Miller, Norman N., and James C. Strickler. “China’s Revolution in Health.”
American Universities Field Staff Reports 3 (1980): 1–24.

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1980/No. 3
Asia

by Norman N. Miller and
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[NNM-1-'80]

CHINA'S REVOLUTION IN HEALTH[1]

China today is in the midst of a peaceful revolution that is dramatically changing the very nature of that vast country. Since the death of Chairman Mao and the political demise of the "Gang of Four," there has occurred a major re-emphasis on change and Western technology. To achieve their political goals the new regime, under Chairman Hua Kwo-Fenj, has emphasized "four modernizations": science, industry, national defense, and agriculture. Health and medicine are seen as a part of the scientific arena. The planned changes in this sector will plunge China into a Western form of technology that will certainly have long-term consequences for the much acclaimed paramedical barefoot doctor system. Health modernization, the Chinese acknowledge, will open dangerous possibilities of unmanageable costs and human inequities. The question of what technology is truly appropriate is the central health question in China today.

The new climate of change is evident to any contemporary visitor to China. There is a refreshing candor among professionals, students, and workers, even in informal conversations on the streets. There is an amazing dismissal of the Cultural Revolution and the Gang of Four as a national disaster, a period thought to have put China back at least ten years and that can only be rectified by rapid modernization and liberalization. Every professional meeting or seminar begins with an encapsulation of recent political history:

- -- The terrible state of the people before the Liberation of 1949
- -- The achievements made under Mao after the revolution
- -- The great damage inflicted on the nation by those who twisted and bent Mao's policies, particularly the Gang of Four, who sabotaged the Cultural Revolution and did enormous damage to science, medicine, education and agricultural and industrial production
- -- The fact that there have been dramatic achievements since this leadership was eliminated
- -- The fact that there is currently great need to press ahead in the four modernizations, the wish to receive criticism and suggestions from all quarters

Overall, new technology is the new ideology—and herein lies a forward planning of titanic dimension. What in fact is the "appropriate technology" for a nation whose health system has done very well in many ways? Will not the thrust for complicated tertiary care systems lead to enormous costs, to fragmented benefits only for a few, and to a new generation of specialists plus all the other drawbacks the West has experienced with its high technology health system. Could not the spiraling cost of health care bankrupt a limited economy as it has threatened to do in the West? Will not rapid development carry with it the "disease and development" syndrome, that unfortunate backlash of illness caused by rapid development that has occurred elsewhere in the world, particularly in Africa?[2]

The Chinese we met were well aware of the appropriate technology problem. Most felt it was a necessary price to pay, and most felt rapid modernization was implicit in the "Four Principles of Health."

How Do You Know What You Think You Know About China?

China today has an historic level of openness to the visitor and there is no doubt about Chinese sincerity in establishing major exchanges with Japan and the West. Candor, frankness, and self-criticism are commonplace; discussions on the street with ordinary workers or farmers can lead to comments about the regime, past and present, that parallel the political outspokenness of the West.

There is also no doubt that the Chinese want their visitors to see what they consider to be the more positive sides of their culture. Tour groups are programmed together, no matter what their interests, and although divergence is possible, it is not encouraged. Even professional study groups visit the well-polished model schools where hand-shaking toddlers dance and pass the friendship message.

The regimentation of visitors, coupled with an enormous shortage of facts, figures, statistics, and research findings, make any conclusions difficult. This is true for the Chinese as well. In fact, the Chinese today openly blame the Cultural Revolution for destroying their earlier systematic attempts to gather data and to synthesize statistics. There remains a serious fragmentation in reporting and information exchange, particularly between the provinces themselves and between the provinces and the central government. In some fields of knowledge key information is lodged with a few individuals who are often in relatively remote places, isolated from their colleagues.

These problems, coupled with the fact that most Westerners must speak through interpreters, makes the establishment of even one "truth" a major undertaking. For some time to come most of what we know about modern China will be by observation, intuition, and cautious guesswork.

China's Health Policy: Four Principles of Health

To attain "modernization" in the health sector there is a great deal of political sloganing and mass campaigning, particularly concerning Mao's "Four Principles of Health":

1. *Prevention.* China's accomplishments in preventive medicine are extraordinary. It is one sector that clearly surpasses nearly every nation of the world. Prevention is given top priority by both the government policymakers and the health care practitioners. Immunizations and early detection of illness are stressed. The four pests (rats, grain-eating sparrows, flies, and mosquitoes) are vilified. Preventive services are extended to maternal and child care areas, and family planning (see below) constitutes a massive national campaign.

2. *Serve the Workers, Peasants, and Soldiers:* Simply in terms of size, China's health care system is enormous. Of the 8.7 million health workers (in a nation reported to be 972 million in September 1979) nearly 2 million are "barefoot" rural doctors, urban "lane" doctors, or "factory" doctors serving at the lowest paramedical rung of the medical ladder. Service is constantly emphasized. Basic medical services are widely available, access is easy, and costs are low. There is no doubt that China has a superior mass system and that for probably 95 percent of illnesses the system serves the people exceptionally well. It is equally true that patients with illnesses that require high technology care (e.g., organ transplant) simply cannot survive.

3. *Medical Work as Part of the Mass Campaign*: The integration of medical work into the mass campaign means to tie it to all other modernization efforts. These include:

- -- Involving individuals in improving their health care facilities at the same time they are involved in production of goods and services;
- -- Mobilizing rural workers in mass cleanup and prevention campaigns, such as mass immunization or mass attacks on schistosomiasis;
- -- Growing and preparing herbal remedies along with agricultural products in rural communities; and
- -- Allowing the selection of the paramedics ("barefoot," "lane," and "factory" doctors) to be made by their coworkers and constituents, with the understanding that they be

trained and returned to their locale to practice, as well as participating in the production work of their brigade.

