

The Role of Barefoot Doctors

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In China, since 1958, a large number of rural health workers have been trained in the rural areas. They were first called barefoot doctors* in 1968. Barefoot doctors (BFDs) have become an important part of the health work force. They are the primary health workers at the brigade level of each commune and have played an essential role in the efforts to improve the health of 800 million Chinese peasants during the past two decades. Barefoot doctors are assisted in their preventive activities at the production team level by a large number of health aides (HAs). HAs generally spend only about 10 per cent of their time on health work and the rest of their time in agricultural activities. In order to study the characteristics, training, and quality of care of the BFDs currently working in Shanghai County, a special study was carried out in December 1980.

General Characteristics

In 1980, there were 751 brigade BFDs and 2,123 production team HAs in Shanghai County. The average commune had 42 BFDs and 118 HAs, while each brigade averaged three to four BFDs and about nine HAs. Table 1 shows the distribution of BFDs and HAs among the 18 communes of Shanghai County, along with their population and population: worker ratios.

Among the total number of BFDs, there were 318 males and 433 females, with 92 per cent being between the ages of 20 and 39 years (Table 2). Thirty-six per cent of the BFDs had only completed primary school (six grades), 43.5 per cent junior middle school (7th through 9th grades), 16.4 per cent senior middle school (10th through 12th grades), and 4.1 per cent technical school.

Most BFDs have been in practice for some time, with 77 per cent more than five years (Table 3). Currently, new BFDs are recruited only when a vacancy occurs. There is an annual turnover of about 10 per cent.

Selection and Training

BFDs are selected by brigade councils from among brigade members, but have to be approved by the commune councils who, in turn, can seek advice from the commune health staff regarding suitability of BFD candidates.

In general, all BFDs should have had a basic training

course of at least three months duration and refresher courses thereafter to increase their technical knowledge and ability. The survey showed that 51 per cent of BFDs initially were trained three to six months, 29 per cent 6–12 months, and 12 per cent more than one year. Only 8 per cent had less than 3 months training. About 54 per cent of BFDs have had one or two refresher courses after basic training, 22 per cent had three or more, while 23 per cent have received only basic training. Less than one per cent have had no formal training whatsoever.

Practice

The basic activities of BFDs responsible for brigade health services are: outpatient consultations, home visits, preventive health and anti-epidemic work, maternal and child health and family planning, health education, maintenance of adequate drug supplies, and other administrative affairs. In order to study the practice and time allocation of BFDs, a sample study of 57 BFDs in eight communes was undertaken during one week in December 1980. BFDs kept detailed records of the way they spent their time during this week (Table 4). Results showed that, on the average, every BFD spent 3.3 hours in outpatient consultation and 1.5 hours in home visits every day. The latter included a combination of curative and preventive services. Other strictly MCH, family planning, and preventive work consumed altogether about 50 minutes each day, and management of drug supplies and other administration occupied 46 minutes per day. Another parallel study of the services provided by 80 BFDs over approximately seven days shows that each BFD averaged about 10.5 outpatient visits (with a range of 0–35 visits) and 2.5 home visits (ranging from 0–21 visits) per day (Table 5). This study was carried out over a short period of time and involved non-randomly selected BFDs. More rigorously designed studies are planned in the future to obtain more representative data. From prior experience, it has been suggested that during December there would have been less than average preventive work and more than average administrative and accounting work.

In order to examine the professional ability of the BFDs and to certify them according to their current technical level, the Shanghai County Bureau of Health organized two examinations for BFDs in 1979 and 1980. Ninety-one per cent of the BFDs took the examinations; 95 per cent passed and have received certificates to this effect. It has been suggested that BFDs be divided into three levels (primary, middle, and senior) according to their professional ability. BFDs who pass the examination with specified scores might be given a technical title according to their technical level.

Technical supervision of BFDs is currently provided by commune and county level health workers who concentrate primarily on the BFDs' preventive activities. Administrative oversight is provided by the BFDs' own brigade council.

*The term "barefoot doctor" was used on a widespread basis in many communes for the brigade level rural health workers who were selected from among the peasants of the brigade and continued to work in the fields (barefooted in the rice paddies) on a part-time basis. Newspaper articles picked up this term in the late 1960s and eventually popularized it nationwide. Over time in Shanghai County, barefoot doctors have increased their health care responsibilities and reduced their field work time. Currently there is discussion of changing their name to "rural doctors."

TABLE 1—Distribution of Barefoot Doctors and Health Aides in Shanghai County Communes, 1980

Commune	Population Covered	Number of BFDs*	Ratio of Population/BFD	Number of HAs**	Ratio of Population/HA
Ji-wang	10203	19	537	75	136
Zhu-di	9859	23	428	63	157
Hua-cao	16365	36	455	87	188
Xing-jing	17410	36	484	80	218
Hong-qiao	25546	50	511	117	218
Qi-yi	15018	34	442	59	255
Mei-long	22048	44	501	157	140
Long-hua	14587	31	470	81	180
Xin-zhuang	12484	24	520	132	95
Zhuan-qiao	20811	44	473	120	173
Bei-qiao	17412	30	580	91	191
Ma-qiao	31991	69	464	111	288
Cao-hang	13547	29	467	145	93
Tang-wan	19432	39	498	188	103
San-lin	32446	67	484	186	174
Cheng-hang	27504	63	437	195	141
Du-hang	27388	60	457	157	174
Lu-hui	23101	53	436	79	292
TOTAL	357152	751	476	2123	168

*BFD = Barefoot Doctor

**HA = Health Aide

Other Findings

Incomes of BFDs are different, based on the economic level of the brigade to which they belong. Data from 448 BFDs in 12 communes for 1980 show that the average income of BFDs was ¥614* per year. The average income of male BFDs (¥690 per year) was higher than that of female BFDs (¥578 per year). The highest income of male BFDs was ¥1,303 per year, whereas that for female BFDs was ¥1,280 per year. The distribution of the BFDs' income is shown in Table 6. These salaries can be contrasted with that of the highest paid health worker in the county (the chief physician) who receives about ¥2,136 per year. The county average for health workers above the brigade level is about ¥615 annually, very similar to the BFD average.

