THE DEVELOPMENT OF SYSTEMATIC TRAINING IN RURAL PUBLIC HEALTH WORK IN CHINA[1]

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THE Ting Hsien system of health organization is known to every province of the country. A great deal has been published about the principles and methods of the system and to indicate the results to be expected elsewhere. It seems that the demonstrative stage of the work is over and any district which budgets 10 cents per capita for health will find it profitable to adopt the Ting Hsien system. The lack in many districts, Kiangning, Nanch'i, and Chouping, to mention a few, is for personnel to put the Ting Hsien system into practice. From the first of this year it was, therefore, deemed essential to transform the demonstration concept of the Division to that of training, and the activities of the Division were regulated to meet the requirements for training. The Health Center and the eight subdistrict health stations, however, continued to function. Their activities may be summarized as follows:

Vital Statistics. Since the number of village health workers at the end of 1934 had increased from 27 to 80, the number of registering villages was suddenly tripled. The population in the registration area was 103,087. There were 2,667 births and 2,997 deaths reported by the eighty workers and one city inspector. The crude birth rate was 25.9 and the crude death rate was 29.1. The lower figure for the birth rate is due to incomplete reporting, because the ratio of male to female births is found to be 58.2 to 41.8. In the experimental area, with a population of 13,800, where registration has been carried on for the last four years, the number of births reported this year was 433 and the rate practically the same as last year, i.e., 32.0. The

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death rate of the same area was 36 in 1935 as against 18 in 1934, because of epidemics of scarlet fever and dysentery among children.

The infant mortality for the year was 185.2 per 1,000 births. This has not shown marked changes in the last few years. It is to be noted that the deaths before the age of five make up 44.49 per cent of all deaths. (Table 1).

Table 1. Age distribution of deaths reported in Ting Hsien, 1935.

Age	Number of Deaths	Percentage
TOTAL	2,997	100.00
0- 1	494	16.48
1- 4	839	28.01
5- 9	308	10.28
10-14	83	2.77
15-19	60	2.00
20-24	74	2.47
25-29	66	2.20
30-34	73	2.44
35-39	40	1.33
40-44	57	1.90
45-49	48	1.60
50-54	112	3.74
55-59	64	2.14
60-64	139	4.64
65-69	110	3.67
70-74	171	5.70
75-79	90	3.00
80-89	144	4.80
90 and over	25	0.83

Smallpox remained one of the lowest causes of mortality, and there was no rabies reported this year, but the astonishingly high rates of scarlet fever and dysentery and infant diarrhoea deserve special attention. (Table 2).

The coincidence of a lowered rate of puerperal conditions with that of tetanus neonatorum seems interesting. The increasing percentage of deliveries by trained midwives in the City of Tinghsien, from 1.3 per cent in 1930, 9 per cent in 1933, and 8.1 per cent in 1934, to 13.6 per cent in 1935, may be a factor in this. The educational influence of maternal work is probably more far-reaching than the actual amount of practical work done by a single midwife.

Among the 321 deaths that occurred in the City the percentage of patients attended by modern physicians before death dropped from 35.8 per cent in 1934 to 24.0 per cent this year. The reason is twofold. First, the chief causes of mortality during the year, scarlet fever and gastro-intestinal infections, come under the category of internal medicine. Nowhere in the country has the public developed

confidence in scientific methods of treatment in internal medicine. Second, the suspension of the Missionary Hospital in the suburb of the City leaves the Health Division the only agency practising scientific medicine in the district. The actual number of patients receiving modern care before death was 77—over 85 per cent of the figure for 1934. This means, disregarding the unusual conditions of epidemics, that the Health Division really rendered over 80 per cent of all the modern medical care obtainable in the City. As a whole, the availability of modern care to the population, at least as shown by conditions in the City, seems to be on the increase and the amount of medical relief rendered further substantiates this belief.

Table 2. Deaths from twenty-seven specific causes in Ting Hsien, per 100,000 population, 1935.

