Commentary

The Barefoot Doctor: Shanghai County Revisited

JEFFREY P. KOPLAN, MD, MPH, ALAN R. HINMAN, MD, MPH, ROBERT L. PARKER, MD, MPH, GONG YOU-LONG, MD, AND YANG MING-DING, MS

Abstract: Since a 1981 review of health status and health services in Shanghai County, there have been considerable social and economic changes in the People's Republic of China. A major question currently is the impact of the new economic "responsibility system," which was introduced in 1982, on the cooperative health structure and the "barefoot doctors" (BFDs). Investigators in other areas of China have reported the collapse of the cooperative systems and a shift in the role of the BFDs as a result of incentives for them to spend more time in agricultural production. In Shanghai County, however, BFDs continue essentially full time as before, salaried by the brigade, with fee-for-service charges prohibited.

Recent evidence from Shanghai County shows that the health care system and those who direct it can remain flexible and respond positively to changes in the social, economic, and political structures. (Am J Public Health 1985; 75:768–770.)

Introduction

In the period April–July 1981, United States and Chinese scientists conducted a study of health services in Shanghai County, a political jurisdiction with a population of approximately 565,400, just outside the boundaries of the city of Shanghai, People's Republic of China. The study documented progressive improvements in the health status of county residents over the past 30–35 years.[1] Since then, however, major changes have occurred in the economic structure in China, with the "responsibility" system replacing the 'work point" system. The responsibility system extends to all parts of the workforce—white collar, blue collar, service—agricultural, industrial, and technical.[2,3] In the responsibility system, a farmer is held responsible for assuring a certain level of production from the field under his/her care. Any production in excess of the quota can be sold in the free market and the farmer can keep the profits. Associated with this change in the economic system has been a general increase in productivity, a decrease in effectiveness of the "one-child" family program, and an increase in the proportion of women farmers staying home with children rather than working in the fields.[3]

In early 1984, we had the opportunity to update information in several of the areas studied earlier. One area of particular interest to us was the change in the training and responsibilities of "barefoot doctors" (BFDs). BFDs are the brigade-level rural health workers who, since 1958, have been selected from among the peasants of the brigade to provide basic health care, but who continued to work in the fields on a part-time basis.[4] Since 1981, BFDs have increased their health care responsibilities and reduced their field work time. Their basic activities are outpatient consultations, home visits, preventive health and anti-epidemic work, maternal and child health and family planning, health education, and assorted administrative tasks.

Since the late 1970s, there has been a trend toward upgrading the training of BFDs, examining their knowledge, reducing their numbers, and increasing their supervision.[5] Recent further changes in their training and responsibilities parallel the larger socioeconomic changes occurring in China and its health care system. In this paper we describe the role and function of BFDs in Shanghai County, which, while not typical of China as a whole, illustrates one pattern of "modernization" consistent with the traditions of this category of health workers and different from that described for other parts of China by other recent observers.[2,3]

The Cooperative Health System

Barefoot Doctors of Shanghai County

Up to 1981, the brigade level cooperative health systems and their barefoot doctors (BFDs) were the core of the primary health care delivery system available to the rural (peasant) population of Shanghai County.

Some recent investigators in other areas of China have reported the rapid collapse of the cooperative systems and a shift in the role of the BFDs as a result of the incentives for them to spend more time in agricultural production.[3] In Shanghai County, however, BFDs continue essentially full time as before, salaried by the brigade, with fee-for-service charges prohibited. BFD salaries are set at a level comparable to the median income of county farmers. The cooperative system is similar in organization, financing, and staffing to that described for 1981. Some BFDs, however, have been allocated a small plot of land to work in their spare time; others work in factories. All are allowed two months leave for agricultural or industrial labor. At harvest time, the BFDs are permitted to rotate coverage of the clinic. Overall, their agricultural time probably has increased since 1981. Whether this has cut into their medical responsibilities is not known. There is an impression that initially there was a drop in the use of BFDs by brigade members, but that with extra training, monitoring, and supervision of the BFDs' work, the quality has improved, and use of their services is increasing again. San-lin commune recorded an annual average of five visits to a BFD per cooperative member in 1983, which is certainly lower than the 1980 county average of eight visits per year per member.