The overall impact of this policy is seen as one of integration, self-reliance, and avoidance of an elitism that would separate the health workers from the masses. There is also an accompanying mass education element in the "integration" policy. In fact, the new pressures of technical modernization may bring unforeseen problems involving greater training and specialization. The new specialists will be purely medics, separate from the commune or brigade workers in status and occupation. There is now a plan to upgrade the barefoot doctors.

There is also concern that as the technology becomes more sophisticated, greater fragmentation and isolation of the practitioners will occur. Everywhere mass health education campaigns are carried out in schools, in public demonstrations, and through the use of radio and television, newspapers, postage stamps, and public posters. Posters exalt proper behavior or warn of the consequences of everything from hookworm, malaria and schistosomiasis to failure to keep clothes clean or food properly stored. Physical fitness and athletic powers are emphasized for all ages. Tai Chi, a system of exercises particularly appropriate for elders, is extolled as a way of staying young and healthy. Shadow boxing is considered a worthy young person's exercise.

What are the problems? Prevention campaigns, as good as they are, have yet to make substantial inroads into a number of public sanitation and environmental health sectors. These remain China's health nemeses. Issues of pollution, human waste disposal, toxic chemicals, occupational health hazards, and other factors that affect human environments are serious issues. Smoking, for example, is just coming under scrutiny, with bans being planned for public places. In Shanghai we witnessed the beginning of China's antispitting campaign, launched by groups carrying posters and marching to the accompaniment of booming kettle drums and tamborines. Radio announcements and posters explained the need to stop spitting in order to prevent disease and described the fines that violators would receive.

What can we expect under the pressure to modernize? In the area of prevention, greater emphasis will probably be placed on adult screening, on mobile clinics, and on the environmental health sector.

4. *Combine Traditional and Western Medicine*: The Chinese, like most societies, can trace their traditional medical practices as far into their past as oral or written records permit. The difference in China is that traditional medicine has been codified and standardized to be uniformly taught in medical colleges and applied in hospitals and clinics. This emphasis came from Mao's statement about the two systems: "To walk on two legs is better than to walk on one." In fact, Mao's insistance that traditional medicine be co-equal with Western medicine gave it a renewed status and emphasis. Under Chiang Kai-shek and the Nationalists traditional medicine was not encouraged, and since the turn of the century traditional medicine had been "slipping in importance," according to many of our informants.

We were told that Chairman Mao codified traditional medicine as a curriculum component for colleges, and that today a mixing of the Western and traditional systems occurs. This kind of medical syncretism or meshing has major importance for the rest of the health sector. How these systems operate and interface is one of the intriguing questions in China today. We focused specifically on this "combined traditional-Western" equation—expressed in medical education, staffing of hospitals, and treatment—in many of the institutions visited. Such an equation, if it works, could be a model for dozens of new nations which are struggling to find appropriate uses of their traditional medical lore in combination with their limited Western-style, modern facilities.

Traditional Chinese Medicine

The codified traditional medical curriculum for colleges in China today is based on ancient West-Central Chinese practices, largely those of the Han people. Traditional Chinese medicine has been standardized for teaching in both Western medical colleges and in the traditional medical colleges. In both settings it has four main components:

1. *Theory*, which deals with the ideas of health harmony and balance, uses the meridians of the body, theory of acupuncture, the medical classics and age-old readings, some of them from the First Century B.C.

2. *Diagnosis and prescriptions*, which teaches methods of diagnosis based on the physician's five senses: touch, sight, hearing, smell, and taste. The patient's tongue condition and color, for example, are of great importance, as are pulses in the body, particularly on the wrist and arm. Prescriptions deal largely with herbal treatments applicable under different conditions, or the use of therapeutics. Practitioners rely heavily on techniques such as acupuncture, cupping, massage, heat treatments and, more recently, mild treatments with electrical stimuli. Surgery in traditional medicine has not been highly developed. Most physicians, even today, prefer to attempt cures with herbal treatments or acupuncture. The rationale is to avoid both the pain and high costs of surgery.

3. *Herbal medicine* introduces the student to a vast array of herbs, roots, bark, leaves, fruits, and other botanical products that have therapeutic value. Herbs are obtained in two ways. First, they are supplied to both hospitals and medical schools by a government medical supply corporation. Second, institutions may buy and produce herbs locally and, to some degree, do teach students useful botanical products unique to the region. Tibetan medicine, for example, was cited as being based on the pharmacopia available in that province, plus the government herbal imports.

4. *Acupuncture*, which, although historically practiced in China, has since 1958 developed a backing of theoretical and research literature that is common in scope. Course work includes theoretical and research findings as well as practical work with acupuncture anesthetics and moxibustian.

Although traditional medicine today is taught in medical schools as a sister discipline to Western medicine, which came to China via early Western missionaries and university work, the codification of the curriculum has introduced a great deal of Western scientific thought into the system, even in China's 20 traditional medical colleges. Biology, anatomy, and biochemistry are taught in the traditional colleges and there is a tacit agreement that much of the diagnoses will tend toward Western precepts. The combined system has indeed lost many of the elements found in folk medicine, such as the use of charms and amulets, dream analysis, extensive use of purgatives, and the assessment of illness as having supernatural causes. There has been a stripping away of the mystical qualities, some of them associated with ancestral worship, found in some folk-healing processes, and a general separation of medicine from religion where healer-priests had a role.

Staffing of nearly all facilities in China is on a combined traditional and Western medical basis. Large medical centers in urban areas have perhaps 25% traditional physicians; district-level and clinic-level facilities will have more physicians trained first as traditional practitioners with emphasis on the combined systems. Virtually all local-level clinics have practitioners with skills in acupuncture and herbal medicine, as well as Western paramedical procedures.

Treatments from both systems are available at major facilities and are often combined in such procedures as acupuncture anesthetics for major surgery or herbal remedies to remove gallstones.