Cause of Death	Specific Death Rate per 100,000 Population
Typhoid fever	25
Typhus fever	2
Dysentery	230
Smallpox	10
Plague	0
Cholera	12
Diphtheria	55
Epidemic cerebral meningitis	9
Scarlet fever	653
Measles	62
Purulent infections	74
Rabies	0
Other infectious and parasitic diseases	104
Convulsions	111
Puerperal conditions	23
Tuberculosis of the respiratory system	178
Tuberculosis of other organs	46
Respiratory diseases	154
Diarrhoea and enteritis (under 2 years)	200
Diseases of the digestive system not otherwise specified	157
Cardorenal diseases	149
Senility and apoplexy	318
Congenital debility and premature births	39
Poisoning and suicide	19
External causes	28
Other causes	89
Ill defined causes	107

Medical Relief. There were 626 patients admitted to the hospital in 1935, with a total of 10,537 days of hospitalization. Compared with last year, there was an increase of 111 inpatients and of 2,782 patient days. 259 operations, including three cases of laparatomy, were performed with no mortality from the operation.

The clinics of the eight subdistrict health stations treated 15,483

new patients, with a total attendance of 67,989. Compared with last year, there was an increase of 26,060 treatments given by the stations. In spite of lack of figures to confirm it, the general impression at the stations is that people are calling upon the clinics for medical relief much earlier in the illness than hitherto. Over 40 per cent of the patients referred to the hospital by station physicians carried out the advice given; and over 25 per cent of the patients at the station clinics were referred by the village health workers.

In 1932, when village health workers were first appointed, they gave 4,109 first-aid treatments, and this was considered encouraging. This year the village health workers gave 137,138 treatments without affecting the attendance at the station clinics. This shows that the hundreds of villagers who needed the 137,138 treatments would have received no attention of any kind if there were no such agent as the village worker, and over 25 per cent of the poor villagers who were advised to visit the stations would never have come to the attention of training physicians if these workers were not giving first-aid treatment.

As far as quantity is concerned, there seems no doubt that the present organization has worked very satisfactorily. The degree of penetration into the general population is increasing every day. The experience of the last four years indicates that the village health workers have done more than technical workers could have done with ten times as much money as these lay workers have had. The confidence of the villagers in the simple procedures as carried out by the lay workers goes beyond ordinary belief. In one village the local community supplies its village health worker with soap, towel, and basin for washing hands. In another village the people collected money to buy a bicycle for the worker to maintain connections with the health station. Technically, vaccinations against smallpox, cholera, and even diphtheria have become much easier in the villages where there is a health worker, and the number of cases for medical relief that were referred to health stations and the Center was also

higher from villages with workers than from those without. It is undoubtedly true that without enlisting the lay assistance of these workers, the influence of the technical personnel would never have penetrated into as many villages as it has done here, and a steady flow of medical knowledge into the life of the villagers would have been a mere dream. On the other hand, the workers are not yet in a position to demonstrate principles of hygiene to their neighbors. Removal of this defect would require a prolonged period of training to cultivate desirable attitudes and habits. Accordingly, a special course of training for those village workers who have to some extent won confidence in their villages will be started next fall.

Selection, Training, and Supervision of Laymen: Village Health Workers. Successful utilization of lay workers depends upon special techniques in selection, training, and supervision. Since the Alumni Associations of the People's Schools were the most powerful community organization in Ting Hsien, they were utilized to select the village health workers. The results were always good, with a few exceptions where the community organization itself was poor. The duration of training was sometimes a point of dispute, but experience has shown that the period should not exceed ten days. In these ten days the volunteers come to the health station every day, thus eliminating the cost of group lodging in a central location, and the village organization pays for one meal at noon time for each man trained. If the period is prolonged, the cost of lodging and food would become a problem for an ordinary village. Furthermore, within the limit of the prescribed practice, a period of ten days was found to be enough for explanation, the subsequent supervised practice forming an integral part of the training process.

The supervision is undertaken by the station physician visiting the workers at regular intervals and by workers reporting to the station once a week. The moral aspect, presenting the more difficult problem with volunteer workers, is controlled by public opinion in each village. Special means also have to be devised to influ-

ence the families of the workers so that the latter may feel free to serve the community. We have found, for instance, that it is important to give health workers "Words of Praise" from the magistrate, in addition to a small annual "bonus" which is graded according to definite standards.