A study of the attrition rate among BFDs from July 1979 to December 1980 showed that 14 per cent of BFDs in Shanghai County (145 BFDs) changed their job during this

time. Among them, 45 per cent got a job in some enterprise or factory, while 28 per cent moved to the city or went on to a university for higher training. Thirteen per cent of BFDs changed their job because of health reasons. The remainder stopped work as BFDs for other reasons, such as marriage or not passing the certifying examination.

As part of the 1980 certification examination, every BFD was asked to answer the question, "What problems concern you most in your work?" Out of 312 BFDs, 218 answered this question. The problems mentioned by the BFDs most often were related to training (33.4 per cent), administration and management (30.6 per cent), and salary and allowances (25.7 per cent).

Suggestions

Based on our knowledge of the current situation and problems of BFDs in Shanghai County and the results of

*¥ = yuan, the Chinese unit of currency. At the time this paper was written, ¥1 was approximately equivalent to US \$0.60.

TABLE 2—Age Distribution of Barefoot Doctors, Shanghai County, 1980

Age (Years)	Number of BFDs	Per Cent
<20	11	1.5
20-29	313	41.6
30-39	379	50.5
40-49	43	5.7
≥50	5	0.7
TOTAL	751	100.0

TABLE 3—Years of Practice of Barefoot Doctors, Shanghai County, 1980

Practice Years	Number of BFDs	Per Cent
<1	20	2.7
1-4	152	20.2
5-9	233	31.0
10-14	223	29.7
15-19	108	14.4
≥20	15	2.0
TOTAL	751	100.0

TABLE 4—Average Time Allocation of Barefoot Doctors' Work Day, Shanghai County, 1980

Activity	Minutes Per Day Per BFD*	Per Cent
Outpatient Consultation	196	46.4
Home Visits	91	21.6
Family Planning	18	4.3
Maternal and Child Health	7	1.7
Other Preventive Work	17	4.0
Health Education	9	2.1
Drug Supply and Administration	46	10.9
Study	21	5.0
Meetings	17	4.0
TOTAL	422	100.0

*Based on average of seven days.

these studies, we suggest that the BFD system can be strengthened in the following areas:

- *Leadership*—Most of the BFDs work in the forefront of rural health services, including MCH and family planning. It is expected that the demand for health care by peasants will increase along with economic development. This will require that BFD services be improved in both quantity and quality. It is, therefore, necessary to strengthen the brigade council leaders and commune supervisors of BFDs in order that they can solve problems of management and control of BFDs.

- *Selection and Training*—BFDs should be selected from younger commune members with high ideological standards, who will approach their professional work honestly, who have an interest in health services, are healthy, and have a middle school education. Basic training of at least six months is necessary. The county vocational medical school could offer such a training course every year. In addition, short courses at the county or commune hospitals would be desirable, according to the need for continuing in-service training. It is necessary to draft and implement

TABLE 6—Percentage Distribution of Annual Incomes of Barefoot Doctors, Shanghai County, 1980

Annual Income (¥)	Male (N = 194)	Female (N = 254)	Total (N = 448)
<500	2.6	29.9	18.1
500–599	36.6	39.0	38.0
600–699	31.4	22.0	26.1
700–799	15.0	4.3	8.9
800–899	7.7	2.4	4.7
900–999	2.6	2.0	2.2
≥1000	4.1	0.4	2.0
TOTAL	100.0	100.0	100.0

specific criteria for BFDs' certification examinations. For example, those BFDs who have passed the primary level of the examination could then take the secondary level of the examination.

- *Management and Supervision*—BFDs should be guided both by brigade councils and commune hospital staff. The brigade responsibility would be in the areas of ideology and salary, while the commune hospital would be in charge of all health activities, training, and technical competence. BFDs should be divided into several levels, according to their professional ability. Refresher courses must be given to BFDs who are unable to pass the examination.

- *Attrition*—The stabilization of the BFD work force is necessary. BFDs should not be transferred to other jobs, especially when they have worked more than 10 years as a BFD and have had one or more refresher courses. Changes in the BFD's job should involve consultation with the commune hospital and should be approved by the commune council and County Health Bureau.

- *Salary*—In addition to the work point system, BFDs should receive a technical allowance according to their technical ability, the manner in which they provide services, and the opinion of the masses. This technical allowance can be paid from the income of the brigade health station.

TABLE 5—Distribution of Outpatient and Home Visits per Day of 80 Barefoot Doctors Observed for Seven Days, Shanghai County, 1980

Number of Visits per Day	Outpatient Visits		Home Visits	
	No. of Days	Per Cent	No. of Days	Per Cent
None (on leave)	16	2.8	11	2.0
0	} 75	} 12.9	169	30.2
1			8	15.7
2			88	15.7
3			67	12.0
4			49	8.8
5			20	3.6
6–10	175	30.3	54	9.6
11–15	127	21.9	} 5	} 0.9
16–20	68	11.8		
21–25	37	6.4		
26–30	17	3.0		
≥31	3	0.5		
TOTAL	578	100.0	560	100.0