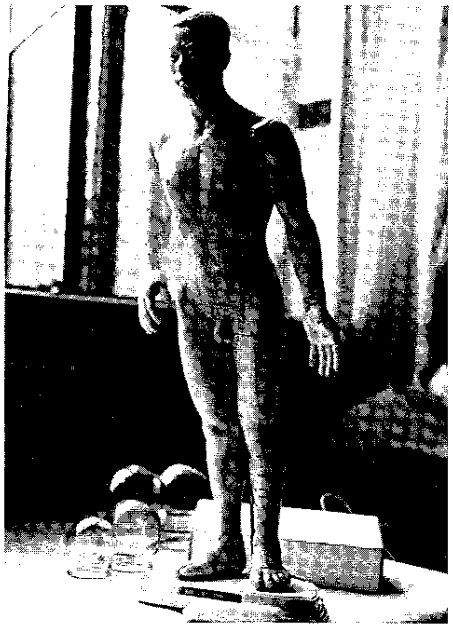
How successful has the syncretic approach been and what are the purposes served? It is clear that the decision to attempt a revitalization of Chinese medicine, combined with a system of Western medicine, came from political, economic, and cultural considerations, rather than medical, made at the highest level (Chairman Mao in the mid-1950s).There is no question that Chinese medicine was at a low ebb in the 1940s and 1950s, that there were very few highly qualified practitioners with theoretical understandings. Even in West-Central China, the heartland of China's traditional medical knowledge, a massive revival effort was necessary. This first took the form of revitalizing the "academies of Chinese medicine" (Peking, Nanking, Urengtu, Kwangchow, Shanghai and elsewhere) so that medical classics and modern textbooks could be produced. The latter led to the General Compendium of Chinese Medicine (1958) with an estimated two million copies distributed by mid-1970; and more recently the Compendium of

Acupuncture with electrical stimulus.

Acupuncture with heat treatment [moxibustion].

Acupuncture, Hopei Provincial Hospital, Shihchiachuang.

Cupping on two shoulders.



Acupuncture training model and cupping vessels used for instructing students.

Traditional physician and patient.

Chinese Medicine for Doctors of Western Medicine (1972).[3]

In some respects this combined system is working very well. Certainly on a practical and therapeutic level there were successful combined treatments. On a theoretical level, however, there are major problems of synthesis between the two approaches. There are, for example, fundamental differences between medical philosophy and terminology. Western medicine tends to be analytical, while Chinese traditional medicine is in a more synthetic, homogeneous language, a cumulative collection of wisdom. In approach, the Chinese system is holistic and integrated, based on ideas of harmony and balance, a useful feature when combined with Western medicine.

There are other, nonmedical, reasons why Mao wanted a combined system to develop. It is more economical (avoiding many high-cost procedures), more strategic (acupuncture, for example, as a quick, cheap method of dealing with pain caused by combat wounds), and more culturally acceptable (in that many elements in a combined system are socially acceptable and culturally comfortable, thus offering some placebo factors of benefit). There is also the ideological justification in that a degree of national pride can be associated with the enormous learning represented in Chinese medicine. To maintain the better elements of both systems and to gain a combined approach could be argued to be a superior system indeed.

What do the people think? Is traditional Chinese medicine essentially a fading gray lady of the East, even when combined with Western techniques? One eminent physician in China confided quietly that "There is indeed an enormous body of knowledge and learning in traditional medicine...a great many things work well...and there is also a great deal of rubbish."

What of other systems? For all peoples within the Chinese sphere—particularly on the periphery of China (Tibet, Inner Mongolia) and even for Hakka and Cantonese in the South—there also persists a strong underlay of folk medicine. We perceived, therefore, that in fact there exist four types of medical systems in China, as suggested in Figure 1.

The official statements suggest that traditional medicine and Western medicine are treated on a

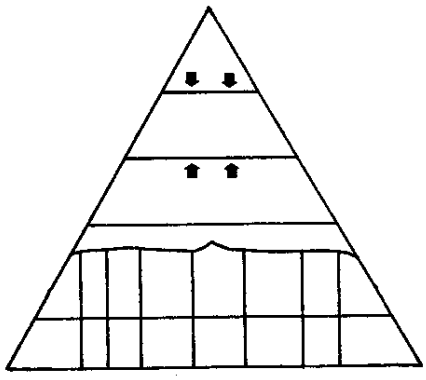
FIGURE 1

Western Medicine

Combined Traditional and Western Medicine

Codified Traditional Medicine

Localized Folk Medicine (Tibetan, Hakka, Inner Mongolia, etc.)



Chinese Attitudes Toward Traditional Medicine: Six Views

Young Man:	"Takes too long to cure you and the herbs taste terrible. I prefer the Western system."
Middle-Aged Woman:	"I am more comfortable with traditional medicine. It is less painful."
Translator/ Guide (age 32):	"If I am really sick, I prefer Western medicine, as it is more a guarantee of success. Otherwise... either one."
Old Man:	"Traditional medicine is superior, if it is based on Han."
Army Doctor:	"Traditional medicine is good because it is cheap; it is good for wounds in combat, particularly to control pain through acupuncture. We must be very vigilant against the Russians; we need easy, self-reliant techniques."
Western-trained Chinese physician:	"Traditional medicine is a closed-system of thought. By combining the systems we are essentially lifting out techniques like acupuncture for practical applications (herbs) without really using the theoretical system."

parity, and that there are parallel systems that allow the practitioner to move between systems. We suspect, although there is no evidence for this as yet, that this is not accurate, that in fact there is a major difference in rural and urban practices, and for the rural areas (80% of China), folk and traditional medicine are the main systems. As one moves closer to semi-urban or urban situations, the tilt is toward modern medicine, which is mainly Western in diagnosis and "combined" in treatment. The geographic distribution of these types of medical practices is suggested in Figure 2.