Key Position of Subdistrict Health Stations. Subdistrict health stations occupy the key position in the entire system of organized practice, inasmuch as the village health workers depend upon these stations for training and supervision. As a matter of fact, it has been found that the success of the workers is very closely related to the quality of the respective stations, and where there is an energetic subdistrict physician there are good village health workers. Moreover, the extension of preventive work depends almost entirely on the stations, because only there is the opportunity for continuous contact with the villagers. Last year 80 per cent of the vaccinations against smallpox and over 70 per cent of those against cholera were made possible only through the stations. Even from the point of view of medical relief, about 50 per cent of the patients in the hospital of the Health Center today were referred by the stations, and the number of treatments given in these stations far exceeds in influence those given at the Center.

Although one station with the assistance of village health workers may take care of 30,000 population, and every area of 30,000 population should have a station, it is doubtful whether this standard can be reached in this generation as it does not seem practicable to establish them in small villages. From the standpoint of horizontal social approach, the subdistrict health stations may best be compared with the ch'ü government in hsien administration and higher primary schools in general education. To ensure cooperation between these social organizations, it is also preferable to locate the health stations in large market centers where ch'ü[3] government and higher primary schools are to be found. Therefore, for practical

[3] Ting Hsien is divided into five ch'ü (subdistricts).

purposes, one station in each ch'ü would be a reasonable objective for fifteen years.[4]

For the personnel of each station, a physician, and a lay helper are enough to supervise the village health workers and conduct general medical relief and immunization work. The initiation of school health activities would require an additional nurse. Under the present financial conditions, it is improbable that the health organization of a subdistrict can accommodate more than a physician, a nurse, and an attendant. This minimum set-up in a subdistrict will serve as the connecting link between the lowest form of practice in individual villages and the highest type in a district health center.

The quality of service at the stations is most difficult of all to ascertain. It is a direct reflection of basic training in medicine. Inasmuch as the medical schools in this country have no uniform standard, it is impossible to expect a uniform quality of service. Besides, the training in provincial schools is so poor that fundamental practices of cleanliness, asepsis, and simple diagnostic procedures become somewhat unreliable in the hands of their graduates. Various means for improving the training of station physicians have been adopted, such as rotating service in the hospital under strict supervision, weekly morning conferences in the Health Center, and occasional visits of senior physicians to the stations. All of these measures have proved their value, and experience with them has led us to institute an organized course of training.

Excessive importation of drugs has been a point of criticism of scientific medicine by nationalistic economists. After three years of experience one may say that the station physicians are getting used to a standard set of fifty drugs for everyday use. The same principle has been adopted, though to a lesser degree, in the hospital of the Health Center. As a result, it was possible this year to reduce to $1,938[5] the cost of all the chemicals for the medical relief carried out

4 Ch'ü population would average considerably more than 30,000.

5 All cost figures are based on Chinese currency, which is approximately one-third the value of United States currency.

in the district. Of this amount, about $150 was used for the purchase of alcohol and the same amount for neoarsphenamine, leaving the cost of annual consumption of drugs in the district pharmacy about $1,600 for the year. Taking half of the sum, $800, for the hospital, the cost per patient per day would not have exceeded 20 cents for drugs. As to the other half, the degree of economy is even more striking. With $800 worth of drugs for about 220,000 treatments, each treatment costs about 0.3 cent. Yet even an observant visitor in Ting Hsien may hardly be aware of the practice of economy, as essential drugs for daily use are always available.

The diagnostic laboratory of the Health Center made about 7,000 examinations of blood, sputum, urine, stool, and secretions, including over 200 Kahn tests. The cost per examination per specimen was about 10 cents.

Sanitation and Control of Communicable Diseases. The lack of competent technical assistance, plus the prevailing economic backwardness, has prevented us from making much progress in sanitation. Practical work this year was limited to cultivating sanitation consciousness in the people by working through the village health workers and the primary schools. Thirteen village health workers reconstructed their drinking wells according to our approved design. Out of sixty-seven drinking wells in the schools, thirty-four were remodelled by the end of the year. Compared with the needs of the population, the amount of improvement in schools and in the homes of village health workers is insignificant; but the fact that they do accept our advice and take the trouble to make some improvement has educational value in itself.

