and some ways in which it
might be brought to an end are examined. To the nine township hospitals in Jiangxi province were added three township hospitals in the richer Zhejiang province. This was to balance out the whole sample and make it representative of all types of economic conditions.

5.3.1 The analysis of management within township hospitals.

If fixed assets are included, the revenue and expenditure of township hospitals approximately balanced in 1986 (+1.027), but by 1988 showed a slight deficit (0.972). Although, between 1986-1988 the average total income of the township hospital increased by 49.3%, total expenditure also increased by 57.7%. Net income decreased by 2.6 times. The health investment from government increased 44.4% (Table 5.6). But the proportion of total income from government investment decreased from 10.0% in 1986 to 9.6% in 1988. The profits from selling medicine increased by 63.5% from 1986 to 1988, which added to income much more dramatically than health investment from the government. This suggests that improving management in township hospitals by transferring responsibility to township government did not extricate hospitals from their predicament. In other words, the

Table 5.6 The financial condition of township hospitals

<table>
<thead>
<tr>
<th>Year</th>
<th>Income (Yuan)</th>
<th>Expenditure (Yuan)</th>
<th>Net income (Yuan)</th>
<th>Ratio of revenue to expenditure</th>
<th>Health investment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1986</td>
<td>130,977</td>
<td>127,583</td>
<td>3,394</td>
<td>1.027</td>
<td>13,040</td>
</tr>
<tr>
<td>1988</td>
<td>195,604</td>
<td>201,139</td>
<td>-5,535</td>
<td>0.972</td>
<td>18,828</td>
</tr>
<tr>
<td>Increase (%)</td>
<td>49.3</td>
<td>57.7</td>
<td>-263.1</td>
<td>-5.4</td>
<td>44.4</td>
</tr>
</tbody>
</table>

* This is the average financial condition in township hospitals. It includes fixed assets. The rate of depreciation is 2% (Guo Zhi Heng 1983).
root of the problem in township hospitals is not due to faulty management, but to some objective economic factors.

Looking at the standard patient charge, if we deduct the proportion derived from government and that which comes from selling medicine, and consider only the benefit from medical service, township hospitals could recoup 55.8% of the cost. The average deficit of township hospitals reached 24,122 yuan in 1986. But in 1988, the township hospitals recouped only 46.3% of their costs from patient charges. The deficit has increased to 48,025 yuan which was double to that of 1986. Even though government subsidy is included, the average deficit of the township hospital still increased from 11,082 yuan in 1986 to 29,197 yuan in 1988. This indicates that township hospitals' losses were increasing. Therefore, in 1988, township hospitals had to make up 60.8% of their deficit by themselves. Why was the situation getting worse? One reason lay in the complex relationship between fixed charges set by the government for each patient's health, and the costs to the township hospital of providing such care. The governmental standard charge for patients is lower than the costs. This is main reason why the township hospitals suffer deficit. Another cause has already been referred to - since its deliberate limitation health investment from government has increased only a little. The percentage of health investment which made up the deficit in township hospitals decreased year by year. Finally, medical inflation took its toll—the cost of medicine, and medical salaries rapidly increased, the latter in an attempt to offset the wastage of staff.
5.3.2 Methods of financial management in township hospitals

In 1988, the average increase of total income in township hospitals was 64,627 yuan, an increase of 49.3% compared with 1986. Of this amount, 91.1% was due to the enhancement of medical income in hospitals, 8.9% was due to the increase of health investment from government. The township hospital chose to increase its medical income because there was no alternative means of making up the deficit. Analysis of this increase shows that 76.8% was due to selling medicine, 10.1% was due to adding other items of service like examination and treatment to the patient charge. Table 5.7 shows these to be the two main ways of making up the deficit in township hospitals (Table 5.7).

Table 5.7 The causes of income growth in township hospitals

<table>
<thead>
<tr>
<th>Items</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total money</td>
<td>100.0</td>
</tr>
<tr>
<td>Selling medicine</td>
<td>76.8</td>
</tr>
<tr>
<td>(Chinese medicine)</td>
<td>(62.3)</td>
</tr>
<tr>
<td>(Western medicine)</td>
<td>(14.5)</td>
</tr>
<tr>
<td>Examination and treatment fee</td>
<td>10.1</td>
</tr>
<tr>
<td>Health investment from government</td>
<td>8.9</td>
</tr>
<tr>
<td>Registration fee</td>
<td>3.0</td>
</tr>
<tr>
<td>Other</td>
<td>1.2</td>
</tr>
</tbody>
</table>

If the income from Chinese traditional medicine and Western medicine are compared, the income from Chinese medicine is much higher. From 1986 to 1988, the average number of out-patient attendances decreased by 5.9% (from 23,964 in 1986 to 22,550 in 1988), but the average gross income from selling medicines
increased by 62.3% (from 67,032 yuan in 1986 to 108,784 yuan in 1988) in the out-patient department. The average prescription value went up 72.1%, from 2.80 yuan in 1986 to 4.82 yuan in 1988. Inpatient charges also went up.

However, it is difficult to understand why the strategy of selling medicines was used to make up the deficit in township hospitals. According to this investigation, the rate of profit from medicine sales was 21.2% in 1988. In order to make up the average 29,197 yuan deficit, it is necessary to sell 137,000 yuan of medicine. The average total expenditure of township hospitals increased by 73,556 yuans from 1986 to 1988 (57.7%), of these expenditures, only 12.8% was used for staff welfare, 18.4% for medical instrument repair, 57.0% was spent on buying medicines for resale.

5.3.3 The problems of development in the township hospitals

It is government policy that the charge for patients is lower than the cost. Also health investment by government is lower than the deficit. This means that the township hospital which has average fixed assets of 126,000 yuan must fall into debt of approximate 30,000 yuan per year.

In recent years, hospitals have implemented a series of reform methods, for instance, the director has management responsibility for the hospital, and prices have been made more rational. The purpose of these reforms was to improve hospital management in order to solve financial crises. But these reform methods could only reduce waste caused by poor management. They were inadequate for any broader purpose. The paradox for directors
is that the more and better medical services they produced, the greater the deficit.

The financial condition of township hospitals has become one of means by which directors' achievements are evaluated, and the achievement of a balance of income and expenditure has been the directors' target. But there are problems in trying to reach it. As shown above, increasing service quantity is not the answer. The township hospitals have sell more items of service in the clinic and more medicine, especially Chinese traditional medicines and expensive medicines. In these sales, the township hospitals are in competition with city and county hospitals and their medical facilities are limited in comparison. During a period when patient attendances stayed constant, or in some cases actually decreased, the income from selling medicine increased 62.3% in the outpatient departments and 52.9% in the in-patient departments. When the wholesale price of medicines went up, the profit margin stayed the same and the cost was passed on the the patient. Of course the doctors liked to give big and expensive prescriptions.

The question as to how the problem of the solvency of township hospitals is to be addressed has two possible theoretical answers. One would be to ask for more money from government. This depends on governmental financial resources. Another is to raise the cost of medical services to patients. But this method will add to the patient's financial burdens.

The ability of the national economy to undertake the development of health care enterprise has not been given full consideration. The WHO standard is that countries' total health
expenditure should account for 5% of GNP. In China, total health expenditure accounted for approximate 0.5% of GNP (Zhang Zhi Kuan, 1988), and less 3% of national financial expenditure (Zhou Shou Qi, 1988). The proportion of health investment from the national budget was very small. Looking at this from the other side, the health expenditure of peasants only accounted for 3% of their net yearly income (Du Le Xun, 1988). Both government and peasants have a potential to pay for the supply of health resources. The key to solving the insolvency of the township hospitals is that the government must pay more attention to developing them. This can improve the national economy, because the value of a healthy population is far greater than any health investment by government. In addition, people should be prepared to pay more for their medical services. Both these approaches are good in theory, but they are very difficult to implement since they depend on the national economy and the level of understanding of both village and township governments, and peasants themselves. This is not likely to happen in a short period of time. Therefore there are some specific crises developing:

1. The false prosperity of township hospitals. It was true that township hospitals increased their income by selling medicine and giving patients more tests. They used the surplus to give increased welfare benefits to staff and renew and maintain medical equipment. Yet this is a faulty strategy to combat insolvency. In the first place, it increases medical costs and wastes health resources. Although there was the average 29,197 deficit in township hospitals in 1988 (including health investment
from government and deducting income from selling medicines), the income and expenditure would balanced if the government should increase this amount of health investment for township hospitals, rather than the hospital relying on medicine sales. In the second place, it adds to the financial burden on patients. The false prosperity that results from selling medicine gives the government and the Ministry of Public Health the erroneous impression that township hospitals could continue to exist even if the government failed to increase or even reduced its subsidy.

2. If supervision of the hospital is strengthened and controls on the price of medicines are instituted, township hospitals cannot rely on sales of medicine to survive, nor can they compete with larger hospitals. Therefore they may go out of business altogether.

5.4 A Comparison of Reformed and Unreformed Township Hospital

Seven of the nine township hospitals had introduced a system of market competition which was the system of economic responsibility in 1988. The exceptions were DongChun and HuZhe. This means these seven township hospitals were reformed. To describe a hospital as 'reformed' means that it is independent of the county health authorities or township government; such hospitals make their own decisions about staffing, budgeting and administration. Their staff are under contract for specified tasks and hours of work, and the hospitals themselves are under contract to the township authorities to provide medical services. Unreformed hospitals still received their subsidies from the county health authorities or township.
government and had their deficits made up from the county and the township governments.

The introduction of responsible management was intended to bring a new lease of life to enterprises. This has been one of the most important and widespread reforms to be carried out in the health system especially in township hospitals. The managerial method of township hospitals is now similar to that which pertains in other enterprises—-that of economic responsibility. We investigated the difference between reformed township hospitals (RTH) and unreformed township hospitals (URTH) in 9 township hospitals.

5.4.1 The economic effect of the reform

The ratio of revenue to expenditure went down from 1.052 in 1986 to 0.982 in 1988 in the RTH. The net income reduced 1.6-fold in the RTH. It meant that the RTH was in deficit. On the contrary, the net income increased 0.67-fold in the URTH. From the accounting viewpoint, the method of responsible management may not bring much benefit for township hospitals. What is the reason? It is because the health investment of the RTH increased only by 12.8%, which was much lower than the 73.3% of the URTH growth rate (Table 5.8). The URTH got strong financial support from the government.
Table 5.8 Comparison of average revenue and expenditure between reformed and unreformed township hospitals

<table>
<thead>
<tr>
<th>Items</th>
<th>Reformed</th>
<th>1986</th>
<th>1988</th>
<th>%</th>
<th>Unreformed</th>
<th>1986</th>
<th>1988</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average total income (yuan)</td>
<td>138,679</td>
<td>1986</td>
<td>211,686</td>
<td>52.6</td>
<td>97,077</td>
<td>1986</td>
<td>139,387</td>
<td>43.6</td>
</tr>
<tr>
<td>Expenditure</td>
<td>131,772</td>
<td>1986</td>
<td>215,619</td>
<td>63.6</td>
<td>90,108</td>
<td>1986</td>
<td>127,717</td>
<td>41.7</td>
</tr>
<tr>
<td>Net income</td>
<td>6,907</td>
<td>1986</td>
<td>-3,933</td>
<td>-156.9</td>
<td>6,969</td>
<td>1986</td>
<td>11,670</td>
<td>67.5</td>
</tr>
<tr>
<td>Ratio of revenue to expenditure</td>
<td>1.052</td>
<td>1986</td>
<td>0.982</td>
<td>-6.3</td>
<td>1.077</td>
<td>1986</td>
<td>1.091</td>
<td>1.3</td>
</tr>
<tr>
<td>Health investment</td>
<td>15,941</td>
<td>1986</td>
<td>17,988</td>
<td>12.8</td>
<td>10,134</td>
<td>1986</td>
<td>17,560</td>
<td>73.3</td>
</tr>
<tr>
<td>Ratio of revenue to expenditure deduction health investment</td>
<td>0.931</td>
<td>1986</td>
<td>0.898</td>
<td>-3.5</td>
<td>0.965</td>
<td>1986</td>
<td>0.954</td>
<td>-1.2</td>
</tr>
<tr>
<td>Income from selling medicine account for average total income(%)</td>
<td>66.86</td>
<td>1986</td>
<td>68.68</td>
<td>2.7</td>
<td>71.04</td>
<td>1986</td>
<td>72.01</td>
<td>1.4</td>
</tr>
<tr>
<td>Rate of profit from selling medicine(%)</td>
<td>19.4</td>
<td>1986</td>
<td>20.0</td>
<td>3.1</td>
<td>22.1</td>
<td>1986</td>
<td>27.6</td>
<td>24.8</td>
</tr>
</tbody>
</table>

Medical service charges in township hospitals cover only about half of their costs. Their deficit consequently will become gradually heavier. The percentage by which patient charges covered the cost reduced from 55.4% in 1986 to 51.2% in 1988 in the RTH (-7.6%). In the URTH, this percentage reduced from 53.5% to 43.0%, (-18.2%) (Table 5.9). The main reason for the change is that the increase of medical service charges in the RTH was more rapid than that in the URTH. This will be discussed below. Another reason is that the economic responsibility system may have reduced unnecessary medical service costs. This indicates that the
economic responsibility system in township hospitals can not stop the deficit, but it can improve the economic atmosphere of township hospitals.