FIGURE 2

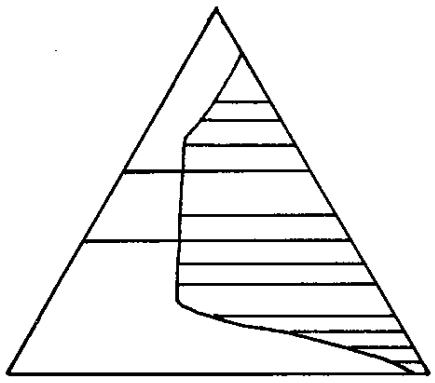
Urban Areas 20%

Semi-Urban Areas 20%

Rural Areas 60%

Traditional Chinese Medicine ☐

Western Medicine ▤



A Traditional Medical College

The Honan Traditional Medical College in Changchow, Honan Province, was established in 1958 on a tree-lined campus in suburban Changchow. It has a faculty of 250, and a student body of 1,150 (50% male/female). Two curricula are offered: one in traditional Chinese medicine (five years, including a one-year internship) and one in pharmacology (four years). The 29 basic courses were described to us as follows:

TRADITIONAL MEDICINE (75%)

11 clinical courses (acupuncture, herbalism, prescription, diagnosis, etc.)
6 general knowledge courses (theory, history, etc.)
4 general knowledge courses (English, politics, modern Chinese culture, etc.)

WESTERN MEDICINE (25%)

8 courses: biochemistry, physiology, bacteriology, anatomy, microbiology, parasitology, hygiene, and public health

Most of the senior faculty had been traditional doctors and are not graduates of any medical school. Most had learned their medicine as apprentices, often within their own family. Younger faculty are graduates of one of the 20 traditional medical colleges in China. Very few women are on the faculty despite an equal access policy for the student body.

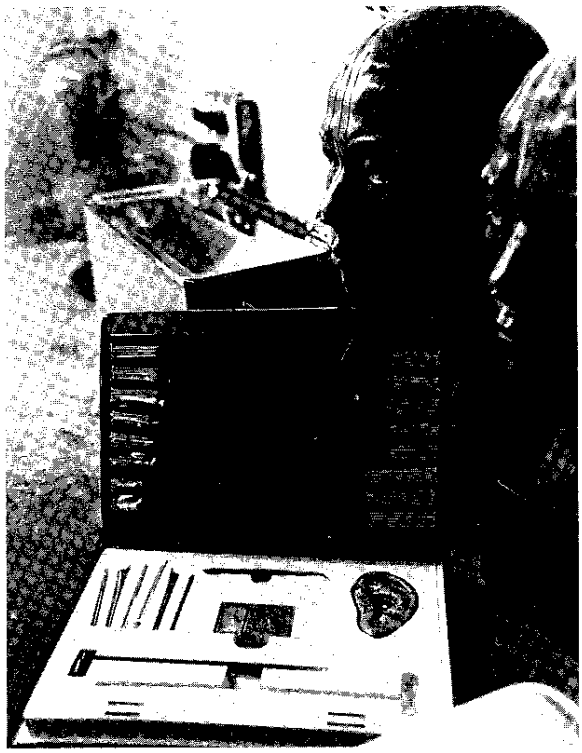
Students were selected on the basis of national exams. They live the four to five years on the campus in austere circumstances, four each in the double-bunked rooms. Most graduates are sent to secondary hospitals and commune-level clinics in Honan Province or in neighboring areas. Starting salaries are between 45 and 55 Yuan per month ($27-$33).

Diagnosis is taught through the traditional methods of observation, including assessment of a patient's color, expression, movement, pulse, and other physical conditions and long questioning of the patient. Nearly all other teaching is by lecture, with heavy reliance on reading the classics in Chinese medicine (Treatises on Fevers, The Core Concepts of Medicine, Tales of Famous Surgeons, and others).

Teaching displays are extensive, particularly for herbal specimens (four rooms) and for the history of Chinese medicine. The history begins with the primitive period, carries on through the Stone Age Societies, the Warring States, the East and West Han medicines, down to modern times. Norman Bethune and Chairman Mao are each honored for his part in Chinese medical history. Bethune was a Canadian who came to China as a combat surgeon in the 1930s to help the Communist Party cause. He died in 1946 from an infection contracted in a field hospital.

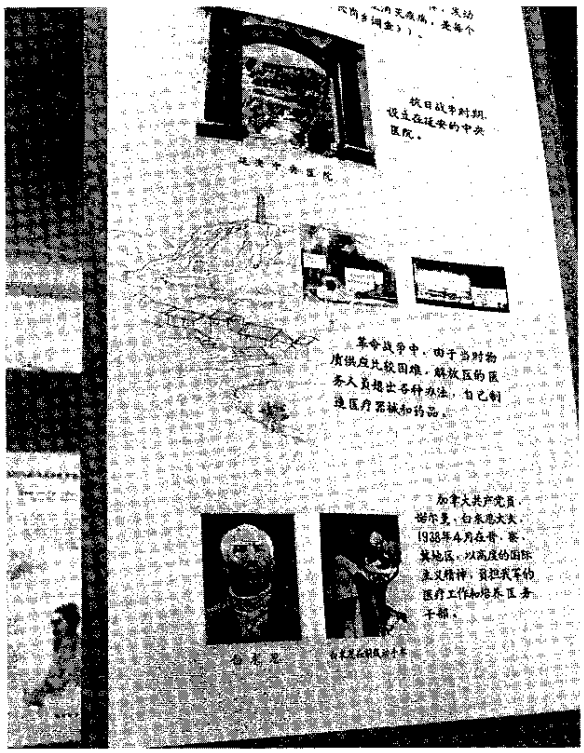
Teaching display of traditional Chinese medicine.