An experiment was started this year in training technical personnel. A civil engineer has been engaged in becoming familiar with rural problems and has been attached to health stations to work on minor sanitary devices. In 1936 he may be sent to Nanking for an introductory course in sanitary engineering. After another period of field practice, he may be sent to work under experienced workers,

so that he will become competent to work out technical solutions for the sanitary problems of rural China.

Two more bath houses in addition to the one at the Center were built this year with the cooperation of the local people at Li-Ch'ing-Ku and Hsi-Chien-Yang. The three bath houses were open 121 times, giving a total of 8,546 baths. For the present, only school children and village health workers enjoy the privilege free. In the near future the facilities may be open to the general adult population, although there are certain difficulties in connection with the provision of towels and soap.

Smallpox. Vaccination against smallpox was unusually successful this year. In the spring the health stations and the village health workers made 32,116 vaccinations, including 9,380 primary vaccinations. The number of primary vaccinations is approaching the total number of births in the district per year, and makes up 29.2 per cent of all the vaccinations. The total cost of vaccination work in the spring was $587.15, the cost per vaccination being less than two cents. About one-half of those vaccinated were under 10 years of age. 75.5 per cent of the primary vaccinations were of children under three years old. It seems clear that the vaccinations were reaching the most important groups, i.e., the nonvaccinated and the once-vaccinated.

The number of vaccinations given in the autumn is even more encouraging. In the fall of 1932, although a very strenuous effort was made, there were less than 1,000 vaccinations. This year, in a period of two months, there were 5,630, of which 35.5 per cent were primary. 82.1 per cent of the primary vaccinations were of children under three years. The gradual eradication of an old tradition that children should be vaccinated only in the spring time will undoubtedly contribute greatly to the control of smallpox. The cost of autumn vaccination is a little higher and amounts to about 3 cents each.

Cholera. Although there were no epidemics of cholera this year,

1,391 anti-cholera vaccinations were made at the stations. The willingness of the people to accept vaccination at a normal time shows their confidence in preventive measures. As a matter of fact many more people were willing to be vaccinated than were so advised.

Diphtheria. The method of three injections of toxin-antitoxin mixture is impractical under rural conditions. When the Epidemic Prevention Bureau at Peiping began to produce alum precipitate toxoid, the Health Division was among the first to cooperate with it on an experimental basis.

Last spring, Schick tests were given 575 children between 6 years to 14 years. 539 were read and 19.5 per cent found to be positive. Ninety-two of the group each received one injection of alum toxoid, sixty-four being retested after three months. Among sixty children who went through the first Schick test, one cc. injection of alum toxoid, and retesting, seven remained positive. In other words, it was found that the alum precipitate toxoid was used successfully in immunizing 89 per cent of the Schick-positive children.

In the meantime, Schick tests were given 352 preschool children aged from six months to five years, and 65 per cent were found positive. Therefore, the influence of age on reactions to the Schick test is evidently very great here and for practical purposes inoculation against diphtheria of the preschool group is far more important than the inoculation of school children.

An inoculation campaign was carried out in the month of April during which 168 preschool children were vaccinated. In the following months, 1,214 sisters and brothers of school children under 6 years old were inoculated with the toxoid. Constitutional reactions among these small children were practically negligible.

On the basis of these initial efforts larger campaigns will be carried out next year and it is hoped the anti-diphtheria work will follow more or less the course of anti-smallpox vaccination. If so, it will help demonstrate the method of control under rural conditions of another chief cause of mortality.

Health Education and School Health. The opportunity of the Chinese New Year, when thousands of the people in the villages come into the City, was again utilized for the annual health exhibit held at the district Health Center. 18,670 people attended the exhibit and 13,000 pamphlets on various topics of hygienic interest were distributed. In addition, every corner of the Center was open to the public and the visitors were much astonished to find how the hospital was equipped and how a microscope was used. Proper ways of bathing and feeding children were also demonstrated, appealing greatly to the curiosity of many young women.

Systematic education was conducted on a large scale in schools. A special nurse was assigned to the experimental Integrated Village Schools of the Movement to work out a series of textbooks on hygiene for primary school children. During the year, 1,599 hygiene classes were conducted in schools with a total attendance of 73,479 pupils. 1,140 talks on school hygiene were given to the teachers in sixty-seven schools under our supervision, with a total attendance of 1,738. The practice of hygienic habits was encouraged by the introduction into the schools of 167 earthenware spittoons, 1,546 wash-basins, 3,590 individual drinking cups, and by the improvement of 34 drinking wells and 30 latrines. Twenty-six schools agreed to supply boiled water to students and 640 disinfections of school wells were carried out in those schools where boiled water could not be obtained.