The current total number of BFDs is 743, compared to 751 in 1980. Of these, 61 per cent are women, a minor change from 58 per cent in 1981. On average, there are still three or

From the Centers for Disease Control, Atlanta; Johns Hopkins School of Hygiene and Public Health, Baltimore, and Shanghai First Medical College, Shanghai, People's Republic of China. Address reprint requests to Jeffrey P. Koplan, MD, MPH, Building 1, Room 2047, CDC, Atlanta, GA 30333. This paper, submitted to the Journal November 26, 1984, was revised and accepted for publication February 7, 1985.

four BFDs per brigade. In 1983, 45 BFDs changed their profession, with the majority (30) shifting to factory work because of "better income." Only two became full-time farmers. Four were promoted to higher positions in the brigade. Salaries are still paid by the brigade and vary according to the brigade's income. On average, male BFDs in 1983 received ¥762 (¥ = yuan, the Chinese unit of currency, equivalent to US $0.60) and female BFDs ¥678, both up since 1980 by about ¥70 for men and ¥100 for women. Reasons stated for the continued sex differential in salary are "men do harder work" and "because male peasants earn more money." Bonus (merit) pay averages =Y 10–20 per year and is paid by the commune. Private practice is not allowed in Shanghai County. We were also told by the county health bureau director that in a recent national conference he attended the trend toward "private practice" or "fee-for-service" by BFDs was recognized, but the consensus was that it should be discouraged. They felt that they should try to get "BFDs to change back" by encouraging them through increased pay and "honor."

Certification, Training

Since 1980–81, certification of the competence of BFDs through examinations has spread rapidly. Although based on the national policy of upgrading BFDs, the examinations are developed at the provincial level. In Shanghai County these examinations have resulted in approximately 650 out of the total of 743 BFDs (87 per cent) receiving certification as qualified BFDs. The examinations include both basic science questions and clinical material and are usually given at the end of six months' "advanced" training. Certification examinations emphasize curative skills, and the receipt of a certificate usually provides a higher base salary. In one brigade, the only BFD who had not passed the examination was assigned only routine and preventive (anti-epidemic) activities. We believe this practice was also followed in other brigades.

In recent years, training to upgrade the skills of the BFDs has become more developed and systematized.[5] As mentioned above, most BFDs undergo structured training before taking the examination that now certifies them as BFDs. In addition, there is a concerted effort to provide opportunities to BFDs with enough basic education (middle school) to study on the job to become a higher level "doctor," now called rural or village doctors. Currently, 36 of the County's BFDs are enrolled in a one-year full-time course in the county vocational health school.

In addition, 130 BFDs are participating in a two-year part-time course initiated in 1983 and taught via television. BFDs of a given commune meet as a group around a TV set two to three times a week. Most of the BFDs attend even if they are not officially taking the course. The commune supervisor of BFDs (usually an internist) leads a group discussion of the topic after the TV broadcast is finished. This educational approach has not been evaluated. At the county level in 1982, a total of ¥220,000 was spent on training, almost a 150 per cent increase over 1981. Although the final total was not available, even more was reportedly spent in 1983.

Monitoring Performance

At the end of both the one-year and the two-year courses, the enrollees take an examination to be certified as a rural doctor.

One of the most significant innovations introduced in 1982 is an ongoing monitoring and evaluation of the BFDs' performance. Brigade cadres and commune health personnel periodically assess the activities of the BFDs and give them a rating using a set scoring system. In general, the brigade is concerned with subjective measures such as "service to the farmers" and satisfaction of members of the cooperative with the BFDs' service. Commune staff members measure adequacy of clinical care and performance of preventive health activities. In addition to social recognition for good work, merit "bonuses" are based on these assessments. The bonuses average ¥10–20 per year, but were as high as 15 per cent of the basic salary in one commune (San-lin). In this commune, the 15 per cent bonus is given for scores of 96 or more out of 100 possible marks. The bonus decreases for each 5-point score group, so that BFDs with a score of less than 80 begin to be penalized by an increasing deduction from their salary. Although the basic salary is paid by the brigade, the bonus comes from commune funds.

At present, about one-third of the 18 communes in Shanghai County have introduced this system of monitoring and incentives. Two or three times a year, a team (composed of eight or nine people made up of commune and brigade level individuals) visits the health station of each brigade, examines records, checks supplies, equipment, and procedures, and talks to brigade members. Although the discussions are now fairly "open-ended," a more formal checklist or questionnaire is being planned for future use. Scores are weighted more heavily toward preventive activities. In San-lin commune (the first to adopt the system) 25 per cent of the score is for MCH/FP work, 20 per cent for preventive (anti-epidemic) work, and 15 per cent for curative work; the remaining 40 per cent includes a number of activities such as administration and management, pharmacy recordkeeping, maintenance of equipment, sterilization procedures for equipment, and other supportive activities. The weighting of the scores will vary somewhat, depending on the areas of responsibility of the BFD (e.g., the BFD in charge of MCH/FP activities would have these weighted more heavily). The general feeling among county and commune level staff is that this system has improved the performance of BFDs. There seems to be a strong desire on the part of BFDs to do well on these evaluations.