Library reference desk.



Acupuncture needles and models.

Herbal medicines.



Scroll commemorating Norman Bethune, Canadian surgeon.

Scroll depicting famous physicians in history of Chinese medicine.

Botannical display of herbal medicines.

The Modern Medical System: Health Manpower and Education

Data released by the Chinese Ministry of Health show 8.7 million workers in health, of whom 29 million are classified as specialists. Among the latter are 900,000 "doctors," categorized as follows:

240,000 practitioners of traditional Chinese medicine

320,000 graduates of first-level medical schools (Yi-Sheng)

410,000 graduates of secondary medical schools (Yi-Shi)

The latter schools admit students after 9-12 years of primary and secondary school education and offer a 2-3 year curriculum in medicine. There are also 1,800,000 barefoot doctors, workers, and peasants who after 6-12 months of medical training provide primary care, identify patients with more complicated problems, and conduct health education programs for the masses. Another 200,000, third-level doctors of the type shown in Appendix A are also counted among the physician population. Other health workers include nurses, midwives, pharmacists, and technicians of various types.

A recurrent theme in China today is that the education for health care professionals was seriously damaged by the Cultural Revolution, which set back medicine one to two decades. Educational standards were virtually abolished, grades and examinations eliminated, and training programs shortened. Programs in first-level medical schools, for example, were reduced from six to three and one-half years. Admission criteria were dramatically relaxed. To counter elitism, highly trained professionals, including teachers and scientific investigators, were often sent to the country to do manual labor. One distinguished medical academician we met fed pigs for a year in a rural commune.

Medical education is currently being revitalized and upgraded under "the four modernizations" programs. Applicants to medical school are now selected largely on the basis of academic performance and competitive national examinations. A matching plan has been introduced under which the students rank ten schools in order of their preference and the schools do likewise. Not surprisingly the more prestigious medical schools, such as Peking No. 1 attract the more qualified applicants from all over the country. Approximately as many women as men are admitted and some preference is accorded applicants from minority groups, especially in the provincial schools.

There is a standard five-year medical curriculum that includes one year of internships (54 total months of instruction). Every two years faculties from the various schools gather in Peking to discuss curricular modifications and reform. We heard from a number of faculty that the medical curriculum should be increased to at least six years in order to introduce more science. In Peking the establishment of an eight-year medical school associated with the Chinese Academy of Medical Sciences is being considered.

The breakdown of subjects in the five-year curriculum roughly approximates that of most medical schools in the United States, although

Children's ward, Hopei Provincial Hospital.

Men's Cardiac Ward, Hopei Provincial Hospital.

there seems to be less emphasis on primary care and psychiatry than is the U.S. norm. There is substantial instruction in the theory and practice of traditional Chinese medicine (one-half of the time allotted to internal medicine which is integrated with Western medicine at all levels of teaching and care. Teaching is principally by lectures and seminars and the evaluation of teachers by students is common.

Postgraduate training (three years in length) in the clinical sciences is flourishing. Medical schools also provide continuing education to doctors who are in practice and who may return for several months to the teaching hospitals. It was our impression that the first-level medical schools have little to do with the training of barefoot doctors and other lower-level health care workers other than those directly associated with the hospitals themselves. Educational responsibility for the barefoot doctors is the responsibility of provincial and local hospitals and clinics.

Chinese health professionals frequently state the urgent need to upgrade and modernize education and patient care. Increasing emphasis is being placed on the teaching of the basic sciences and the training of scientific investigators. In the clinical disciplines there is avid interest in the most modern advances in medical diagnosis and treatment, including, not surprisingly, CAT scanners (Computerized Axial Tomography). In any relatively poor country it is difficult to decide which of these advanced and expensive technologies should be given the highest priority.

Population and Family Planning

China's population problem is well-known. Nearly one billion of the earth's population live in a country slightly larger than the United States and in which only 15 percent of the land is arable. Although agriculture production has increased markedly since the revolution and the birthrate has declined dramatically (32/1,000 in 1964 to 16.5/1,000 in 1978), the balance between population and food supplies remains a source of deep concern. Owing in part to a decline in the death

Population and Family Planning

Since the authors' visit, the central government has announced countrywide incentives and disincentives for small families similar to those already used in some provinces. Patricia McCormick, UPI Health Editor, in a UPI news release dated November 19, 1979, summarized these "newest weapons in the war on population growth" as follows:

- -- Urban couples limiting themselves to one child will get the same living space provided to two-child families. Their children's applications for schools and jobs will get favored consideration. One-child couples also will be entitled to increased pensions.
- -- In rural areas, one-child couples get pay bonuses and more grain per capita than two-child families.
- -- In urban and rural areas, couples will be permitted to enjoy these benefits if they have an additional child after their first child dies. But if they have more than one child after pledging to limit themselves to one, they must repay the government for all the benefits they have received.
- -- In Tianjian, couples who have a third child will have 10 percent of their combined monthly wages or income deducted until that child reaches 14. Unmarried women who have babies will be similarly taxed until they reach the marriage age, 23-25.
- -- In Beijing, the child tax is 10 percent for the third, 15 percent for the fourth, and 20 percent for the fifth.

an annual increment of at least 9.7 million in 1978.[4] Zero population growth in China is probably not possible before the turn of the century.

The need to control the population's growth rate, on the other hand, seems to be well understood and accepted by the masses, especially in the cities. Since the fall of the Gang of Four the planned birth program has been intensified and a goal of one child per family, adopted. Chou En-lai's motto of "one child is too few, two children is just right, three is too many" has been replaced by "better to have one child, at most, two."

Births are controlled in several different ways. The development of a "collective will" to regulate family size has been important. Intensive public education stresses the national need to control the size of the population. At an early age, children are taught "correct attitudes" about family planning but not sex education in the Western sense. Premarital and extramarital sex are discouraged and have become a cultural taboo. Information about family planning is conveyed and reinforced by lectures and seminars conducted by local health workers and by public pronouncements and posters.