The health corps still forms the most effective means of cultivating cleanliness and health consciousness in the schools. As a result of hundreds of examinations, the final grading of cleanliness of the 5,920 children examined was 52 per cent grade A, 39 per cent grade B, and 9 per cent grade C. The standards of grading were the same as those used in previous years. 271 discussion meetings were held by the members of the health corps in different schools, with an attendance of 6,558.

Among the 5,920 children, 2,990 (50.1 per cent) were found to

have trachoma. After 191,262 treatments, it was found that 669 cases were cured. 727 showed improvement, and the condition of 1,594 remained unchanged at the end of the year. 20,196 treatments were given to 340 cases of ringworm of scalp. 139 were cured, 20 showed some improvement, and 181 no improvement. 7,929 treatments for discharging ears were given to 141 cases of chronic otitis media and at the end of the year 45 were practically cured. 2,159 children with dental defects were brought to the clinics for treatment and 805 cases were corrected. In addition, 2,337 first-aid treatments were given in the normal school by its attending nurse.

The importance of school health has been discussed repeatedly in previous reports, but there are two problems to be met. First, the question of personnel. Our experience shows that the nurse is the most proper and the only worker to be used in providing rural school health service. The nurse can cooperate with school teachers and is capable of giving all the service that is feasible, provided intelligent supervision is available. Besides a slight expansion of the scope of a nurse's work, such as inoculations against smallpox and diphtheria, can also effect the control of communicable diseases in a rural community. Second, the question of cost. Cooperation with school principals is generally possible in the village, and with good cooperation there is practically no need for the Health Department to furnish more than the salary of a nurse and his or her transportation. The schools in Ting Hsien pay for the cost of drugs used in the correction of defects and for the equipment for health education purposes. The total annual cost to the Health Division does not exceed 30 cents per capita. Calculating on the basis of a province like Kwangsi with a school population of about one million children, it would not cost more than $300,000. There this amount of money is already available but because of the lack of trained personnel, nothing has been done. A special course for preparing the proper type of personnel will be described later.

Maternity and Child Welfare. It has been extremely difficult to

decide on the steps to be taken in dealing with midwifery problems. Maternal mortality in the district was known to be at least 12 per 1,000 births and the specific death rate of tetanus neonatorum over 300 per 100,000 population. Both are excessively high compared with even the most backward countries in Eastern Europe. However, midwifery, not to mention child welfare, had no economic foothold in the tradition of the people and midwifery had never been a "profession." Without the guidance of any precedent, the first effort was to introduce a midwife and a fairly experienced physician of obstetrics. This soon failed because the community would not accept a girl only twenty-five years old as a trustworthy midwife and the number of abnormal cases of labor were so few that the physician was a luxury. Furthermore, an analysis of cases handled by the midwife here, and also those handled by trained midwives elsewhere, shows that each delivery costs at least five dollars. As pointed out in previous reports, if midwifery work in a population of 400,000 such as we have in Ting Hsien, is to be handled by trained midwives, the total cost including transportation would amount to at least $45,000. This is higher than the available budget for an entire program of medical protection. Referring difficult cases to trained physicians would entail additional cost, and yet without the assistance of a physician, the midwife, who is not supposed to deal with abnormal conditions, would lose as much confidence as she could win. Consequently, the scheme of using the midwife and physician in combination was abandoned.

Training of local "midwives," usually elderly women with some experience in handling births, represented the second phase of effort. In view of the illiteracy and ignorance of these women, special material for instruction had to be prepared, and a mature midwife with the best possible intellectual background and a high spirit of service was selected to take charge. After several courses had been given, it was found that the training would not be adequate without much practice under supervision. It was practically

impossible to correct the habits of a lifetime, or even to enforce cleanliness. The emergency nature of labor made sufficiently early notification for field supervision and assistance difficult, and even when it was possible the lack of quick and easy transportation was an insurmountable handicap. Thus the second phase was ended.