Table 5.9 Comparison of medical service revenue and expenditure in township hospitals*

<table>
<thead>
<tr>
<th>Items</th>
<th>Reformed</th>
<th>Unreformed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1986 1988 %</td>
<td>1986 1988 %</td>
</tr>
<tr>
<td>Income</td>
<td>45964 66309 44.3</td>
<td>28155 39017 38.8</td>
</tr>
<tr>
<td>Expenditure</td>
<td>54107 94324 74.3</td>
<td>33610 49036 45.9</td>
</tr>
<tr>
<td>Net income</td>
<td>-8143 -28105 244.0</td>
<td>-5495 -10019 82.3</td>
</tr>
<tr>
<td>Ration of revenue to expenditure</td>
<td>0.850 0.707 -17.3</td>
<td>0.837 0.796 -4.9</td>
</tr>
<tr>
<td>Percentage charge covering cost</td>
<td>55.4 51.2 -7.6</td>
<td>53.5 43.8 -18.2</td>
</tr>
<tr>
<td>Percentage of compensation of government</td>
<td>66.2 39.1 -40.9</td>
<td>64.8 63.7 -1.7</td>
</tr>
<tr>
<td>Percentage of compensation of hospitals</td>
<td>33.8 60.9 80.2</td>
<td>35.2 36.3 3.1</td>
</tr>
</tbody>
</table>

*The income and expenditure of selling medicine have been deducted from total of income and expenditure. The income included the health investment from government.

As a result of the reforms, the responsibility of government subsidy to the RTH reduced by 40.9% in two years, which meant that the RTH had to work harder and harder to make up its deficit, which increased from 8,143 yuan in 1986 to 28,015 yuan in 1988, (+2.44). The government subsidy in the URHT changed very little, and consequently there was only a small increase in the deficit (+0.82).
As we can see from the above analysis the management of economic responsibility can lighten the burden of government because the health investment from government increased much less in the RTH than the URTH.

5.4.2 The different methods of making up a deficit in two kinds of hospital

This section describes the methods used by the RTH and URTH in balancing income and expenditure. Between 1986-1988, an average total income of the RTH increased by 53% from 138,679 yuan to 211,686 yuan, that of the 44% in the URTH (97,077 yuan to 139,387 yuan) (Table 5.8). It seemed that reforms were working, and the government could afford to reduce its investment in township hospitals.

The main income increases came, predictably, from selling medicine (72.1% in the RTH and 69.2% in the URTH) (Table 5.10).

Table 5.10 Comparison of the cause of the increased of total income between reformed and unreformed township hospitals in 1986-1988

<table>
<thead>
<tr>
<th>Items</th>
<th>Reformed</th>
<th>Unreformed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increment (yuan)</td>
<td>73,007</td>
<td>42,310</td>
</tr>
<tr>
<td>Percentage of increment (%)</td>
<td>100.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Selling medicine</td>
<td>72.1</td>
<td>69.2</td>
</tr>
<tr>
<td>The test and treatment fee</td>
<td>8.9</td>
<td>13.4</td>
</tr>
<tr>
<td>Registration fee and hospitalization expenses</td>
<td>3.3</td>
<td>-1.4</td>
</tr>
<tr>
<td>Government Health investment</td>
<td>2.8</td>
<td>17.6</td>
</tr>
<tr>
<td>Other</td>
<td>12.9</td>
<td>1.2</td>
</tr>
</tbody>
</table>

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The income increase happened despite only a slight increase or even decrease of the quantity of medical services in township hospitals. For example, outpatient visits only increased by 1.6% in 1986-1988 in the RTH. In the URTH, it decreased by 21.5%. As indicated above, the increase in medicine sales offset the decline in services. Income from medicine sales increased by 72% and average prescription price increased from 2.88 yuan in 1986 to 4.8 yuan in the RTH in 1988. Income from medicine sales increased by 41% in the URTH as well. Expenditure of medicine on inpatients at the RTH was double that of the URTH (36 yuan compared with 18 yuan). The RTH was more likely to stress medicine sales. It indicated the RTH and the URTH also sought profit from selling medicine. But the RTH paid more attention to this point than the URTH did. This can be understood, because the duty of making up the deficit in the RTH was more pressing than that in the URTH. The RTH has to use many methods to get more financial support in order to solve its deficit. There is no doubt that there were some hazardous factors among these methods.

Given the above statements, it is not surprising that there were more complaints from patients in the RTH. When interviewed, there were significant differences in patient responses with the majority of patients finding more satisfactory care in the URTH rather than the RTH (Table 5.11).
Table 5.11 Patient satisfaction with township hospitals

<table>
<thead>
<tr>
<th>Patient type</th>
<th>Reformed (%)</th>
<th>Unreformed (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Satisfactory</td>
<td>Unsatisfactory</td>
</tr>
<tr>
<td>1. Out-Patient</td>
<td>38.3</td>
<td>84.4</td>
</tr>
<tr>
<td></td>
<td>61.7</td>
<td>15.6</td>
</tr>
<tr>
<td>2. In-Patient</td>
<td>28.3</td>
<td>94.7</td>
</tr>
<tr>
<td></td>
<td>71.7</td>
<td>5.3</td>
</tr>
</tbody>
</table>

$X^2 = 41.9$  P<0.01  $X^2 = 91.9$  P<0.01

5.4.3 Analysis of pros and cons of the reformation

The system of economic responsibility can improve the productive efficiency of enterprises in both rural and urban areas. But its wholehearted transfer into the township hospital is certain to have some undesirable side effects, as has been shown.

By implementing the system of economic responsibility, township hospitals indeed made a profit. The RTH paid more attention to maintaining and replacing its fixed assets, with an increased spending on building of 25% at the RTH compared with minus 3.5% at the URTH. The RTH also seemed to have a less bureaucratic system of patient throughout—although there comes a point where this produces diminishing returns. Regarding salaries and the social welfare of staff, staff in the RTH increased their salaries on average by 29 yuan in two years. In the URTH, staff salaries were raised by average 27 yuans. So it is wrong thesis to criticize the RTH to charge patient more and unreasonable for staff to increase their salaries and social welfare.

There are, however some disadvantages:

1. The system of economic responsibility encourages...
township hospitals to obtain more profits from selling medicines. However, selling more medicine does not necessarily improve medical service quality.

2. It transfers the economic burden to the patients. The system does not ensure that patients can get better quality and more medical services due to paying more.

3. The RTH was still able to balance revenue and expenditure after the reduction of government health investment. This fact confuses many people including the leaders of health sections. It allows them to believe that without an increase or even with a decrease in government health investment, the RTH is able to survive. Yet, the more medical services which are provided, the poorer the hospital becomes.

4. Actually, the charges for medicines at present in the RTH are too high. The government of price control severely regulates medicine prices, this will produce more running difficulties for township hospitals.

5.5 The Attitudes towards Changes of the Township Leaders and the Staff in Township Hospitals.

To study the attitudes of people towards the changes, we chose 20 township leaders by random sampling in 9 townships. They included directors and vice directors of townships and Party secretaries of townships. Their average age was 38.4 years old, and the educational level was that 3 leaders graduated from middle school; 9 leaders, high school; 8 leaders had experienced three to five years university education. We investigated also 162 technical staff in 9 township hospitals, which accounted for 66% of
total health staffs. These staffs included a few administrative leaders, such as 5 directors of township hospital. Their average age was 32.5 years old. Their educational level and title of profession is shown in Table 5.4 and Figure 5.1.

5.5.1 Managerial problems in the township hospitals

1. Under the reform policy, the township government was now in charge of the township hospital; the financial responsibility for the township hospital had been transferred from the county health bureau to the township government. 35% leaders approved this policy, 35% leaders did not. 25% leaders thought it was an expedient measure. Of the technical health staff, only 5.6% approved this policy; 18.5%, objected; 21.6% thought it was an expedient measure; the rest of them did not have any particular view. The number of technical health staff who approved of the health reform was so small that it suggests that the reform policy did not bring more benefit for them. In actual fact, these nine township hospitals had not received any extra money from the township government. The number of leaders who approved the reforms was not large. This is because they have almost no experience of implementing health policy, since until recently the township hospitals were under the administrative direction of the County Health Bureau. Hospital management is a new, and probably difficult task. For example, when we asked them to give an evaluation of the overall working of township hospitals, 35% of leaders had no idea because they were not familiar with health work. There is no clear answer as to how China's 47,529 township hospitals will continue to function (ZGWSTJ, 1988). The government
policy regarding township hospitals seems to be to allow them to sink or swim, depending on their relationship with their local authority. Such an approach however does not involve a rational assessment of local health need, and bypasses any form of health planning.

2. The economic responsibility system in the township hospital: the health staff in reformed township hospitals evaluated their income, amount of work and its quality and the competition for patients with village health stations after health reform. Nearly half of the staff thought that their income was unaffected, and only a small number (4.3%) thought that their income had increased a lot. However, the majorities (83%) thought that the amount of work they did had increased (Figure 5.2). 57% of staff thought that the quality of medical work was improved, but this view was not shared by patients (Table 5.11). 47% of staff thought there was now competition for patients with the village health station. In summary, 46% staff thought that the township hospital should end the economic responsibility system; 9.3%, did not agree to end it; 44.4%, had no comments (Figure 5.3). So the economic responsibility system may not be suitable for the township hospital. The township hospitals are limited by their lack of facilities, and cannot compete with the county and city hospitals in the range of saleable examinations they have to offer. From the point of view of geographical accessibility, they are not as good as the village health station. They have difficulty in getting enough self-financing patients. In the staffs mind, the economic responsibility system did not bring much benefit.
Figure 5.2 The Income and Amount of Work of Staff after Health Reform

Income

Amount of Work

Figure 5.3. General Evaluation of the Staff to Reformed Township Hospital

Cancellation 46%

Approbation 9%

Don't care 44%
5.5.2 The working attitude of staff

We interviewed the staff about their attitudes to their work, their income and the future development of the township hospital. The most striking finding was that 80.1% wanted to leave the township hospitals. 52.5% said that their incomes were less than those of peasants in the surrounding countryside and less than rural doctors in the villages, who could at least earn from sideline production. Not all of their income was guaranteed as before. When questioned about possible future developments, 34% of staff were optimistic that the government plans for township hospitals would improve them, but most were pessimistic, or did not care. These attitudes made a notable impact on the development of the township hospital, which caused many people to leave their jobs.

5.5.3 The development of township hospitals

When questioned about the main problem in developing township hospitals, 70% leaders held the opinion that the scope of township hospitals should be enlarged, but that the key is to improve the quality of service and increase medical equipment. They saw the problems in developing the hospital, as firstly capital shortage; secondly, poor management; thirdly, patient costs are fixed, but the charges are less than covering costs. Health staff thought the first problem was poor management, the second was shortage of money. Although the opinions of leaders and staffs were different as to priority, both agreed that the shortage of money and lack of efficient management were the main problems. Looked at from the outside, it is the lack of confidence
of both staff and leaders which makes innovation and development difficult.

5.6 Summary of Chapter 5
5.6.1 The crises of township hospital development

Government policy, as espoused in the State Council document, was to render hospitals, as far as possible, independent of government investment apart from that already received and to achieve expansion and financial solvency. As we have seen, the township hospital's main approach to doing this was to increase medicine sales and medical tests like X-ray or pathology tests. The real paradox lies in the fact that seeing more patients merely increases the hospitals operating costs, and therefore, when patient costs are fixed, the deficit. Theoretically, the government could make up the deficit by spending a little money (for example, 29,197 yuan), but now township hospitals have to spend several times or several ten times the amount spent by government health investment to make up this deficit, which is wasteful and costly to patients. Further, deriving income from increased medicine sales suggests that there is an infinite demand; in reality however income derived from sales of medicine gives an air of false prosperity, promotes the impression that township hospitals are more solvent than they really are, and inhibits further subsidy from government, either directly or through the township government.

In addition, township hospitals are the second level of the health network. Their medical equipment and techniques are not as good as those of the county hospital; and they are less
accessible than the village health station. With the collapse of the CMS, patients were no longer referred to township hospitals. The township hospitals lost out to private doctors who were also more geographically accessible. Thus the number of patients fell. Despite a reform in their management systems, i.e. the transfer of the financial responsibility for the township hospital from the county health bureau to the township government, the aim of which was to receive subsidies from both, the majority of townships have failed to invest in their hospital. They say they do not have enough money. So township hospitals have become financially insolvent because of policy deficits. Therefore we should realize that policy-making is very important in the development of Chinese health care, but the process is controlled by a few officials, and advice is rarely sought from any other sectors. This makes unfeasible health policies. Community participation in policy-making, which is the basis of the WHO model, does not exist in China.

We have to recognize the fact that township hospitals have worked hard in making up their deficits. The system of market competition did indeed bring vigour to township hospitals. Initially, most moved from a deficit to a profit. Doctor's motivation improved, and hospital costs were controlled. This system reduced the financial burden of the government and perfected the management of hospitals in some degree.

But the economic responsibility system forces the township hospital to pay a lot more attention to profit. Suffering from the lack of health investment from government, the 'reformed' township hospitals relied strongly upon medicine sales and
clinical tests compared to the 'unreformed' township hospitals. Leaders of the reformed township hospital paid more attention to economic benefit and economic targets. They have to use these methods to guarantee an economic benefit that is used only for making up the deficit and paying running costs, rather than improving the quantity and quality of medical services. As a result society and patients are not satisfied with the economic responsibility system and find it difficult to understand this health reform.

5.6.2 Sources of instability for the health staffs in township hospitals

For a township hospital to run normally, it must rely on an appropriate amount of manpower, money and facilities. Of these, health personnel is an important resource. Our investigation suggests there are enough hospital beds to satisfy need--indeed utilization is probably inefficiently low, at about 50% (Table 4.4, Chapter 4). The situation with staff is more serious. Over 80% of health staff wanted to leave the township hospital. Without a stable working environment for health staff, any improvement in facilities in the township hospital would not be efficiently used. Low pay and poor working conditions cause out-flow of staff from township hospitals, and this can only be rectified by creating those conditions which meet the reasonable needs of health staff.

The following conclusions can be made:

1. The deficit of policy is an objective national problem linked to the development of the national economy. The
township hospital has no ability to solve its economic and development problems on its own.

2. The system of economic responsibility merely transfers the problem of solving the deficit on to the township hospital. This placed the leaders of the township hospital in a difficult position of financial loss. Staff became depressed and patients dissatisfied.