Other methods include:

- -- delayed marriage, usually after age 25. This delay is accomplished by social pressure—"the collective will"—not by legal restrictions;
- -- offering free contraceptives to men and women including the pill, IUD, condom, foam, and other forms (injectibles, lactation, "husband away from home");
- -- encouraging surgical sterilizations, tubal ligation and vasectomy, when appropriate;
- -- offering free abortions for the termination of unplanned pregnancies.

Couples who wish to have more than one child are encouraged to space them three to five years apart and to schedule all pregnancies with the approval of a local planning committee which sets goals and quotas for the neighborhood. In some areas couples who have more than two children are penalized by reducing the salary of both husband and wife by 10 percent until the third child is age 14. They also receive no increase in grain or meat allowances nor greater living space for the third offspring. In Szechuan, both financial and housing bonuses are now offered to couples who have a one-child family.

Although the Chinese have not yet achieved zero population growth, the results of their birth control program are impressive and must be counted as one of the great social accomplishments of this century.

Mental Health[5]

During the Cultural Revolution mental illness was considered an ideological shortcoming, a failure to use correct thinking, and thus curable by re-education and persuasion. Delusional behavior in particular was considered ideologically "bad" and a crime against Mao.

During this period psychiatrists and mental health workers were told to rehabilitate patients purely by talking, education, and study sessions. One psychiatrist told us he spent over 1,000 hours talking with a male patient whom he considered to be in worse condition at the end of the period than at the beginning.

Today treatment in China is reported to be similar to that in the West, and many of the older psychiatrists were educated in the West or in Western approaches. There is a heavy reliance on drug therapy, some electric shock treatment, and some insulin treatment in small doses. There is also a great deal of supportive group, recreational, and occupational therapy. Occasionally, treatment includes herbal prescriptions and acupuncture, thus combining Western and traditional Chinese medicine. These are said to relieve the side effects of antipsychotic drugs or to allow smaller doses of such drugs to be administered.Surgical procedures for psychiatric problems are rare as is psychoanalysis (see Appendix B and C).

Chinese psychiatrists we met speculated that, for the population in general, mental illness is less of a problem among Chinese children and elderly groups than they understand to be the case in the West and Japan. Child psychosis is rare, although hyperactivity (treated with medicines and family counseling) and a new problem of "pampering" was cited by Shanghai psychiatrists. Acute mental health problems among children are treated at special facilities. Pampering is, presumably, a result of the smaller size of the Chinese family today, one or two children as compared to seven or eight in the past.

Senile psychoses and mental illness among the elderly were also thought to be less prevalent in China because retirees have a major role in looking after grandchildren while parents work. Also, the three-generation family stays together and is generally not separated or fragmented; many often share the same living quarters.

Sex-based problems are reported to be "very few," which is surprising in a society that pressures its young adults to delay marriage until age 24 for women and 25 for men. Homosexuality is seen as a problem of "character" and not a mental illness. Before the revolution female homosexuality was reportedly common among nurses, who either were not allowed to marry or chose not to for fear of losing their jobs.

Cases involving the criminally insane must be certified by two senior psychiatrists; patients are usually sent to a prison with psychiatric facilities. The human rights issue concerning the forcible commitment of a patient is reported to be the decision of three groups: the wishes of the family, the coworkers, and the views of the professional psychiatrists. The decision is also an economic one in that a patient's ability to do his work, or at least not to be disruptive to others, is of major importance.

The social profile of the patient population at Shanghai Psychiatric Hospital we consider typical of a large urban institution (see also Appendix B for social data).

Social Background of Patients

1. Male-female patient ratio	1.3 to 1
2. Occupational status	About 60% workers, the rest clerks, students, farmers
3. Income status	Higher income correlates slightly with a higher incidence of mental health problems
4. Age	20-40 age group was the largest cohort among inpatients
5. Education	Higher education correlated with slightly higher incidence of mental health problems
6. Seasonal Factors	April-May (spring) were reported in Shanghai to be a peak period of mental illness, for reasons unknown

7. Rural-urban differences	The incidence of mental health problems, psychiatrists speculate, is slightly higher in urban areas
8. Main Diagnosed illness	Schizophrenia: 80%-85%

Several psychiatrists speculated on the high (80%) incidence of schizophrenia, pointing to the fact that it is often a biochemical problem, that in essence schizophrenia now is predominant because other forms of mental illness have disappeared. For example, drug addiction (such as opium) is reported to have been eliminated as an underlying cause of illness. Prevention and follow-up campaigns have also reduced mental illness in other sectors.

Shanghai Psychiatric Hospital

This institution is located in a suburb of Shanghai in a large, pleasant compound of four-story buildings connected by wooded walkways. Established in 1958, the hospital today has a 1,000-bed in-patient clinic and subhospital facilities in other parts of the municipal district.

Fifteen wards are organized into four categories: (1) psychosis; (2) chronic psychosis; (3) psychosis caused by infectious diseases; and (4) psychosis for teaching purposes. It was estimated that 80 percent of the in-patients were suffering from schizophrenia. The hospital has approximately 3,500 annual admissions.

Some 500 out-patients are seen each day and follow-up visits (some at three visits a week) are undertaken by mobile teams. Distinctions are made between "light" mental health problems, which are often the concern of barefoot doctors, coworkers, family or friends, and those problems that need institutional intervention.