Before entering upon the third phase, an experiment in the training of young women related to the old "midwives" seemed to hold promise of a solution to the problem, but after a time it was found that this also was impracticable as the young women in the average family were generally too busy to fulfill the responsibilities of this extra and irregular work.

The third phase, essentially an attempt at education and demonstration, was evolved during the past year.

a. *Short Course for Housewives.* Organized training of flexible individuals was considered the most reliable means of applying knowledge. The first class was organized in September this year and held eighteen meetings, with an enrollment of thirty-two housewives and girls over eighteen years old. The course consisted of practice in home hygiene and child care, and, in addition, a few songs and simple homemade toys for children were introduced. Most of the women were interested and there was a total attendance of 303 for the course. The second class was started in November. On account of cold weather, only twenty were enrolled and up to the end of the year fourteen meetings were held. Following its completion the members of the class were organized into a Home Discussion Club to meet once a month.

At present the course is still too short to give thorough training in hygienic conduct; but it will serve as a sifting process through which we shall be able to recognize individuals with enthusiasm and initiative. Another organized course of training for the latter would lead to promoting welfare work with a minimum of encouragement.

b. *Prenatal and Postnatal Visits.* 213 prenatal visits were made by the midwife to homes of pregnant women and 224 attended prenatal and postnatal clinics. Compared with previous years, there is no significant increase of attendance.

c. *Deliveries.* Forty-nine deliveries were made by the midwife of the Health Center, thirty at the Center and nineteen in homes. There were

seven cases of difficult labor, but all were properly attended. Although the number of deliveries is rather small, many people in the City have recognized the superiority of the service rendered by the Division. In many cases young pregnant women were anxious to be attended by the trained midwife, but their mothers-in-law prevented them from requesting such help. The education of the elder women may be impossible, which would account for the slowness of the maternal work. The improvement of midwifery practice seems to be a question of two or three generations, even provided continuous education is carried on. Furthermore, upon analysis of the available data, out of the normal cases of delivery, about 40 per cent (19 out of 49) were done at home. The lack of tradition for delivery care in an institution rather than at home forms another obstacle to the rapid development of trained service in a rural community.

d. *Child Health Contest.* In the spring 406 children participated in the annual health contest. They were examined for cleanliness and general health, diseased children being rejected. Some parents brought their children from many miles. The local leaders, political and educational, were invited to be present at the contest. As prizes, useful articles were collected through voluntary contribution and given to the mothers of the children in the best state of health.

e. *Birth Control Education.* 835 families in fifteen villages were visited by a member of the Division. Among about 108 families needing birth control information, thirty-four accepted the advice. Economic difficulty, excessive number of children, and poor health of the mother were found to be the chief reasons for applying for the use of birth control devices.

Because of its private nature, there is an infinitesimal amount of sound consciousness for maternal welfare in the community. All the efforts mentioned above were intended to develop this consciousness, for without its application of modern knowledge by trained personnel, however strenuous, is economically impractical.

TRAINING

By means of the field activities recounted in the foregoing, three types of training have been organized. They may be briefly described as follows:

Postgraduate Course in Rural Health for Physicians. Before dis-

cussing the contents of the course it may be necessary to make a few general remarks. In the first place the word "postgraduate" needs explanation. Generally, it refers to additional training following an undergraduate course. But in view of the diversity of undergraduate training in the medical schools of China, it was extremely difficult to specify the requirements for postgraduate training. If the standard were limited to the highest type of undergraduate training, such as that given by the Peiping Union Medical College, candidates for the course would be few and they could do so little after completion of the course that the idea of extending the methods as worked out in the demonstrative stage would be hopeless. On the other hand, if the standard were fixed at the lowest type, such as that offered in the Taiyuanfu Provincial Medical School, the candidates would be so poorly trained, even in their theoretical background, that no training of a postgraduate nature could be built on it. Consequently the meaning of "postgraduate" is relative; and the standard of undergraduate training provided by the majority of ordinary medical schools has to be used as the working basis. Special training to overcome undergraduate deficiencies has to be considered an integral part of a practical postgraduate course in rural health in China.