The fact that the increase in medical service caused bigger deficit taught the leaders of township hospitals a valuable lesson ie. that the economic responsibility system may not be suitable for the township hospital.

3. A fundamental way to extricate the township hospital from its poor position is that the government must pay more attention to health care, and have a definite policy towards the township hospitals. Rather than relying on ill-thought out applications of the responsibility system, township hospitals should tap more reasonable financial resources in order to reduce their dependence upon selling medicine. Now that township hospitals belong to township governments, if the health investment from central government cannot be increased at present, the township government can produce the extra financial support. This makes the township government a worthy owner of the township hospital.
CHAPTER 6 FACTORS ASSOCIATED WITH THE DEVELOPMENT OF
HEALTH ORGANISATION AT VILLAGE LEVEL

The 3-tier system which was described at the definition has the village as the basic level. However, this hierarchical approach tends to disguise the fact that the village is the crucial focus for improvements in health work. This was emphasised by the World Health Organisation at the 1980 Alma Ata Conference and subsequently elaborated in its document 'Health for All by the Year 2000' (WHO, 1980). Chinese health policymakers have, since the 1960's tried to build up health services in the villages, and redress rural/urban inequities in health care. In 1990, the Ministry of Public Health, the Ministry of Planning and the Ministry of Agriculture issued "the target of health for all by the year 2000 in Chinese rural areas", which had detailed regulations for building up the village health station (VHS). Their emphasis on this point reflects the particular characteristics of rural health work in China.

The 'three tier health network' is one in which the county health organisation is the 'dragon's head', the township hospital is at an axis, and the village health station is the base and fundamental structure of the rural health work system. The VHS, therefore, has a number of functions beyond the simple provision of curative services; it must plan community health care, monitor environmental health, especially water quality, engage in health promotion, as well as a whole range of preventive activities-Maternal and Child Health immunisation, family planning and occupational health. Clearly, the demands on the village
health station are great, and resources generally are small.

In 1989, 21 village health stations in Jiangxi province were studied, looking at the range of medical activities they undertook, staff attitudes and tasks, and the relationship between the health stations and the village leaders.

The purpose was to understand how far medical staff were able to carry out their work, and what such work entailed; the economic situation of the village health station; and how far village leaders saw themselves as responsible for supporting health care in their villages. The aim was to draw some conclusions about various types of village health station.

6.1 The General Conditions of Village and Village Health Organisation

In the 21 villages, the following areas were considered:

1. The basic condition of the 21 administrative villages, e.g. geography, population, economy, education, health targets and the type of health system.

2. The Village Health Station: Number and type of medical staff, (rural doctors and health workers), medical equipment, medicine, managerial characteristics and style, income, expenditure, the number of patients, infectious disease reports and immunisation.

3. 44 medical staff at the village station: working time, advanced study (content, time and place), personal income, working attitude, their opinion of the managerial characteristics of the village health station.

4. Interviews with 59 village leaders: their attitudes towards the support of village health care; their evaluation of
medical service quality and income of village health workers, their opinion of the managerial characteristics of the village health station.

6.1.1 Geographical and economic condition

87% of villages which were investigated are scattered upon hilly land. There is an average of 452 households in each village, 1999 population, and this size is average for Chinese rural areas. Most peasants in this area are engaged in agricultural work, only 3.2% work is rural industry. Therefore these villages are more or less representative of China's rural areas.

In 1988, the total GNP was 21.11 million yuan in 21 villages. The village collective fund was on average 11,907 yuan per village in 1988, but average village health investment (including village station, preventive health work and so on) was only 489 yuan which accounted for 4.1% of the collective health and welfare fund. This was lower than 7.1% average for rural areas as a whole (MOPH 1986).

6.1.2 The development of health care

The infant mortality rate was 35 per thousand in these villages in 1988, which was higher than average 23.51 per thousand in rural areas (ZGWSTJ 1988). There were no recorded cases of maternal death. Only 12 infants received the "one child certificate" among 677 infants in 1988 (1.8%). By comparison over 90% of infants received a "one child certificate" in the city. This indicated difficulties in implementing the "one child policy" in rural areas. Looking at health care coverage, 85% of
the population were covered by self-financing system, 8.2% of total population were covered by a version of the CMS. This means that, in common with most Chinese, the majority of the population were paying fee-for-service for medical care. This is the general condition in China's rural areas at present.

6.1.3 The condition of the village health station

Most village health stations were built at the beginning of the 1970's. By the 1970's the CMS had evolved into a well-developed pre-paid medical service, providing a limited pooling of health risk. Primary health care was available through the CMS at the village health station, all of its inhabitants automatically joined the system.

1. The general condition of the village health station

(Table 6.1).

Table 6.1. Basic condition in the village health stations

<table>
<thead>
<tr>
<th>Item</th>
<th>Mean</th>
<th>S.D.</th>
<th>Median</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service radius(Km)</td>
<td>3.9</td>
<td>7.8</td>
<td>3</td>
</tr>
<tr>
<td>Rooms</td>
<td>3.0</td>
<td>3.5</td>
<td>2</td>
</tr>
<tr>
<td>Staffs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural doctors</td>
<td>2.8</td>
<td>1.8</td>
<td>2</td>
</tr>
<tr>
<td>Health workers</td>
<td>1.7</td>
<td>0.9</td>
<td>1</td>
</tr>
<tr>
<td>Numbers of western</td>
<td>104</td>
<td>94.9</td>
<td>65</td>
</tr>
<tr>
<td>Medicine in stock</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Numbers of Chinese</td>
<td>101</td>
<td>122.0</td>
<td>30</td>
</tr>
<tr>
<td>Traditional medicines in stock</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Km: Kilometer

219
The level of facilities in the village health station was similar to the average level of rural areas in China. For example, 81% of village health stations had a sphygmomanometer, 71% had disinfectant equipment, but the average number of health personnel per thousand was 1.4, slightly lower than 1.8 found in the health service investigation in Chinese rural areas in 1986 (MOPH, 1986). 'Health personnel' means those rural doctors and health workers who worked at the village health station and excludes any doctors who worked mainly at township hospitals. There were three types of managerial systems in the village health stations. One of them was 'solo', which accounted for 48% of total village health stations. Others were 'group' and 'collective', which accounted for 42% and 10% (Figure 1) (see Definitions).
2. Financial condition of the village health stations

Table 6.2 shows that the income of all villages was slightly greater than expenditure. The collective fund in the village was rather weak because of the rural economic reform, an average subsidy for village health station from village committee was 173.3 yuan per village in 1988.

Table 6.2. The economic condition in 21 village health stations

<table>
<thead>
<tr>
<th>Item</th>
<th>Money (Yuan)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total income</td>
<td>158,702</td>
<td>100.0</td>
</tr>
<tr>
<td>*Special subsidy</td>
<td>61,656</td>
<td>38.9</td>
</tr>
<tr>
<td>Village committe subsidy</td>
<td>3,640</td>
<td>2.3</td>
</tr>
<tr>
<td>Other</td>
<td>221</td>
<td>0.1</td>
</tr>
<tr>
<td>Medical income</td>
<td>93,185</td>
<td>58.7</td>
</tr>
<tr>
<td>a. Injection fees</td>
<td>9,528</td>
<td>(10.2)</td>
</tr>
<tr>
<td>b. Register and treatment fees</td>
<td>8,883</td>
<td>100.0 (9.5)</td>
</tr>
<tr>
<td>c. Medicine</td>
<td>74,774</td>
<td>(80.3)</td>
</tr>
<tr>
<td>Total expenditure</td>
<td>115,833</td>
<td>100.0</td>
</tr>
<tr>
<td>Salary</td>
<td>35,501</td>
<td>30.6</td>
</tr>
<tr>
<td>Medicine</td>
<td>75,637</td>
<td>65.3</td>
</tr>
<tr>
<td>Equipment</td>
<td>4,695</td>
<td>4.1</td>
</tr>
</tbody>
</table>

*Special Subsidy: An additional budget allocation from county, and township for special health work; such as preventive work with improving sanitation.

The village health stations' income is derived from three types of fee (injection fee, registration fee and treatment fee), "one profit" (selling medicine) and "one subsidy" (special subsidy). Regardless of income and expenditure, the profit from selling medicines was the main economic activity at village health stations. The total expenditure in all the villages for purchasing medical equipment was 4,695 yuan in 1988, and 50% of
villages had not purchased any medical equipment. This resembles the condition in the township hospitals and probably has a similar influence on the development of health enterprise at village level.

3. Health service at the village health stations

In 1988, village health stations treated a total of 78,563 peasants. Each village health station saw on average, 10 peasants per day (including patients who stayed at home and were visited). This volume of work was not enough to occupy approximately three health workers in the village health station, with the exception of those solo health stations, which had only 1 doctor. Most peasants were paying for their own health care and had the right to choose their own doctor. Since the average service radius of the village health station was 3 Kilometer, it was not very convenient for peasants. So some peasants preferred to go to the township or county hospital rather than the village health station. County hospitals provided the strongest competition for the village health station. Bearing this point in mind, it seems important to consider a more rational geographical distribution of township hospitals and village health stations.

The question arises as to whether a hospital in each township or a health station in each village is necessary. Perhaps some township hospitals and village health stations should be closed rather than falling into financial deficit. This viewpoint would be a source of heated dispute among Chinese health planners because the existence of health facilities is held to be an aspect of social welfare. In general, this is correct. Health organisations should do their best to supply enough good quality
health services for peasants. But the best way to embody the social welfare aspects of health organisation is by increasing health investment from the government and the collective. As shown above, financial support from the government and the collectives was very limited. It appears unfair and unrealistic to allow township hospitals and village health stations to solve financial problems by themselves in order to give an appearance of comprehensive social welfare, when most rural areas are covered by a self-financing system for health care. It is a reasonable option to close some township and village health units which are in deficit. This will, of course limit the health access of peasants, but the key to solving this problem could be to enlarge the coverage by collective health services and to increase government health investment.

6.2 An Analysis of Health Care Providers--Rural Doctors

Village health workers are the primary health care provider in rural areas. They consist of rural doctors and health workers. Their former name was 'barefoot doctor'. If the barefoot doctors passed an examination, they were retitled 'rural doctor', if not, they are called 'health worker'. 44 medical staffs at village stations were investigated. 34 had qualified as rural doctors, the rest were health workers. It might be more accurate according to their work content and function, to call all rural doctors 'Primary Health Care Doctor' which is much more exact than 'rural doctor'. Their work, unlike that of hospital doctors does not solely consist in diagnosis and curative treatment. They are
also responsible for a wide range of preventive health work and associated tasks (for example, a joint policy submission). During the sixties and seventies, while the cooperative medical service was in operation, these rural doctors received training, which was sometimes only adequate for this work. But the decline in the CMS means that no designated pool of money available for training exists now. The appropriateness of some of the training could also be questioned. The argument is developed below.

6.2.1. Basic condition

Among 44 village health workers, 35 were male, 9 were female. According to the norms set down regarding village health personnel, female health workers should comprise one third of the total. 53% were graduates of middle school. There were only two people who had received higher education (including 3 years health school) (Figure 6.2). Their average age was 39 years old, with the majority (54%) of people in the age group 31-40. Average working years were 16.4, 70% of health workers had worked for 11-20 years.

Continuous advanced study is the main training method for improving the village health worker's skill. There were few medical students from medical college in the village health station. Even if these medical students are sent to the village health station, they do not keep their mind on their work and leave for township and county level health units quickly. It is the village health workers who are the most directly in touch with peasants. The quality of these health workers is of vital importance to the quality of primary health care.
A brief consideration of how this situation came about is set out below, and illustrated in Table 6.3.

1. Training history. 73% of health workers began training during the "Cultural Revolution", in 1965-1976. The Cultural Revolution, with its strong political impetus was an important period for developing the team of rural health workers (barefoot doctors) and cooperative medical system (Hillier S.M. and Jewell, 1983). The average accumulated length of advanced study was 2.7 years, which was higher than the 1.4 years in the rural health services survey and 43.2% of the rural doctors had accumulated 2 years of advanced study, which was also higher than the 12% of rural doctors in the 1986 survey (MOPH, 1986). Therefore, on average, these rural health workers had a higher
than average training period. Most were trained for 1-2 years which was divided into several stages, after which these rural health workers could undertake basic health work. It was more usual for the first advanced study period to last only 3-6 months. In the long run, rural doctors who graduate from medical college will be necessary. They may become directors and organizers of village health stations.

Table 6.3. The condition of advanced study of village health workers

<table>
<thead>
<tr>
<th>Commencement</th>
<th>No. of doctors</th>
<th>Year</th>
<th>No. of doctors</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;1960</td>
<td>5</td>
<td>&lt;1</td>
<td>15</td>
</tr>
<tr>
<td>1960-</td>
<td>1</td>
<td>1-</td>
<td>10</td>
</tr>
<tr>
<td>1965-</td>
<td>10</td>
<td>2-</td>
<td>6</td>
</tr>
<tr>
<td>1970-</td>
<td>13</td>
<td>3-</td>
<td>3</td>
</tr>
<tr>
<td>1975-</td>
<td>9</td>
<td>4-</td>
<td>3</td>
</tr>
<tr>
<td>1980-</td>
<td>3</td>
<td>&gt;5</td>
<td>7</td>
</tr>
<tr>
<td>&gt;1985</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>44</td>
<td>Mean=2.27</td>
<td>44</td>
</tr>
</tbody>
</table>

2. Place of training. 23% of rural health workers were trained at the township hospital; 73%, in county hospital; 4%, in other health units. Basic training for rural health workers can be carried out by the rural areas themselves, which is a convenient and economical method of training rural health workers.