The 83 senior staff generally have psychiatric training in addition to training as physicians. Because of the denunciation of psychiatry and psychology during the Cultural Revolution there is a shortage of staff with psychiatric specialties. Today, physicians are getting five years of general medical, with a rotation (typically of two weeks) through a psychiatric hospital. When they come as interns or residents to the hospital their work includes neurology and general psychiatry; within three months a psychiatric examination is prepared and given by the hospital staff to the interns. A major problem is the shortage of textbooks and teaching materials. Some 92 psychiatric nurses and 300 other nurses form the main paramedical staff. Nurses are graduates of the ordinary nurses' training and thereafter given on-the-job training. The handling of a "typical" case was outlined by one of the senior psychiatrists:

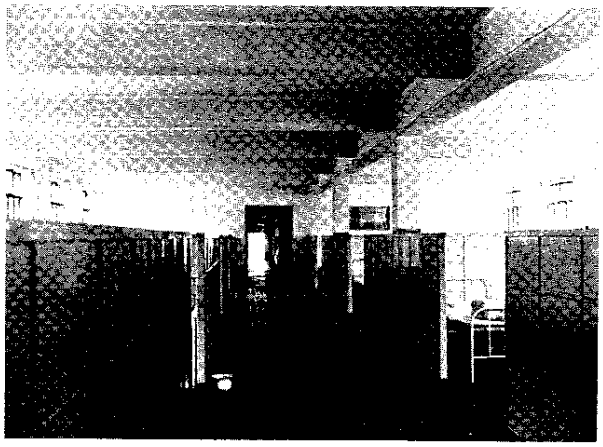
CASE

A "middle-aged" woman who was working as a teacher became querulous and belligerent in the belief her husband had fallen in love with another woman. She was brought to the out-patient clinic where she refused to admit her illness, and instead accused her husband of being ill. The psychiatric diagnosis was "delusional schizophrenia and auditory hallucinations." (She reported voices telling her that her husband had 100 concubines ranging in age from 5 to 70 and that her husband was the handsomest man in the world. The psychiatrists noted he was "quite an ordinary-looking person,").

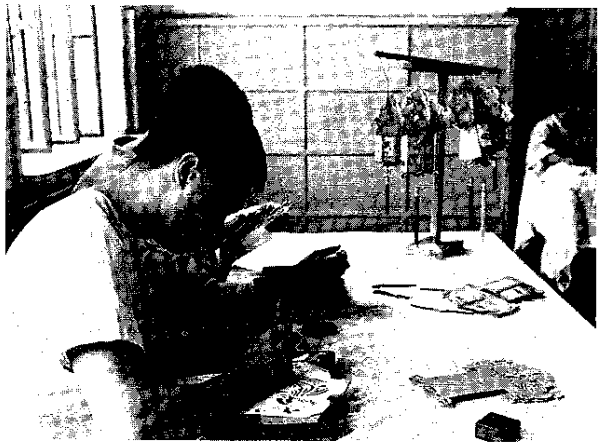
She was admitted to the hospital and treated with drugs. The hallucinations ended but she continued to believe her husband was cohabiting with other women, and that she indeed was not ill.

Group therapy with patients who have come to understand their own illnesses is often used successfully in China. In this case the group therapy was used, as well as talking to her about her problem, and therapy sessions with her family (particularly a favorite, trusted daughter). Eventually she admitted her problem.

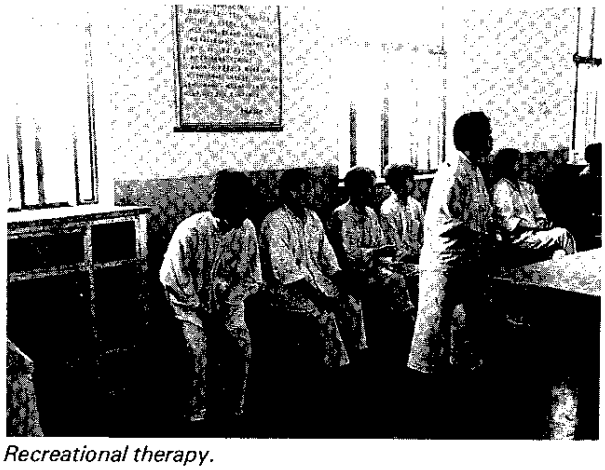
She was believed cured within five months, released, and thereafter seen periodically as an out-patient. She has had no relapse. Compassionate attendance by the nursing staff and group therapy were cited as keys to the success of this case. It was underscored that older patients who have some understanding of their own illnesses are often very helpful in initiating help to new patients.



Men's ward.



Occupational therapy.



Recreational therapy.

Nurse and patient.

Environmental Health

China suffers many of the problems typical of a developing country in that water-borne, fly-borne, excreta-borne illnesses are still prevalent, and many of the problems of the industrialized state—toxic chemicals, pollutants, congestion, noise, and crowded living conditions—are commonplace. The Chinese are aware of the problems and environmental "hygiene" is in the national medical curriculum. The issues, officials acknowledge, are pressing:

Coughing and spitting in public places is a national habit. Upper respiratory infections are widespread. As noted, a government campaign to outlaw spitting had just gotten under way at the time of our visit.

Crowded living conditions, with the attendant problem of transmission of illnesses, is a common complaint. Most families of four or five persons have a two and one-half-room apartment, sharing a kitchen and bath with another family.

Pollution control is just beginning. Smoke from the coal-based industry and the coke and wood-based home heating systems cause major problems, particularly in the winter.

Noise. In the urban areas, just to cite one example, there is a constant din from the vehicle horns and bicycle bells.

Congestion. Although vehicle traffic is still light, China's bicycle traffic is so numerous (3.5 million bicycles in Peking alone) that heavy congestion occurs. We were often moving slowly through a mass of cyclists that had been forced to dismount and walk their bicycles because of the crowded, slow-moving traffic.

Occupational Health. Although Chinese industry is efficient in many areas, industrial safety is recognized as a major shortcoming. In the three factories we visited there was obvious need for such measures as noise abatement, ear protection, eye protection, and hard hats and hair nets for women near machinery. The inhalation of dust and cotton lint were reported to be the "workers' problems" since the factories supplied masks. Without regulation or worker education programs, the masks were unused because of the heat.