Lastly, a postgraduate course is best conducted through responsibility, under supervision, for activities. Inasmuch as the field facilities in Ting Hsien are rather extensively developed, and are directly under the control of the Division, the opportunity of developing "learning by doing" seems unique. Each of the instructors has practical field responsibility, and development of incidental teaching in the routine process of discharging responsibilities and of discussions on personal experience are considered the most valuable type of postgraduate guidance in practical rural health.

The curriculum is scheduled for two years, the course for the first year including general rural problems; asepsis and elementary nursing practice; methods of diagnosis; health education and school health; training and supervision of village health workers; general principles of rural public health; control of smallpox; sanitation; rural medical relief; and administrative problems of rural health and practice in the health station. The second year is devoted to supervised practice in the health center and at health stations. This year four graduates of the Hopei Provincial Medical School were selected for training.

Postgraduate Course in Rural Health for Graduate Nurses. This course was created this year to answer the great demand for rural health

workers in country places. It started in November and is prescribed to last six months. The contents of the course include the following objectives: (a) To generalize school health work in accordance with available methods and experiences. (b) To supervise local midwives and detect early signs of abnormal labor. (c) To help control chief communicable diseases by performing vaccination against smallpox, diphtheria, cholera, and typhoid. (d) To help supervise village health workers. (e) To conduct health teaching to organized groups in villages.

Cooperative Training with Other Institutions. The Division continued to cooperate with the Peiping Union Medical College in a demonstration course in public health. Twenty-two third-year students and three postgraduate students spent three days in studying the work in Ting Hsien this year.

The Head of the Division was invited by the Director of the Hopei Provincial Medical School to take charge of the School's regular course in public health for undergraduate students. Four hours a week were devoted each week to a class of thirty-five students until their graduation in July, 1935.

The nursing students of the P.U.M.C. continued to come in groups for one week's practice in rural public health nursing. The midwife of the Division was also asked to take charge of the midwifery class in the Hopei Provincial Medical School for a period of six months.

The Division in addition undertook various teaching responsibilities for the Institute of Political and Social Reconstruction. At the moment of writing, the senior associate of the Division has been lecturing to a group of government workers at Suiyuan, a northwestern province of Inner Mongolia.

In preparation for the position of district health officer of Lanch'i, the experimental district of Chekiang, the National Health Administration sent Dr. Ho Ting-yao to Ting Hsien for one month practice. The Shanghai Medical School and the Health Department of the Shanghai Municipality also delegated a member of their staff to study the work in Ting Hsien for a period of two weeks. We have on the other hand recommended three of our physicians who had a great deal of practical training here to Wusih at the request of Mr. Kao, the director of Kiangsu Provincial College of Adult Education; to Kiangsi at the request of Mr. Chang Fu-liang, the director of the Kiangsi Social Welfare Centers under the National Economic Council; and to Hua Hsien of Shensi under the National Health Administration.

CONCLUSION

The foregoing descriptions lead us to conclude that the health organization has proved absolutely its workability under the rural conditions of North China. Its influence on the development of rural health in the country has also achieved national scope. The initiation of training in a systematic manner is intended to meet the various demands from different provinces for personnel. These would not have been possible without the technical and financial assistance of the Milbank Memorial Fund accorded since 1929.

However, there are two more necessary conditions for success. The first is the financial support of the health demonstration. This of course will depend upon the redistribution of the local government resources. In the past two years because of political uncertainties in North China and administrative difficulties in the local hsien government, it has not been possible to obtain any considerable sum of money for health. But from practically nothing at all, the local financial support of the Division has progressed to $12,000, which is one-half of the total budget for the demonstration parts of the work. Provided political changes be favorable, there should be no difficulty in making the demonstrative aspect of the health organization entirely locally supported in one or two years.

Another problem is the fundamental training of physicians. The more contacts are made with graduates of Provincial Schools the more one feels their poor foundation. Without a good undergraduate background it is hard to raise the standard of postgraduate training and to maintain its efficiency. Ideas for a basic medical education have been crystallized in an article published in the September, 1935, issue of the *Chinese Medical Journal*. The ideology of the Ting Hsien Health Experiment would be incomplete without demonstrating the proper ways of conducting basic medical training to train physicians who will undertake the basic responsibilities that are required of them for the future of rural public health under the conditions of an agarian state.