3. Content of training. The curriculum included internal medicine, preventive medicine, MCH, Chinese traditional medicine and pharmacy. However, the exposure to different subjects varied, 66% of health workers received basic medical training (western medicine), but only 27-41% of them had other training (prevention,
Figure 6.3. Training Content for Rural Doctor

<table>
<thead>
<tr>
<th>Percent</th>
<th>A: Western Medicine</th>
<th>B: Chinese Medicine</th>
<th>C: MCH</th>
<th>D: Prevention</th>
<th>E: Pharmacy</th>
</tr>
</thead>
<tbody>
<tr>
<td>65.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>40.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>36.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>34.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>27.3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Because China is a big country and is also a developing country, it is difficult to satisfy the demand of rural health services for rural doctors who are graduates of medical colleges and health middle school. One solution would be to choose some young people from amongst rural residents, who have obtained middle school education, and give them a short period of training to master basic primary health care and general medical techniques. In that case, they would know how to treat common diseases and undertake preventive health work. This method of
training rural doctors has four advantages: it saves time, works quickly, and is cheap and easy to implement. These rural health workers would have been born and raised in rural areas, so they understand patients and are familiar with their economic conditions, social and psychological factors, family and previous health conditions. They would be less tempted to move elsewhere and could concentrate on their task. These training methods may be useful to those developing countries which have the same conditions as China.

4. Payment for training costs in money and time

The survey data shows that 91% of rural health workers had not received any training in the last two years. This was closely linked to the disintegration of the CMS. Because of the reduction in collective funds, the training fees paid by village committees almost disappeared. Rural health workers working privately had to pay 76% of the training fee themselves. Rural health workers in the collective village health station had to pay 62% because funds from village committees were not enough for support their training. Since most rural health workers have recently been working in solo or group private practice, they were probably unwilling to pay for their further training. A further reason was related to the economic responsibility system in rural areas. Rural health workers now owned their own land. As well as medical service, they would spend time doing farming and side-line production work. This was usually their main of income.

If we analyse the ratio of time on two kinds of work for all rural health workers in 1988, on average 9.32 months were
spent on medical work and 2.68 month on farming and side-line work. This use of time seems to support the contention that health workers have not time to pursue advanced study. Lack of time, money and organization were the three factors reducing training in recent years. So when rural health workers were asked what was the most important feature of their work, only 9.1% thought that advanced study was important to them. It occupied the second position from bottom in the list. If the situation does not change, the quality of rural health workers will be affected and peasants will experience a crisis in rural health workers.

6.2.2 Health service condition of work

43.2% of village health workers worked in solo practice, 45.5%, at the group village health station, 9.1%, in the collective village health station. It is interesting to consider what influence the working environment had upon the health services supplied. First, the varying amounts of time spent by rural doctors on their work are considered (Table 6.4).

Table 6.4. Time spent by village health workers on farming and medical work (average month per year)

<table>
<thead>
<tr>
<th>Item</th>
<th>Medical work</th>
<th>Sideline/Farming</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solo/Group</td>
<td>9.1</td>
<td>2.9</td>
</tr>
<tr>
<td>Collective</td>
<td>10.8</td>
<td>1.2</td>
</tr>
</tbody>
</table>

The study compared the time spent in medical work by doctors in private practices (either solo or group), with those in the village collective health station. The groups differed
widely. Private doctors spent 24% of their time in agricultural work, compared with the 10% spent by doctors working for the collective. Money, especially income, is a crucial factor which affected the work of all the rural doctors in our sample. In the sixties the original concept of the 'barefoot doctor' was that of a part farmer, part health worker, with up to a third of time spent on medical work. In practice, this division of labour proved difficult—sickness is not readily predictable, and the organisation of preventive work often had to give way to more pressing demands for curative work. The newer type of rural doctor was better trained, with a greater commitment both in time and proportion of income derived, to medical work. Generally speaking however farming and sideline work produced more income and the pressure to undertake it, especially after the collapse of guaranteed income following the decline of the CMS, has been a factor which has dominated the lives of rural doctors. So the private doctors would get more income from three months farming and sideline work than the collective doctor (Hillier S.M. and Xiang Zheng, 1994).

Figure 6.4 shows the content of medical work (excluding curative treatment), and also indicates that medical workers did not carry out all tasks. Their reasons for neglecting certain kinds of work (notably MCH, family planning and prevention) were because the majority (89%) of the rural health workers thought that the pay was too low. Because these tasks did not involve clinical work, rural health workers were not paid a fee from peasants. When the CMS was in operation, barefoot doctors received their salaries from the village committee, and were obliged to do
primary health work. But now most of the income of rural health workers was from the sale of medicine and fees for registration, treatment and injection. The cost of implementing these primary health tasks was usually borne by a special subsidy from the county and township, but the subsidy was small. In any case the subsidies from townships were usually supplied in the form of goods and materials and did not include the salary of rural health workers. It is therefore understandable that without guarantees of adequate payment for these tasks, rural health workers would neglect them.

6.2.3 Economic condition of the rural doctors

The rural doctors were asked what they thought their ideal income should be, compared with their actual income as derived from farming and medical work (Table 6.5), and observed
important differences. Private doctors derived far more of their income (50%) from farming and sideline work; for the collectives, it was 27%. Again, the difference lies in the fact that collective doctors received a larger income subsidy from their villages; The village subsidy for collective doctors accounted for 58.0% (669 yuan) of their yearly income, for private doctors, it accounted for 24.2% of their yearly income (they did some preventive health work); overall, collective doctors had a slightly higher income than private rural doctors. Yet the temptation still exists for collective doctors to undertake more farm work than they do at present. With a guaranteed subsidy from the village they could potentially increase their earnings still more. But this subsidy for collective doctors was lower than 742 yuan received by village leader's subsidy. For encouragement of the rural doctor, their subsidy should not be lower than the leader's subsidy. It should perhaps the equivalent to the rural teachers standard (see Chapter 1).

Table 6.5. Ideal and real income and their sources (Y) for collective and private doctors

<table>
<thead>
<tr>
<th>Item</th>
<th>'Ideal income' per annum (Y)</th>
<th>Real income (Y)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Health</td>
</tr>
<tr>
<td>Solo/Group</td>
<td>1,300</td>
<td>736</td>
</tr>
<tr>
<td>Collective</td>
<td>1,688</td>
<td>1,154</td>
</tr>
<tr>
<td>Total Average</td>
<td>1,666</td>
<td>1,040</td>
</tr>
</tbody>
</table>

We get two points from rural doctor's income:
1. The subsidy of collective rural doctors from village
committee was obviously higher than that of private doctors. It ensured that collective rural doctors spent more time on medical work. They supplied more medical services to peasants than private doctors did.

2. From the total income of view, the income of collective rural doctors was slightly higher than that of private rural doctors due to financial support from the village committee. But if the characteristic and form of income is analysed, it is seen that the average income from medical work was 111.5 yuan per month, which was lower than the 190.6 yuan from farming and side-line work according to this study. This was rather a big temptation to collective rural doctors. With more time to do farming and side-line work, their income would be higher. Clearly, this economic pressure was one of the factors likely to affect the development of village health organisations. If the village collective economy could not support the existence of the village health station, and make up the economic loss of rural doctors who worked in the collective village health station, these collective village health station would finally collapse.

6.2.4 Factors associated with working in village health organisations.

Most (71%) village health workers were satisfied with their work, but the percentage of those satisfied decreased from 84% working in the solo practice village health station; to 65%, in the group practice village health station and 50%, in the collective village health station (Figure 6.5). (X=55.72, P<0.001).
Figure 6.5. Satisfaction Level of Rural Doctors with Their Work

Three Kind of doctors who are satisfied

<table>
<thead>
<tr>
<th></th>
<th>Collective</th>
<th>Group</th>
<th>Solo</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage</td>
<td>60</td>
<td>65</td>
<td>84</td>
</tr>
</tbody>
</table>

Satisfaction

- Satisfied
- Un-satisfied
- No comment
Three factors seemed to influence satisfaction levels (Figure 6.6). The first was the financial factor which includes income and the subsidy of village health workers. The second was the degree of support from the village leader. The third was peasant trust. It seems very important that village leaders and peasants are able to have confidence in rural doctors. Private rural doctors were especially anxious about trust and support. The difference was 7.6 times greater than for other doctors. Financial reasons were a more powerful influence in the case of doctors working for the collective. The difference was 1.7 times. It may be that collective doctors believed that if they were not in a collective clinic, they might be doing a lot better
economically, although a sideways glance at private doctor earnings (assuming that they have been truthfully reported) would suggest otherwise.

These findings suggest that rural doctors have a variety of needs and are not simply motivated by money, although this is clearly important. Relationships with peasants and with the village administration are also salient. With the various forms of health organisation there are different problems and pressures upon rural doctors.

6.3 Village Leaders Views on the Development of Village Health Care

Village leaders are organisers of the health enterprise in the village. Like county and township level leaders, they have an important effect on the development of rural health care.

6.3.1 The relationship between village leaders and health work

The average age of village leaders in the study was 38 years old. Their educational level was the same as the rural doctor's, 71.2% of them had attended primary and middle school. The vice-director of the village committee was usually in charge of the village health work.

In directing health work, village leaders mainly helped rural doctors to draw up health plans and to complete certain special tasks, for example an immunisation programme, changing the quality of water and improving environmental sanitation. In most cases (70%) village leaders were directly involved in the direction. For example, it would be impossible to build a village health station or to buy and repair medical equipment without the
village leader's support. As far as health administration was concerned, normally, township hospitals produced evaluative targets for the village health stations to achieve. 97% of village health stations received these targets. It was the task of the village leader to organize the inspection of the village health station by the township government and township hospital.

6.3.2 Leaders' attitudes to the development of health care

The attitudes of leaders from three levels (county, township and village) about collective and solo/group health stations were investigated. There were 17 county leaders, 20 from the township, 59 from the village. The percentage of County leaders (89%) were most in favour of collective health care at village level, 73% of township leaders, and 42% of village leaders were in favour. The county and township leaders believed that the collective village health stations could bring general benefit to peasants. The majority (89%) of village leaders on the other hand considered that medical services should be paid for by those who used them. Most of the village leaders remembered the old CMS system, with its often disastrous debt problems. These village leaders had a lot of opinions, which affected their enthusiasm for implementing the CMS, and they are the key to its effective implementation.

From the financial point of view, the attitudes of village leaders towards private or collective organisation and their duties with regard to health was found to be unaffected by the incomes of their villages (Table 6.6) ($X^2=0.3139$, $p>0.05$).
Table 6.6. Relationship of peasant income with attitudes of village leader (%)

<table>
<thead>
<tr>
<th>Item</th>
<th>Average income&lt;600 yuan per year</th>
<th>Average income&gt;600 yuan per year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approve collective</td>
<td>47</td>
<td>43</td>
</tr>
<tr>
<td>Approve solo/Group</td>
<td>53</td>
<td>57</td>
</tr>
</tbody>
</table>

\[ \chi^2 = 0.31 \quad P > 0.05 \]

In addition, the attitude of village leaders in two types of county were analysed. One was a primary health care 'model county' selected by the Ministry of Public Health as a model to implement health work in term of the WHO target "health for all by year 2000". These counties paid important attention to primary health work. But the Ministry of Public Health did not increase health investment to them. The other was an ordinary county (non-model county). The economic level was approximately the same between the model and non-model county. The attitudes of village leaders towards the organisation was different, however. Those in the model county were significantly more likely to approve of collective organisation (Table 6.7).

Table 6.7. The attitudes of village leaders towards two types of health management system(%)

<table>
<thead>
<tr>
<th>Item</th>
<th>Model county</th>
<th>Non-model county</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approve collective</td>
<td>49.4</td>
<td>39.7</td>
<td>44.6</td>
</tr>
<tr>
<td>Approve solo/group</td>
<td>50.6</td>
<td>60.3</td>
<td>55.4</td>
</tr>
</tbody>
</table>

\[ \chi^2 = 4.31 \quad P < 0.05 \]
Since the health work in the model county was based on the WHO target "health for all by year 2000", the Ministry of Public Health made detailed regulations for these counties, and there was an emphasis on primary health care at county, township and village level. Leaders were partly evaluated on how far they reached primary health care targets. Therefore, leaders in model counties paid more attention to rural health work than those in non-model counties, and were more willing to work and invest in health. Their policy stance would emphasize the running of health care, believing this had other social benefits as well. This finding suggests that policies, as much as economic questions, affect attitudes. Perhaps clear and decisive policy making is the most effective way to ensure effective and feasible minimum health services in developing countries.

6.3.3 An analysis of factors influencing village leader's interest in health work.

When questioned about actual practical problems, 61% of village leaders thought that the main difficulty with rural health work was the lack of health investment. Others complained that there was no money for preventive health work, and no clear policy guidelines. A small number mentioned that peasants were hostile to the health services, found them unsatisfactory and consequently did not use them (Figure 6.7).

In health management work, rural doctors play an important role. How did the village leaders evaluate rural doctors? Table 6.8 shows the basic evidence.
Figure 6.7. Influential Factors on Village Leaders Doing Health Work

<table>
<thead>
<tr>
<th>Rural Areas in China</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. No Economic Condition</td>
</tr>
<tr>
<td>B. No Preventive Fee</td>
</tr>
<tr>
<td>C. No Peasants' Support</td>
</tr>
<tr>
<td>D. No Clear to Health Policy</td>
</tr>
<tr>
<td>E. Difference Opinion Among Village Leaders</td>
</tr>
</tbody>
</table>

Table 6.8. The village leaders' evaluation of rural doctors *(%)

<table>
<thead>
<tr>
<th>Dissatisfaction factors</th>
<th>Income of rural doctor</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Education</td>
</tr>
<tr>
<td>Solo/Group</td>
<td>50.0</td>
</tr>
<tr>
<td>Collective</td>
<td>38.5</td>
</tr>
<tr>
<td>Total Average</td>
<td>42.1</td>
</tr>
</tbody>
</table>

*Percentage of Leaders giving these as reasons.