Linked to the above monitoring system has been a county-wide effort to improve supervision. Particularly important has been on-the-spot or more formal inservice training based on deficiencies identified from the monitoring. A decision was made to have one of the internists at the commune hospital be overall supervisor of the BFDs in the commune. These physicians are now being given additional training in preventive medicine and management. Once a month these individuals attend a county-level conference on how to assess and support the BFDs in various areas such as preventive and MCH/FP activities. In turn, the commune doctor calls in one BFD from each brigade monthly for commune-level sessions to discuss problems and participate in special topical sessions, often led by another invited specialist.

The supervisory performance of the commune doctor in charge of BFDs is periodically evaluated by county staff. This new component of supervision is in addition to, and meant to provide better coordination of, the ongoing visits of commune level preventive and MCH/FP staff who regularly visit the brigades and work with the BFDs in carrying out their activities such as immunization and examination of preschool children.

Discussion

Making generalizations about China, including health and health care is perilous, particularly for Western observers with only enough time to make brief visits to selected locales.[6] China is undergoing major economic, social, and health care changes, and today's observations may be inaccurate within a few months, and observations based on some locales may not be applicable to other places or to national trends.[7]

The collaboration between Chinese and American public health workers as part of the US-PRC Health Protocol began in 1979. Since 1981, study has focused on health and health care in Shanghai County, permitting observations to be made and data collected over time in the field by resident experts who understand relevant dynamic social, economic, and political forces. This approach resulted in the baseline extensive study of health services in Shanghai County performed in 1981 and now permits us to comment on the condition of health and health services of Shanghai County in 1984.

Many of the political and economic changes of the last few years have had an impact on Shanghai County as they have on other areas of China. Considerable increase in productivity, per capita income, and privately earned income are all prominent outcomes of these changes. However, leadership in Shanghai County has acted to limit any adverse effects of economic pressures on the rural health system which has been a key component of Chinese health care.

By linking BFD income with median farmers' incomes, the BFDs can share in the increased productivity and profits of their community while maintaining satisfaction and good performance in their work. Thus, the defection of BFDs to other occupations has been minimal, and the BFD workforce has remained relatively stable in number while improving on knowledge and skills.

Evaluation has become a feature of health care delivery since the 1981 study. The evaluation takes the form of testing and certification, on-the-job assessments, and an increased critical attitude by health care providers, consumers, and government cadres. The evaluation techniques have not yet led to a system based on outcomes rather than process, but it is conceivable that this system will develop a "planning by objectives" component and an evaluation system based on the success in achieving those objectives.

"Prevention first" has been theoretically a key feature of the Chinese health care system. However, the public demand for improved services has tended to focus on curative needs. Given the success of immunization programs, water and waste sanitation, and vector control in many parts of China, along with the obvious pressing curative needs for new drugs, diagnostic techniques, surgical procedures, support systems, institutions, etc., the tension between the maintenance and improvement of preventive approaches and the improvement of clinical facilities and skills is likely to continue.

The increasing governmental concern for clinical medicine parallels the increasing role that chronic non-communicable diseases play as major causes of morbidity and mortality in China.[8] The knowledge base of these diseases is limited, thus control efforts rely on diagnosis and treatment. We expect this changing disease pattern to place further pressure on the tendency to direct more resources to chronic disease clinical care, possibly at the expense of preventive efforts. China has a unique opportunity, given the effectiveness of its health education system and what is known about risk factors for chronic diseases, to promote lifestyle policies that could markedly reduce the incidence of some of these diseases and thus maintain "prevention first" as a pillar of non-communicable as well as communicable disease control.

Recent evidence from Shanghai County shows that the health care system and those who direct it can remain flexible and respond positively to the changing patterns of social, economic, and political structures. While the health system may be threatened and is likely to undergo significant changes, we find little evidence in Shanghai County that "modernization has inadvertently caused a once viable model health system to crumble."[3] On the contrary, in Shanghai County the ability of the system to adapt to societal changes is evidence of its viability and vitality.

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