Village leaders criticised rural doctors for their low educational level, poor skills and lack of commitment. Although they saw doctors in the collective system as better educated, they
were more likely to be critical of their lack of commitment, and the time they spent on medical work. Lack of commitment is a general problem in the collective health station and with the CMS previously. This phenomenon is called 'all eating from the same pot' which means that all will get the same, irrespective of what they contribute. This attitude has been much criticised in recent years. It was believed to be a disincentive to effort, leadership and change.

Certain steps could be undertaken to improve the quality of rural doctors in the collective village health station. On the basis of increasing their income, managerial work could be strengthened. For example standards of treatment could be checked and a system of rewards and penalties for rural doctors introduced, such methods are already in use in city hospitals and amongst rural teachers, with a series of regulations covering examinations, promotion, leaving and retirement. Those rural doctors who achieved high levels of skill, with plenty of clinical experience could progress to become a fully qualified national doctor, to provide incentives over a gradual period.

In evaluating the income of rural doctors, village leaders believed that doctors as a whole were poorly paid, with only 'middle level' incomes. They maintained that the rural doctors' income was not satisfactory. It was lower than that of the village leaders because rural doctors are not recognized as intellectuals, which would result in a higher income. To change their status is not impossible. For example, today the treatment of rural teachers is better than that of rural doctors, but this
came about as a result of policy readjustment. Following directives from central government to local government, all leaders concentrated upon the development of educational enterprise and increased educational investment. The salary of rural teachers increased 10%. Education is not dissimilar to health, and perhaps the policy applied to education could be extended to health. This would speed up the developments in rural health care.

6.4 Comparison of Various Health Management Systems at Village Health Stations Level

After the collapse of the CMS, the Ministry of Public Health encouraged a variety of health systems in the rural areas. The Ministry of Public Health promoted collective, solo practices, group practices and township hospitals setting up village health stations. a) Collective village health stations resemble the earlier CMS, but the proportion of reimbursement and amount paid in advance is less than the previously. The village committee is in charge of the collective village health station. b) Group village health stations were organized voluntary by a few private rural doctors and health workers. Sometimes they could get a little financial support from the village committee by undertaking various contracts, but generally, if peasants went to this type of health station, they had to pay themselves. A large proportion of health stations are now like this in China. C) At the solo village health station, there is one private doctor, who is in charge of everything, and recieves no financial support from the village committee. Again peasants have to pay for themselves when
they visit this type of health station. d) Township hospital sets up a health station in the village. This organisation is the same as the collective village health station except in terms of its management. The township hospital runs this station including its finances and programmes for training rural doctors. This kind of health station accounts for only a small proportion of all village health stations. Below, the advantages and disadvantages of various types of village health station organisation are considered. Solo, group and collective types of organisation are analysed, but not that of the township, since there were none of this type in the samples.

6.4.1 Comparison of basic conditions

In the villages investigated, average population and average income per head were about the same. The size of the group village health station (GVHS) and the solo village health station (SVHS) was the same; they were both smaller than the collective village health station (CVHS). Western medicine was the main kind of medicine used at the CVHS, which was 3.3 and 1.9 times that at the SVHS and the GVHS. Chinese traditional medicine, especially the packaged varieties which sell very profitably was the main kind of medicine used at the SVHS and the GVHS. The tendency can not be controlled, because private rural doctors prefer to sell Chinese traditional medicine in order to obtain a high profit, because it was very difficult to control the price and the kind of medicine at the SVHS and the GVHS (Table 6.9).
Table 6.9. Comparison of the three types of villages and their VHS

<table>
<thead>
<tr>
<th>Items</th>
<th>Solo</th>
<th>Group</th>
<th>Collective</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average population</td>
<td>1958</td>
<td>2102</td>
<td>1739</td>
</tr>
<tr>
<td>Average income per capital(Yuan)</td>
<td>632.8</td>
<td>623.8</td>
<td>634.7</td>
</tr>
<tr>
<td>Room of VHS</td>
<td>1.3</td>
<td>3.6</td>
<td>10.0</td>
</tr>
<tr>
<td>Varieties of western medicine</td>
<td>68</td>
<td>119</td>
<td>223</td>
</tr>
<tr>
<td>Varieties of Chinese traditional medicine</td>
<td>95</td>
<td>126</td>
<td>22</td>
</tr>
</tbody>
</table>

The educational level was the same among the three kinds of village health staffs, graduated from middle school and received training from township hospital and over township hospital level. But 10% and 20% the health staffs worked at the SVHS and the GVHS had not received training. The collective village health workers seem to receive more professional training than these private doctors, because the village committee paid

Table 6.10. Comparison of educational and professional level of rural health workers (%)

<table>
<thead>
<tr>
<th>Items</th>
<th>Solo</th>
<th>Group</th>
<th>Collective</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt;High school</td>
<td>26.4</td>
<td>30.0</td>
<td>25.0</td>
</tr>
<tr>
<td>Middle school</td>
<td>63.2</td>
<td>40.0</td>
<td>50.0</td>
</tr>
<tr>
<td>Primary school</td>
<td>10.4</td>
<td>30.0</td>
<td>25.0</td>
</tr>
<tr>
<td>Training</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>90.0</td>
<td>80.0</td>
<td>100.0</td>
</tr>
<tr>
<td>No</td>
<td>10.0</td>
<td>20.0</td>
<td>0.0</td>
</tr>
<tr>
<td>The Content of training</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Western medicine</td>
<td>65.4</td>
<td>65.0</td>
<td>75.0</td>
</tr>
<tr>
<td>Chinese medicine</td>
<td>20.0</td>
<td>60.0</td>
<td>50.0</td>
</tr>
<tr>
<td>Prevention</td>
<td>20.0</td>
<td>45.0</td>
<td>50.0</td>
</tr>
<tr>
<td>MCH</td>
<td>10.0</td>
<td>55.0</td>
<td>75.0</td>
</tr>
<tr>
<td>Pharmacy</td>
<td>25.0</td>
<td>50.0</td>
<td>50.0</td>
</tr>
</tbody>
</table>
most of the training fees for collective health workers. This is a key measure in guaranteeing the quality of rural health services (Table 6.10).

6.4.2. Comparison of health services

1. According to Table 6.11, the CVHS implemented health services comprehensively, including immunisation, family planning, MCH and infectious disease reporting. All of these activities were more likely to be undertaken at the CVHS. Health staff worked longer at the CVHS (10.8 months per year) than those at the SVHS and the GVHS (9.02 and 9.0 months per year respectively). On average peasants saw doctors 3.74 per year at the CVHS, over twice as many as at the SVHS and GVHS. The average number of treatment episodes each doctor at the CVHS were 2.3 times and 3.1 times as many as that at the SVHS and the GVHS. The

Table 6.11. Percentage of various activities undertaken by three types of VHS in 1988

<table>
<thead>
<tr>
<th>Items</th>
<th>Solo</th>
<th>Group</th>
<th>Collective</th>
</tr>
</thead>
<tbody>
<tr>
<td>Special Tasks(%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Immunisation</td>
<td>85.0</td>
<td>80.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Family planning</td>
<td>40.0</td>
<td>45.0</td>
<td>75.0</td>
</tr>
<tr>
<td>MCH</td>
<td>40.0</td>
<td>50.0</td>
<td>75.0</td>
</tr>
<tr>
<td>Health propaganda</td>
<td>60.0</td>
<td>45.0</td>
<td>50.0</td>
</tr>
<tr>
<td>Infectious disease report</td>
<td>80.0</td>
<td>75.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Working time (Months)</td>
<td>9.02</td>
<td>9.0</td>
<td>10.8</td>
</tr>
<tr>
<td>Average times per year peasant seeing doctor</td>
<td>1.50</td>
<td>1.86</td>
<td>3.74</td>
</tr>
<tr>
<td>The average number of treatment patients per doctor</td>
<td>1397</td>
<td>1065</td>
<td>3250</td>
</tr>
<tr>
<td>The number of home visits by doctors</td>
<td>97</td>
<td>85</td>
<td>350</td>
</tr>
</tbody>
</table>
number of home visits were 3.6 times and 4.1 times that of the SVHS and GVHS respectively. It seems that health services at the CVHS had two advantages compared with the SVHS and the GVHS. One is that the health services were of a wider range. Another is that the volume of health services was larger.

2. According to the data in Table 6.12, the average infant mortality rate at the collective health care villages was 33.7 per thousand, a little lower than 35.7 per thousand at the solo and the group health care villages. The percentage of patients seeing the doctor was 93.6% at the collective health care villages, which was the highest among the three kinds. However, peasants at the solo and the group health care villages had more choices, as to the place of treatment, and more of them went to the county hospital than peasants in collective health care villages. The

<table>
<thead>
<tr>
<th>Items</th>
<th>Solo</th>
<th>Group</th>
<th>Collective</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infant mortality (per thousand)</td>
<td>35.7</td>
<td>33.7</td>
<td>35.7</td>
</tr>
<tr>
<td>Percentage of patients visiting the doctor</td>
<td>91.4</td>
<td>89.1</td>
<td>93.6</td>
</tr>
<tr>
<td>Places to see doctor</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VHS</td>
<td>66.2</td>
<td>79.0</td>
<td>72.5</td>
</tr>
<tr>
<td>Township hospital</td>
<td>25.7</td>
<td>10.5</td>
<td>24.1</td>
</tr>
<tr>
<td>County hospital</td>
<td>8.1</td>
<td>10.5</td>
<td>3.4</td>
</tr>
<tr>
<td>Health service to high risk population(%)</td>
<td>35.2</td>
<td>35.7</td>
<td>47.2</td>
</tr>
<tr>
<td>under 12 years old</td>
<td>(19.7)</td>
<td>(19.1)</td>
<td>(24.5)</td>
</tr>
<tr>
<td>over 60 years old</td>
<td>(9.3 )</td>
<td>(8.9 )</td>
<td>(10.4)</td>
</tr>
<tr>
<td>Peasants suffering from Chronic disease</td>
<td>(6.2 )</td>
<td>(8.7 )</td>
<td>(12.3)</td>
</tr>
</tbody>
</table>

Table 6.12. Comparison of health service condition
proportion of high risk population was high, accounted for 47.2% of total population that attended the CMS, which was higher than 35% of total population obtaining health services at the solo and the group health care villages. This was because these collective health care villages had open access to health care. So the peasants who had disease experiences preferred to attend the CMS.

The proportion of children and elderly were higher in the CMS group, generally speaking, the health service utilisation of these people is higher than that of young people. But it is not only reason for the high health service utilisation in CMS group. Because the people (including young people) who enjoy the CMS have paid a little money, they would not like to waste the money. They think that they have paid for CMS, they should use it, whether they need health services or not. In other words, even though it is not necessary to have health services for young people sometimes, these young people still see the doctor and receive medicine. It is an example of "moral hazard", which causes the health service utilisation in the CMS group to be higher than in the self-financing group. It is the general psychological status of Chinese peasants (Zhu ao rong, 1988).

It seems that the CMS can satisfy more easily the health service needs of rural residents. It allows most peasants, especially the vulnerable ones to get basic health services without undertaking more economic risk. Obviously the CMS has social benefits.

3. The data in Table 6.13 show that the cost of each visit to the GVHS and the SVHS were 8.4 and 5.6 times respectively as much as at the CVHS. In contrast, yearly average
medical expenses per peasant were 13.82 yuan at the CVHS. Of these, the collective paid 2.88 yuan, the fund raised by peasants paid 3.44 yuan, the peasants paid 7.50 yuan. Because the income of the SVHS and the GVHS relied on medical services mainly, increasing the charges to patients would raise the income of the rural doctors, but the financial resource was fixed at the CVHS and increasing the expenditure of patients would decrease the rural doctor's income. The CMS can effectively control medical costs after it has basically satisfied the health service need of peasants because it does not need to make a profit. With the exception of service attitude, the health service level was higher at the CVHS than at the SVHS and the GVHS. Especially with regard to preventive health the CVHS had obvious advantages compared with the others.

6.4.3 Analysis of the merits and demerits of three kinds of village health station

As explained before, solo and group village health stations charge patients, who are self financing. They can
utilize the idle capital of the society to supply basic health services for peasants. Besides, this kind system gives the peasants more right to choose the place of treatment. The health service attitude is better than the collective rural doctors'. In both the SVHS and the GVHS, no matter what the scale of the health station (the quantity of doctors and health service content) the GVHS was better than the SVHS.

Comparing the CVHS with the SVHS and the GVHS, the main difference is that medical expenses can not be reduced at the solo or group health station. Private medical systems can not help peasants when they have serious health problems and accidents. The CVHS had a satisfactory variety of health service items. It paid attention to preventive work as well as to demands for curative treatment. Unlike the self financing system, there was no pressure on doctors to derive their income from the patient in order to get more personal income. At same time the CVHS supplied some free health services. The rural resident especially those with at high risk or with a large family, could afford to visit to clinic. These advantages meant that the CMS should not be replaced and abolished. If we consider a survey of infant mortality in China, which reduced from 67 per thousand in 1982 to 34.7 per thousand in 1985, the rural areas showed an unbalanced distribution of the reduction, depending upon the various health systems. Infant mortality reduced very slowly in those areas covered by the self-financing medical system (Zhu Ao Rong, 1988).

Table 6.14 sums up the merits and demerits of the three kinds of village health station.
### Table 6.14. Comparison of the merits and demerits of three kinds of village health stations (summary data from VHS surveys)

<table>
<thead>
<tr>
<th>Items</th>
<th>Solo</th>
<th>Group</th>
<th>Collective</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Utilization of idle capital</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>2. The scale of VHS</td>
<td>Small</td>
<td>Medium</td>
<td>Large</td>
</tr>
<tr>
<td>3. VHS's management</td>
<td>Difficult</td>
<td>Less difficult</td>
<td>Easy</td>
</tr>
<tr>
<td>4. VHS's capital</td>
<td>Less</td>
<td>Medium</td>
<td>Plenty</td>
</tr>
<tr>
<td>5. VHS's equipment</td>
<td>Less</td>
<td>Medium</td>
<td>Much</td>
</tr>
<tr>
<td>6. VHS's room</td>
<td>Less</td>
<td>Medium</td>
<td>Many</td>
</tr>
<tr>
<td>7. VHS's service items</td>
<td>Less</td>
<td>Medium</td>
<td>Many</td>
</tr>
<tr>
<td>8. VHS's service time</td>
<td>Medium</td>
<td>Medium</td>
<td>Longer</td>
</tr>
<tr>
<td>9. VHS's amount of service delivery patient</td>
<td>Less</td>
<td>Less</td>
<td>Much</td>
</tr>
<tr>
<td>10. VHS's doctors educational level</td>
<td>Same for the Three Types</td>
<td>Same for the Three Types</td>
<td>Same for the Three Types</td>
</tr>
<tr>
<td>11. Training time</td>
<td>Medium</td>
<td>Medium</td>
<td>Much</td>
</tr>
<tr>
<td>12. Training content</td>
<td>Medium</td>
<td>Medium</td>
<td>Much</td>
</tr>
<tr>
<td>13. Medical level</td>
<td>Medium</td>
<td>Medium</td>
<td>High</td>
</tr>
<tr>
<td>14. Service attitude</td>
<td>Good</td>
<td>Good</td>
<td>Bad</td>
</tr>
<tr>
<td>15. Expenditure of peasant for medical services</td>
<td>Medium</td>
<td>Medium</td>
<td>Less</td>
</tr>
</tbody>
</table>

### 6.5 Summary of Chapter 6

#### 6.5.1 General condition of village health care

1. 85% of peasants used a private medical service. These privately run village health stations assumed sole responsibility for their profits or losses, and had little surplus to expand their services. Patients now had the right to choose where to be
treated or to be referred. As a result, market competition existed between the county, township and village. The county hospital obviously was the most attractive health facility, and the number of patients decreased at the township hospitals and village health stations, resulting in loss of work for the doctors. This problem might be counteracted by closing down some health facilities (e.g. township hospitals) to increase the activity of the basic level of the three level medical network.

2. Rural doctors are the direct suppliers of basic rural health care. What they do is far more than simple curative work because they are also in charge of primary prevention, health propaganda and so on. They require a set of skills that are not characteristic of clinically trained health personnel. Like social workers, they appear to need a range of various skills that extend beyond the realm of narrowly defined clinical practice. Then, the rural doctor could be called the 'primary health care doctor', and given appropriate incentive and training.

The survey results showed that only about 50% of rural doctors were working on preventive work (with the exception of immunisation), which falls far short of what is necessary. Less than 10% had taken an advanced training recently. Because of the economic responsibility system in rural areas, rural health workers owned their own land, so it was very difficult to get financial support from collective funds, since there were none available. Therefore, lack of time, money and organization were three factors which affected rural health workers' advanced training and health work. As a result, neither their preventive health care knowledge nor their basic medical techniques could be
enhanced. The long run effect of lack of training has been to weaken the capacities of rural doctors, undermine the confidence of peasants in their skills, and lead to a downward spiral.

6.5.2. Importance of insisting on and developing collective health care for building the base of the rural health network.

Compared with private health care, collective health care performed better on a number of health indices. The private health system cannot guarantee rural residents basic health services especially preventive health services. The reasons for favouring the development of a collective health care system are as follows:

1. It is suitable to the national situation. During rural health reform, the Ministry of Public Health encouraged a plurality of health systems. But the policy increased the financial burden of peasants without supplying a corresponding health service for them. As a result, it damaged the health care of rural residents. The economic conditions of Chinese rural residents are still low at present. The CMS which is an example of a risk-sharing scheme seems the best system to satisfy all types of economic conditions. Because the CMS exists on mutual aid and cooperation, it is one of the most effective health care management systems, which helps the peasant who cannot defray the expenses of medicine and treatment. The CMS does allow uninsurable people to become insurable, although there are some examples of "moral hazard".

2. It is a means of instituting primary health care. Primary health care is included in the organization of village health. Though there is no income from preventive work, it still
has to be financed. When the government is unable to finance preventive work, the private health system does not want to do, and the collective economy is not strong enough, the CMS is a practical and effective measure to finance essential preventive measures though a collective health care system.

3. It increases peasant and government awareness of health care and results in effective participation in its organization. Through running collective health care, part of the capital is obtained from peasants, and governments at all levels can put in more health investment. In this way, the peasant and the government can acknowledge that primary health care is an important aspect of arrangements for health and well being in society, and that it is everyone's responsibility to perfect the organization of rural health care and to improve peasants' health conditions.

In all, collective health stations in the rural areas can be controlled effectively by village committees and other health units, and can implement government's health work in the rural areas. Therefore, collective health stations can obviate the administrative disadvantages due to the shortage of effective management in the self-financing medical system. Then the health organization of the village virtually becomes the basis of a three level medical network.

Factors influencing the Re-establishment of collective health care:

1. Health policy is the first factor. Income differences did not influence village leaders towards favouring any particular model of health care organisation. What did seem to make a
difference was whether or not the leader's village was in a model county, because a different policy was implemented in the primary health care model county and non-model county. In addition, looked at historically, during the Cultural Revolution, the economic conditions of rural areas were worse than at present, yet the speedy development of collective health care meant that the peasant could gain basic medical services although the CMS of that time suffered from imperfections. This was a definite consequence of policy making. Above we have seen that the CVHS has more advantage than the SVHS and the GVHS. Therefore, perhaps it should be possible to copy and improve the health policies of the Cultural Revolution, which stated that 'in medical and health work, put the stress on the rural areas'.

Initially, the Ministry of Public Health should recognize the advantages of the collective organisation of health care, and produce health policies for every level of government county, township and village. For example, a regulation should be made that county, township and village governments must distribute a certain amount of health investment from their own financial budgets as well as the financial allocation from central government; at same time, managerial organizations controlling collective health care needs to be built up at the three levels. These organisations could then make detailed formal and official regulations covering the ratio and range of reimbursement, and the wages of rural doctors so that it is clear, where authority lies in the matter of running collective health care. As long as rational administrative methods are used, many of the evils of the previous CMS could be prevented. In this way, without a great deal

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of increase in government health investment, the organisation of collective health care could be carried out. The use of clear policy and clear administrative guidelines are especially useful to these areas which are lacking in money. It also might be an useful method for other developing countries as to how to enhance the quality and quantity of rural health services. A basic position that it is difficult to carry out primary care on large scale without government participation and direction.

2. Man made factors cannot be ignored. The results of investigation among the leaders of the three levels showed that the percentage of those approving of the collective organisation of health care decreased from county to village. Therefore, it appears that the main resistance comes from village level. This can only be rectified by education among the village leaders and peasants when the managerial and administrative problems of the previous CMS are recognized, and improvements in the new system demonstrated. It also suggests that central government and local government should obtain advice from county, township and village administrators when they make health policies. The policy is more easily understood and implemented if there is a community participation in the process of policy-making.

3. Finally, economic factors are also important. Policy adjustment and administrative intervention are necessary to increase health investment, because economic development and the increase of the proportion of the budget allocated to the collective fund are essential for running collective health care. However, this should depend on each village's economic condition. When poor rural areas set up the cooperative medical
system, most of the resources will come from rural residents themselves. The areas which are a little more prosperous can pool other resources. This would mean that the collective fund contribution is more than the peasants' contribution. Useful sources for example are township hospitals and rural industry which can give some money. As economic improvement and collective health investment increase in the rural areas, the right of peasants to choose and control their most appropriate medical service can be made a reality.
CHAPTER 7. CONCLUSIONS AND SUGGESTIONS

7.1 Conclusions

The three tier rural health network (county, township and village) built in the 1950s and described in previous pages, has had considerable durability, and has proved appropriate to the Chinese situation. Its structure was that Chinese rural health enterprise was run by the county, the collective and the peasants together which has contributed to its vitality. This kind of structure has been crucial in implementing Primary Health Care in Chinese rural areas, and PHC is the necessary basis for making health policies for China, especially in the rural areas, inhabited by the majority of the population. PHC has become increasingly institutionalized in developing countries and the approach provides essential health services, mainly to dispersed rural populations which often do not have regular access to public or private health care.

Survey results from this study showed that the Cooperative Medical System, the basic funding form for rural inhabitants declined markedly during the reform period. Private doctors replaced the barefoot doctor. At the time of the survey, most village health stations were run as private enterprises, almost 'medicineshops', compared with their more comprehensive functions a decade before. The reasons for this change are political---the CMS was associated with the disastrous Cultural Revolution. It was judged as one of products of the Cultural Revolution and removed. This decision paid no attention to its value as the 'glue' which held rural health care together; in addition, the changes in rural economic structure induced major
changes in the funding of the CMS. The Chinese Ministry of Public Health could not find a correspondingly alternative model for rural health care. The village health stations which were the most local and smallest part of the three tier health network, due to lack of availability of collective funds had been moving to private enterprise automatically. This change meant that individual peasants were obliged to finance health care themselves. Although the rural economy had developed as a result of economic reform, the living standards of peasants were still comparatively low. It is a principle of HFA/2000 that disease risk should not be linked, as productivity is, to the individual's economic ability.

The thesis shows that privatisation of village health stations seriously affected rural residents' utilization of health service and restricted their demand artificially. Opportunities for a wide ranging set of health related activities based in the village were removed. Rural health care did not develop—rather it was weakened during health reform. This weakness affected not only the village level, but the hospital services in the township. Health reform has caused a crisis in township hospitals by producing bankruptcy for some and indiscriminate sales of medicines as a survival strategy for others. It is obvious that simple privatisation of the Chinese health care market is not helpful for improving the health of rural residents. Privatisation's non-collaborative and non-intersectorial dynamic affects the implementation of PHC in Chinese rural areas. If we consider the principle of equity in health care and the goal of the HFA/2000 in Chinese health care, privatisation of the health
system will not be an adequate policy. Therefore the question remains as to what health policy for Chinese health care can be made and how health services for the rural residents can be supplied. A number of possibilities can be considered, based upon the range of approaches to health care funding discussed in the opening chapter.

Option one is free government health care for rural residents. This is impossible, because workers and cadres can get a salary from the factory or the government, peasants have no fixed incomes. The social benefit is different. National health insurance which currently pays benefits to those working for the state has to reform because the government cannot undertake this large financial burden (see chapter 4). It is highly unlikely therefore that such a scheme would be extended to peasants.

Option two is the private health system for example private health insurance or fee-for-service. The problem here is that peasants cannot afford the levels of medical expenditure associated with severe disease, without ruining their family finances (3089 Chinese yuan/average family yearly income—chapter 3), although they are probably able to produce some increase in their health expenditures.

Therefore, despite the drawbacks noted in Chapter 1, the best model of health service financing and delivery is the CMS which is an example of a risk-sharing scheme applied to the rural areas of China. This model would mean that neither the individual nor the government is solely responsible for payment. The CMS is financed by peasant prepayment and collective funds, organised by the village committee or the township hospital. From a comparison
of various health management systems at village level, the thesis showed that the medical services which were supplied by the collective health station consisted of more items especially in primary health care and preventive medicine. Costs were lower and organisation easier than those of the privately run village station. The major advantage compared with the fee-for-service system is that the CMS allows uninsurable rural residents to become insurable, and gives them a greater sense of security. In addition, it reflects that management should be the responsive to peasants' needs as they are expressed at each particular level. Although the survey found that money was not the prime factor in determining utilisation, as discussed above, the relationship requires further explanation. Users of the CMS were more satisfied with this method of payment than those who depended upon the private system. This suggests again that the predictability which results from the CMS structure of prepayment is an important factor in guaranteeing peace of mind from catastrophic illness expenses.

Careful policy-making is also a key factor in the development of Chinese rural health care. The investigation found that the village leaders have different objectives as to how to run health care depending upon whether they were in a PHC model county or a not with the former giving more prominence to national policy objectives like preventive health and family planning. This reflects the structures of economic development, and the fact that the methods of health care delivery and health care policies are still largely centrally determined. The process of health policy making is 'top-down' in China and has also oscillated according to
the political atmosphere. Community participation of the type described in Chapter 1 is non-existent. The coordination of the peasants and workers and professional health personnel which is the basis of the WHO model, does not exist in the same way. Local health cadres and community health workers who work in rural areas are largely concerned with implementation of central directives rather than formulating local health policy. The policy of building a County Chinese Traditional Hospital in all counties is good example of the 'blanket objective' applied top down regardless of its appropriateness.

The concept of community participation is complicated in China. Historically, there have been 'mass movements' locally organised by community health workers such as barefoot doctors and involving all the local inhabitants as participants. These community health workers play a very large part in Chinese health care and they are a very important source of community based manpower. These mass movements for example, the Patriotic Health Campaign, are 'one off' events, with limited, centrally defined objectives eg, eradication of a particular insect pest or rodent, or where rural residents and health workers physically work to 'clean up' the environment. However that is not complete participation as understood in the extant literature on international health policy. In China, another aspect is required i.e. community participation in policy-making and community health workers who have a diverse range of skills, not only to implement health activities but to participate in local health policy-making. Therefore, community health workers must not only have the characteristics of clinically trained health personnel, but
they must be organizers, coordinators and promoters of health activities. If a process of health policy-making is set up in this way, which is responsive toward various sectors, policy will be more feasible. Community participation in health policy making may encounter some obstacles in China because, once community representatives want to share power with authorities, they are unlikely to be well accepted, however a gradual involvement with the process is still necessary.

Health reforms have introduced the system of market competition which is the economic responsibility system. The quantity of hospital services are linked with profits, determined by contract. This competition has brought economic vigour to hospitals, reduced the financial burden of the government and improved the management of hospitals to some degree. The system has also forced hospitals to pay more attention to profit, at the expense of social benefit. The county and the township hospitals increased medicine sales and clinical tests for profit. Some were probably unnecessary, and added to health care costs for the rural residents. These sales, registered as annual income, gave an air of false prosperity to hospitals and made government health investment even less likely. However, a more important fact is that China's rulers are committed to introduce a free market economy now. Under this situation, it is very difficult to decide whether to limit or to expand the system of market competition in Chinese health care. Many are aware that health care market is different from the free economic market in which services are supplied for profit only. The supply of health services in market has to consider social benefits. Health care is a 'public good' to
be met for all people and is not same as a commercial good exchanged depending on individual's financial ability. So the government cannot simply copy the free market economy when constructing government policy---this would merely repeat the mistakes of health reform over the last dozen years. The government should control health care market continuously and actively because this action can guarantee people the means of obtaining a basic health service and is useful for the implementation of PHC. Whatever system prevails, a primary objective must be to safeguard the quality and quantity of health services. Probably, a reasonable market competitive system in Chinese health care is 'the internal market' of the UK as mentioned on Chapter 1, which is controlled by the government, but not the free market model currently in operation in the U.S.A.

These points are closely associated with the issue of equity in Chinese health care, as we shall see below.

The health reforms weakened the development of rural health care and strengthened urban health care. The gap between the rural areas and the urban areas continues to increase. The survey indicated that there is an uneven distribution of health personnel between the urban areas and the rural areas. The medical expenditures of peasants were much less than that of workers and cadres because peasants had to pay for medical care themselves. Workers and cadres enjoyed free health care which contributed to a situation of 'moral hazard' which is defined as the abuse of free health care by people seeking health care not because they need it but because the health care is free. The reasons of this long standing rural/urban inequity are:
Historically, during the Cultural Revolution, urban health care was run down, in tune with the Maoist slogan 'put the stress on rural areas'. Post-Mao, there was an enormous political impetus to improve urban health care. Leaders and officials, the city dwellers in China's all powerful bureaucracy, have ensured that after a brief flirtation with egalitarianism, the welfare of the cities stays paramount.

Though the Chinese Ministry of Public Health has recognised the HFA/2000 is the goal of Chinese health care and issued PHC targets, it has not pursued detailed policy-making. The Ministry of Public Health did not make a distributive policy in favour of the rural areas during health reform. This reflects the fact that Chinese health policy makers did not completely understand the important principle of PHC i.e. the equitable provision of health care to all people. Equity in health care was not confirmed in practice in China, not was it ever discussed as a principle.

Chinese economic development can not achieve equity complete in health care, for the country does not have enough health resources to reduce the gap between urban areas and rural areas now. In the absence of major policy change in favour of massive redistribution, that situation is likely to continue.

Finally, the survey also shows that the privatisation of the health system in the rural areas produced inequality of access to health services, which expanded the gap.

What calls for special attention is the privatisation of health care following the introduction of market competition. What assessment can be made? Firstly we must know that privatisation is by nature characterised by inequity. It is not
only this survey but an abundance of literature, discussing for example, the private health insurance system in US, which has shown that privatisation in health care has no positive effect in improving people' health status. Secondly, equity in health care does not mean that everyone can reach the same health status. Equity in health care is only a means of giving people fair opportunities to obtain health services and to reduce man-made health differentials. Therefore Chinese health policy-makers should be following the principle of equity, increasing health investment to the rural areas and limiting the development of private health enterprises in order to reduce the health differentials between urban and rural residents. Detailed suggestions for implementation are given below.
7.2 Suggestions

7.2.1 Health work should again put the stress on the rural areas. 80% of China's population live in the rural areas, therefore laying the stress on the health of rural people, provides an excellent opportunity to improve the health of the majority of the population. Developing rural health organisations should become a basic rule in health policy.

The Central Government and the Ministry of Public Health know that health reform has weakened rural health work. At the beginning of 1991, they started to change course again, saying that the stress should be placed on the rural areas once more. Several important developments illustrate this:


2. The State Council approved a report from the Ministry of Public Health, Agriculture, Planning, Education and Personnel "Concerning the Reform and Strengthening of Rural Health Work" on January 17, 1991. In the report, the Ministry of Public Health and 4 other ministries acknowledged, that rural health care had not developed but was weakened during health reform, and that the gap between the quality and quantity of urban health care and rural health care was increasing. They emphasised the need to develop the three tier rural health network because 30 years practice
shows that this fits the Chinese conditions. The report also discussed the need to solve the problem of shortage of health personnel in the rural areas; to look for some means to keep rural health personnel at their posts, to strengthen the management of rural health care and, most importantly to continue the CMS in rural areas (State Council of the PRC, 1991,1).

This is the third shift in health policy, and may mark a new phase. In the 1960's-1970's, health work was directed to rural areas to build the three tier rural health network and the teams of barefoot doctors. In the 80's, the stress was on building up the urban areas. Now the policy stresses the rural areas again. This suggests that the data which was been presented by the thesis is true reflection of the situation.

However, this third phase is not simply a copy of the rural health system of 30 years ago. On the basis of learning the lessons of history and respecting peasants' wishes, the CMS must be suitably adapted to the local economy. The means that the method of collection of health expenses might be varied. The money collected from the peasant and the proportion of reimbursement will be determined according to local conditions. Collective village health stations will be encouraged, and where that is not possible the rural doctor should be responsible to the village committee for the management and organisation of the village health station.

7.2.2 The three tier health network should implement a reasonable management system.

The county health organisation and the central township hospital might best be governed by the county health bureau. At
present, the township hospital usually belongs to the township government. If the township government has difficulty in managing the township hospital, the county health bureau could oversee the township hospital continuously or the county health bureau and the township government manage it together. In practice this means that the county health bureau would give financial and technical support, the township government would administer the hospital. Unprofitable township hospitals could be closed or merged with other township hospitals. Generally, the village health stations are responsible to the village committee, but in some rural areas, the township hospital is in charge of the village health stations. This usually occurs where a few villages are too small to provide the necessary resources, and seems to work quite well. Private doctors could be supplementary health personnel allied to and monitored by the three tier health network. The county and township health sections could strengthen the role of private doctors and provide incentives for them to undertake primary health work.

7.2.3 A more effective method should be found to solve the problem of the shortage of health resources in rural areas.

The prime means to solve the shortage of health resources is to be aware that everyone should have a fair opportunity to attain their full health potential, and the HFA is not only the medical doctor's duty, but requires the alliance of central and local government, social organizations eg. factory worker union and woman association and individuals. HFA cannot be realized if any of these sections absent. Once the government,
social organizations and individuals are aware of HFA objectives, they would be more likely to increase investment in health care. In the meantime, the distribution of health resources would need to follow the principle of equity. In detail, this means that when the government increases financial input, the rate of increase in the health budget is slightly higher than that of the increase in the government budget, and the rate of increase in the preventive budget is slightly higher than that of increases in the total health budget. At the same time, both collectives and individuals should increase financial inputs. For example, the township factories could assign more health investment from their yearly profits.

The uneven distribution of health personnel in rural areas can be changed in several ways:
1. The urban areas should support the rural areas. This includes preferential policies of health investment, and technical personnel. Urban health personnel could be encouraged to spend time in the rural areas. It could be a condition of further education or promotion for urban doctors that they have had rural health work experience. Medical students could also go to the rural areas for 1–2 years after graduation. The policy would need an earmarked budget in order to ensure a certain quantity of urban health personnel in the rural areas.

2. One method is to enroll, and train students at all levels on the basis of assigning them back to the areas where they came from. Therefore, enrollment will particularly favour students from rural backgrounds. The courses should include special training in rural health work.
3. The provincial and county government need to improve teaching quality in the county health schools so that they may become the base for training rural health personnel.

4. Rural doctors need to have the opportunity of further study and refresher courses, with training fees paid jointly by the government, the collective and the individual. A system of retirement insurance for the rural doctors who worked in the collective health village station could be set up to reduce the number of people leaving the job.

7.2.4 Price structures must be adjusted.

The prices of health services must not depend on the free market completely. Market competition can increase economic benefit but at same time, health service delivery in the market must consider social benefit. The government should manage the health care market actively. By controlling the price of health services, the government can adjust the charges. It is necessary to increase the price of technical services such as operations. The registration fee can also be increased. The costs of medicines and charges for clinic tests should be reduced. The profit from medicine sales will therefore be replaced by the profit from technical services. Patient charges should also exclude labour costs, for the salary of medical personnel is already paid by the State. Implementing these measures can reduce the dependence of the hospital upon medicine sales, cut the profits to pharmaceutical companies, increase the income of hospitals and change their economic situation without adding to the patients' economic burden. The real values of doctors work would be embodied in the charges.
7.2.5 To implement primary health care is the general goal. According to the Chinese situation, the stress in rural health work should be put on implementing primary health care fully. It is an important means by which to strengthen rural health work by the Ministry of Public Health. But rural preventive work is also a pressing matter at the moment. Rural preventive working teams should be set up to control infectious diseases quickly. The spread in infectious diseases has been noted over the last decade. The reason is that most village health stations were private enterprises and the basic preventive team is replaced by the private doctors.

In general, the development of rural health care must rely on central and local government and the support of society. It should embody the principle that the stress of health work is put on the rural areas in policy making and arrangements for health expenditure. The uneven allocation of health resources between the urban areas and the rural areas needs to be gradually changed so that rural health care will show real development and progress by the year 2000.
APPENDIX: QUESTIONAIRES

1. Health service investigation for rural residents (household)
   1). Sex  a. male  b. female
   2). Age________
   3). Occupation  a. peasants  b. private business  c. cadre
                  d. worker  e. other
   4). Education  a. illiterate  b. primary school
                  c. middle school  d. high school
   5). The kind of medical system used
       a. solo  b. group  c. collective  d. other
   6). How do you feel the self-finance medical system?
       a. satisfactory  b. unsatisfactory  c. other
   7). If unsatisfactory: What are your reasons?
       a. if you are ill, you can become impoverished.
       b. the poor level of preventive work.
       c. the rural doctors are unsupervised.
       d. the 3-tier network lacks coordination.
       e. other.
   8). Number in family________.
   9). The number of people suffering from the chronic disease in the family________.
 10). The age of each family member________.
 11). Health condition in last two weeks
       a. Number of times 'feeling ill'________.
       b. Number of days in bed because of illness________.
 12). Medical contacts in the last 2 weeks
a. Characteristic of the village health station:
times, costs of treatment, running costs, levels of satisfaction
with the service. reasons for unsatisfaction (high medical
expenses, poor technical level, poor health service attitude, low
doctor's technics, other).

b. township hospital: times, medical expense, satisfactory
level, unsatisfactory reasons (high medical expenses, poor
technical level, poor health service attitude, low doctor's
technics, other).

c. county hospital: times, medical expense, satisfactory
level, unsatisfactory reasons (high medical expenses, poor
technical level, poor health service attitude, low doctor's
technics, other).

13). Reason for hospital residence:
a. disease b. other

14). Number of patients requiring hospital admission who did not
go______.

15). Reasons for non-hospitalization:
a. no bed available b. expensive
c. did not like to stay in hospital

16). Would you want to join an out-patient health insurance?
a. yes b. no

17). If yes, how much would you pay for medical insurance per
family member per year?__________

18). Would you want to join an inpatient health insurance?
a. yes b. no

19). If yes, how much would you pay for medical insurance per
family member per year?__________
20). What was your family's gross income in 1988? _____ What was your family's net income in 1988? _____

2. The basic characteristics of the County

I. Geography and population
1). Geography
   a. mountain areas
   b. hilly land
   c. land
2). The size of whole area _____.
3). The number of townships and villages _____ and _____.
4). The number of households _____; the numbers of agricultural households _____.
5). The total population _____; the agricultural population _____.

II. Economy (1988)
1). GNP _____.
2). The gross value of industrial and agricultural output _____.
3). The gross value of industrial output _____; the gross value of industrial in townships and villages _____.
4). The gross value of agricultural output _____.
5). Average personal income _____, the yearly income of workers in county and township _____.
6). The yearly income of peasants _____.

III. Education
1). The rate of illiteracy (children 12+ in 1982) _____.
2). The rate of school enrollment (children below 14 in 1988) _____.
IV. Health condition
1). Infant mortality rate in 1988_________.
2). Maternal mortality rate in 1988_________.

V. Health organizations and staffs
1). The number of county health organization_______;
bed_______; staff_______, among them health professional personnel_______; doctor_______; clinical technician_______;
nurse_______; graduated from medical university (5 years)_______; graduated from medical university (3 years)_______; graduated from middle health school_______.

2). The number of preventive health station_______;
staff_______, among them health professional personnel_______;
doctor_______; clinic technician_______; nurse_______; 
graduated from medical university (5 years)_______; graduated from medical university (3 years)_______; graduated from middle health school_______.

3). MCH_______; staff_______, among them health professional personnel_______; doctor_______; clinical technician_______;
nurse_______; graduated from medical university (5 years)_______, graduated from medical university (3 years)_______, graduated from middle health school_______.

4). Township hospital_______; beds_______; staff_______, among them, health professional personnel_______; doctor_______; clinic technician_______; nurse_______; graduated from medical university (5 years)_______; graduated from medical university (3 years)_______; graduated from middle health school_______.

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V. Health services
1). Number of patients who were treated in county hospital; in township hospital; in village health station.
2). Number of patients who were discharged from county hospital; township hospital.
3). Bed occupancy days in county hospital, in township hospital.
4). The bed utilization rate in county hospital, in township hospital.
5). Bed turnover in county hospital, in township hospital.

VI. Medical expenses
1). County governmental financial income, financial expenditure.
2). County health expenditure; among them, county hospital expenditure, expenditure on preventive activities, township hospital expenditure.
3). Special health expenses; national health insurance; labour health insurance; family planning expenses.
4). Health capital construction.

VIII. The financial balance of health organizations
1). The income of county hospital; among them, from
medicine sales, from clinical tests, from examination and treatment.

2). The income of township hospital; among them, from medicine sales, from clinical tests, from examination and treatment.

3). The expenditure of county hospital; among them, for medicine, for other medical materials.

4). The expenditure of township hospital; among them, for medicine bought, for other medical materials.

3. County hospital and county Chinese traditional hospital characteristics

I. General condition

1). The size of hospital.

2). The amount of fixed assets, the value of medical equipment.

II. Health personnel

1). The number of health staff; among them, health administrators; clinical technician; ancillary personnel.

2). The structure of health personnel
   a. senior doctor, b. junior doctor,
   c. nurse.

3). Education
   a. medical university (5 years),
   b. medical university (3 years),
   c. middle health school.
d. high school

e. middle school

f. primary school

4). Service characteristics:
a. the number of departments in hospital,
b. the number of beds,
c. the annual number of out-patients,
d. the annual number of in-patients,
e. total hospital stay (days),
f. the number of patients discharged from hospital annually,
g. the bed utilization rate, bed turnover,
h. medical income: inpatient service; outpatient service; medicine sale; operation on patient; other.

5). The balance of income and expenditure.

4. The medical expenses of out-patients in county and county Chinese traditional hospitals

1). Name

2). Sex

3). Age

4). Occupation

a. worker

b. peasant

c. cadre

d. teacher

e. other.

5). The kind of disease

6). Medical system

a. national health insurance

b. labour health insurance

c. CMS

d. self-financing.

7). The medical expenditure of the outpatient service; among
registration fee_____; medicines_____; tests and
treatment_____; other_______.

5. The medical expenses in-patients in county and county Chinese
traditional hospitals
1). Name 2). Sex 3). Age
4). Occupation a. worker b. peasant c. cadre
d. teacher e. other.
5). The kind of disease________.
6). Medical system
   a. national health insurance b. labour health insurance
c. CMS d. self-finance.
7). Number of days in hospital________.
8). How much did the patient pay for hospital expenses (Chinese
Yuan) from his own pocket?
   a. western medicine________ b. Chinese medicine________
c. treatment fee________ d. bed fee________
e. examination________ f. operation________
g. material________ h. X-ray________
i. ultrasound scanner________ j. ECG________
k. oxygen______ l. other_______

9). The distribution of diseases in various departments
   a. internal medicine____ b. paediatric____
c. surgical______ d. gynaecology and obstetrics____
e. infectious______ f. Chinese traditional_______
g. eyes, ears, nose and throat________
6. Township characteristics

I. Basic condition

1). Geography  a. mountain area   b. hilly land   c. land
2). The amount of villages, households.
3). The total population: among them, the agricultural population.
4). The number of villages which have public transport.

II. Economic condition

1). The gross value of industrial and agricultural output, net output.
2). The value of agricultural and side-line output; the gross industrial value in townships and villages.
3). The township government financial income; and the expenditure, among them, health investment for township hospital, other health investment.
4). The average peasant income, an average income of workers in township and village.

III. Education

1). The rate of illiteracy (children 12+ in 1982).
2). The rate of school enrollment (children below 14 in 1988).

IV. Health condition (1988)

1). Infant mortality.
2). Maternal mortality.
3). The amount of peasants were supplied by safety water.
V. Medical system

1). The amount of peasants attending the CMS collective labour health insurance.

2). Is there the township managerial department of the CMS in township?
   a. Yes  b. No
   if "yes, staff______, salary______.

3). The amount of financial support from the CMS______, township hospital______, township government______, other______.

7. Township hospital characteristics

I. Health personnel (the end of 1988)

1). The number of health personnel______, among them, health professionals______.

2). The structure of health personnel
   a. senior doctor  b. junior doctor
   c. senior nurse  d. junior nurse

3). Retired staff______.

4). Number of staff working in prevention______, among them, senior doctor______, junior doctor______.

II. Health service (1988)

1). the annual number of out-patients______.

2). the number of beds______.

3). the number of patients were discharged from hospital annually______.

4). length of patient stay______.

5). average bed occupancy______(days).

6). the utilization rate of beds______.

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7). medical income: inpatient service; outpatient service; medicine sale; operation on patient; other.

III. The source of medicines supplied:
1). County medicine company.
2). Other resource.
3). Western medicine, Chinese traditional medicine.

IV. Fixed assets and health investment.

1). Registration fee.
2). Hospitalization fee.
3). Test and treatment fee.
4). Operation fee.

VI. The balance of income and expenditure in last five years
1) Income
   a. county health bureau investment.
   b. township government investment.
   c. health service income.
      i. outpatient service, medicine and treatment
      ii. inpatient service, medicine and treatment
   d. other.
2). Expenditure
   a. medicine.
   b. salary of staff.
   c. salary of retire staff.
   d. medical equipment bought.
e. medical equipment repaired.
f. capital construction

g. staff training

h. other

VII. Medical equipment.
1). What kind of medical equipment?
2). Details of purchase source of payment (resource, date of purchase, imported, or made in China)

VIII. Retired staff
1). Name 2). Sex 3). Age 4). Professional title
5). Education 6). Department 7). Whether or not re-employed.

8. Doctors in township hospital
1). Age 2). Professional title 3). Education

4). Following health reform, what do you think about be following?
Your income has a. increased a lot b. increased little or somewhat
c. no change d. decreased
Your work has a. increased a lot b. increased little or somewhat
c. no change d. decreased
The quality of medical care has a. increased a lot b. improved little or somewhat
c. no change d. gone down
Your technical level has a. improved b. gone down
c. no change
Do you think your hospital is competitive with the village health station?
   a. yes       b. no       c. not clear

5). Do you think the responsibility system on applied to hospitals should cease?
   a. yes       b. no       c. no comments

6). The township hospital belongs to township government: What do you think about that?
   a. approve   b. object   c. no comments

7). Do you want to leave the township hospital if possible?
   a. yes       b. no

8). What do you think about possible future developments in township hospitals?
   a. optimistic  b. pessimistic

9). What problems are there in developing township hospital?
   a. poor management  b. lack of money
      c. unclear/don't know

10). What do you think about preventive work since health reform?
    a. improving   b. becoming worse

9. Township leader
1). Title
2). Age
3). Education

4). The township hospital belongs to township government. What do you think about that?
   a. approve   b. object   c. an expedient measure   d. no comments

5). How do you think the scope of township hospitals should be developed?
a. enlarged  b. kept as they are now  c. decreased

The medical equipment should be
a. increased  b. kept as they are now  c. decreased

How do you judge the quality of medical care at present?
  a. it should be improved  b. it is not too bad
  c. it has been improved

6). Do you think that township government can increase gradually the health investment?
  a. yes  b. no  c. do not know

7). Which problem is the biggest problem in the development of township hospital?
  a. capital shortage  b. poor management
  c. low charge for medical service  d. do not know

8). Are you satisfied with the management of township hospital?
  a. yes  b. no  c. do not know

9). Which medical system do you think should be implemented in your township?
  a. the CMS  b. self-finance

10. Village health stations

I. Basic condition

1). geography  a. mountain areas  b. hilly land
  c. land  d. other

2). The number of natural villages________, households________.

3). The total population________; among them, the agricultural population________.
II. Economic condition (1988)
1). The gross value of industrial and agricultural output_______, net output______.
2). The value of agricultural and side-line output_____; the gross industrial value in village_______.
3). Average peasant income_______, Average income of workers in village industry_______.
4). Amount of collective fund_______, amount of health investment from the village committee_______.
5). How much did peasants pay for health last year?_______.

III. Education
1). The rate of illiteracy in 12+ in 1982_______.
2). The rate of school enrollment of children below 14 years old in 1988_______.

IV. Health condition (1988)
1). Infant mortality rate_______.
2). The maternal mortality rate_______.
3). How many families have received a "one child certificate"?_____. Percentage of all families_______.

V. Medical system
1). The number of peasants who have attended the CMS_______, How much did they pay for it?_______.
2). The number of peasants using the self-finance medical system_______.
3). The number of peasants with medical health insurance______, How much did they pay for it?_______.

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VI. Compensation in the CMS

1). The proportion of compensation for outpatient services
   a. in village health station________,
   b. in township hospital________,
   c. in county hospital________.

2). The proportion of compensation for inpatient services
   a. in township hospital________,
   b. in county hospital________,
   c. over county hospital________.

VII. Village health station

1). When was village health station built?________, service radius________.

2). The number of rooms________,
   proprietary rights: a. village committee b. rental c. private

3). Does the clinic have:
   a. sphygmomanometer a. yes b. no
   disinfectant equipment a. yes b. no

4). Who owns the village health station?
   a. solo b. group c. collective d. township hospital set up

5). The number of health staff________, among them, rural doctors________, health workers________.

6). Total income________, how much, from village committee________, medical service________, special subsidy from township or county (immunisation, health education, MCH family planning)________, other________.

7). Costs of medical services:
   a. injection fee________.
   b. register and treatment fee________.
c. medicine

8). Total expenditure, how much, salary, medicine, equipment.

9). The number of patients who were treated in the village health station, of these, how many outpatients, patients who stayed at home and were visited; transferred to township hospital and county hospital.

10). How many kinds of western medicine does the clinic possess? Chinese traditional medicine?

11. Village leaders

I: Village leaders

1). Title 2). Age 3). Education

4). Did you receive any document about your village health station?
   a. yes  b. no

5). Did you get any guide about how to run the village health station from your township in the last two years?
   a. yes  b. no

6). What factors influence the village leaders to undertake health work?
   a. poor economic condition  b. no preventive fee
   c. peasant does not support  d. health policy is unclear
   e. different opinion among village leaders

7). Which medical system do you think should be implemented in your village?
   a. the CMS  b. self-finance

8). How did the village leaders evaluate rural doctors?
   a. mainly satisfied  b. mainly dissatisfied
if dissatisfied, what was the reason?
   a. doctors' low education   b. poor skill
   c. no sense of duty   d. less time to do health work

9). What did you think about the rural doctor's income?
   a. high   b. middle   c. low

10). What health work have you done in the last two years?
   a. re-established the village health station
   b. introduced health insurance
   c. set up or organised preventive work
   d. other

11). How much capital did your village put into health in 1988?______

12). Who was in charge of health work among leaders?______

13). Was the village health station checked usually?
   a. yes   b. no

If yes, who did this?  a. township hospital, b. township government, c. county health bureau.

Are there evaluative targets for the village health station?
   a. yes   b. no

14). How much subsidy did you get from the village committee?

12. Rural doctors

1). Name   2). Sex   3). Age

4). How many years have you worked in health care_______.

5). Education
   a. primary school   b. middle school   c. high school   d. college

6). When did training begin_______.

7). Accumulative time of advanced study_______.

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8). The date of advanced study in last two years
9). Place of training  a. county   b. township   c. other
10). Training components
    a. western medicine   b. Chinese medicine   c. MCH
    d. preventive medicine   e. pharmacy
11). How was the training paid for?
    a. individual   b. collective fund
12). Did you obtain the rural doctors certificate?
    a. yes   b. no
13). Working place
    a. solo village health station
    b. group village health station
    c. collective village health station
14). Working time
    a. an average work time each year_______(months),
    b. an average work time at farm each year_______(months).
15). Working content (exclude basic medical work)
    a. immunisation   b. infectious disease reporting
    c. health education   d. MCH
    e. family planning
16). If you did health work whole day (8 hours), how much is your ideal income each year? (Chinese yuan)
    <200, 300, 400, 500, 600, 700, 800, 900, 1000, 1100, 1200, 1300, 1400, 1500, >1500.
17). How much was your income last year?__________ how much, from medical work__________, from farming work__________.
18). Do you receive any health documents?
    a. yes   b. no
19). Do you satisfied with your work?
   a. yes    b. no    c. no comment/don't know

20). What factors have produced your answer?
   a. economic factor    b. leader trust
   c. peasant trust      d. co-ordination with colleagues
   e. chance for advanced study    f. the benefit for retirement

13. County leader: the developing policy concerning the rural health three tier network
1). Sex       2). Age       3). Education       4). Title

5). What do you think about your county health organization?
   i. level of medical equipment
      a. needs increasing    b. keep present status
      c. no comment          d. needs reducing
   ii. beds
      a. need increasing    b. keep present status
      c. no comment         d. needs reducing
   iii. health personnel
      a. need increasing    b. keep present status
      c. no comment         d. needs reducing
   iv. medical quality
      a. reasonable         b. should be improved
      c. unclear

6). Is it necessary to build a Chinese traditional hospital in your county?
   a. yes    b. no

If yes, what sort of hospital should it be?
   a. solely of Chinese traditional medicine.
b. western medicine and Chinese medicine together.

the scale of hospital
a. the number of health staff
b. the number of bed

7). Which health organisation should be strengthened first in your county?
a. county hospital  b. county Chinese traditional hospital
c. county epidemic station  d. MCH station
e. other

8). Is it necessary to implement the economic responsibility system in hospital?
a. yes  b. no
c. a makeshift measure  d. unclear

9). Do you approve of the fact that the township hospital belongs to the township government?
a. yes  b. no  c. unclear

10). Which medical system do you think should be implemented in your county?
a. self-finance system  b. the CMS  c. unclear

11). Which level of health work do you think should be strengthened?
a. county  b. township  c. village

12). The main problems of developing county health organisations are:
a. lack of money  b. patient charges are too low
c. the rural residents are too poor to afford the medical expense.
d. management problem
13). Looking at the financial resources in your county, will it be possible to increase the health investment in future years?
   a. yes, but not too much
   b. no.
   c. health investment will be reduced.
   d. unclear.

14. National health insurance conditions
1). County name__________.
2). Total expenditure__________
3). Population are covered__________
4). An average expenditure each person__________
5). How much did people pay for health services?__________
6). How much did work units pay for their staff's health services?__________
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