Sanitation and waste disposal. This is perhaps China's single biggest environmental health problem. The age-old use of human excreta as nightsoil or fertilizer continues, and indeed is a big business for rural entrepreneurs who come to the cities to buy and transport human waste. In many urban areas sewage is collected by hand, dumped into carts, then emptied into trucks for transport to central terminals for sale.

Municipal officials in Sian reported that sewage and garbage problems were handled by one office, which is also experimenting with ways to get by-products broken into organic matter. Paper and bricks are made from hard wastes and a "marsh gas" plan is being investigated as an energy alternative.

China has made enormous efforts to combat environmental illness caused by rodents and insects. Rats, roaches, flies, grain-eating sparrows, and bedbugs are the objects of an all-out war. Schoolchildren were recruited to kill flies; rats (because they eat grain) were considered the farmers' number one enemy; roaches were targeted as household pests that bring illnesses.

That China still reports loss of grain up to 30% incurred during storage and transport indicates that the rodent war has not been won. Other pests are less evident.

Labor-intensive campaigns to eradicate schistosomiasis are under way by manually plucking the snails out of the water using tweezers.

Looking Ahead

The essence of China's health system is change. Since Japan and the West have been invited to assist China, the rate of change has been accelerating. We saw signs of this in several areas: the embracing of Western technology, the constantly repeated desire for research exchanges, the plan to upgrade the barefoot doctors' training, and the recognition of mental health needs. This change is occurring in a system that has already attained excellence in many sectors. Unquestionably China is superior to most nations of the world in terms of prevention, in terms of access to health care, in mass health education, and in the synthesis of a culturally comfortable medical tradition with Western medicine. Major strides have also been made in professional training at all levels, in containing health care costs and a kind of mass health ideology.

Fast food teashop, Sian.

What conclusions, then, can we draw? It is likely that most Western physicians and health professionals who have visited China would agree with the following:

-- China's strong emphasis on preventive medicine and primary care has been wise and proper. The alternative course, to have stressed the more sophisticated aspects of secondary and tertiary care, would not have addressed the country's principal health problems such as rampant infections and high infant mortality. Fewer people would have benefitted and costs would have been prohibitive.

-- the "collective will" of the people, developed by intense public education, does provide a powerful force for the resolution of many health problems. China's very effecive family planning program is an excellent example, as is the

Street scene, from a bus, Sian.

striking reduction of venereal disease. In fact, the China experience demonstrates that intense and properly directed social pressure can sometimes do more to resolve a major health problem than can the most advanced medical practices.

-- the hierarchical system of health care delivery in China is probably more orderly and perhaps more efficient than in the United States. Certainly, there appears to be less unnecessary replication of services and resources than in the United States. Given that health care priorities have been set by the central government and that resources have been very limited, this is not surprising.

To what extent this central direction will continue under the new liberalization will be interesting to watch. Chairman Hua's concern about a potential problem is evident in his statement "too much democracy can be disruptive for decision making."

-- Access to medical care in China is indeed universal but financing is diverse. The medical care of soldiers and other government employees is paid for by the central government. For the others there are various contractual arrangements between worker groups and local hospitals. Sometimes these contracts provide complete coverage for the individual. Dependents, however, are only partially covered (e.g., 50%) but they often receive additional benefits through other plans, either through their own employer or a neighborhood group. In some hospitals all patients are required to pay small regis-

Grandfather and grandson.

tration fees. In the last analysis, however, probably no one is denied care because of inability to pay.

-- The practice of traditional Chinese medicine is espoused at all levels of care, primary, secondary, and tertiary, and is employed for virtually all ailments, mental and physical. The efficacy of these treatments is difficult to ascertain. In large measure they must be supportive and, at least in the Western sense, not curative. But they also fill a large void which would for the time being be difficult to replace. The problem, as one Chinese physician so aptly put it, is that "traditional Chinese medicine needs many double-blind studies but these will be difficult to do."

-- The effects of the Cultural Revolution on health care and education, as the Chinese have themselves observed, were very destructive. Science was curtailed. Technological development has lagged significantly behind that of the West; hence, China's very real need to modernize and rectify past mistakes. Evident everywhere among Chinese health workers is their eagerness

to progress, to "catch up" with the most modern advances in Western medicine. Will these new and advanced technologies be introduced by establishing rational priorities? Liberalization and modernization of medicine presents the People's Republic with many difficult, challenging, and ethical questions. Perhaps the most basic question is what technologies *not* to introduce and for what groups shall modern medicine be denied. Does it make sense, for example, in a relatively poor, still overpopulated country to introduce chronic renal dialysis and coronary by-pass surgery?

-- China's health care system is, as in any country, a derivative of its political, social, and economic system. We might ask whether the more desirable features of China's system, developed under state socialism, can be transferred to a Western democracy such as the United States. Blandin argues rather convincingly that little is transferable (see bibliography). Others may no doubt disagree.

In health and medicine, China stands on a new and exciting threshold which, as it is crossed, will present both opportunity and challenge. It is vitally important to the rest of the world that this populous and powerful nation meet this challenge successfully.

(January 1980)

NOTES

1. The authors were part of a U.S. Health Studies Group that visited China in September 1979. A social scientist and a physician, neither author was a China specialist but neither was new to the Far East. The itinerary included Peking, Shihchiachuang, Chungchow, Sian, Shanghai, Kwangchow, and Hong Kong; thus this *Report* is based on observations in only six cities. Eighteen professional meetings and field visits were held which included three Western medical colleges, a traditional medical college, four hospitals, a psychiatric hospital, two agricultural communes, a barefoot doctor clinic, a factory clinic, three factories, two schools, and seminars with municipal health officers and college faculties.

2. For example, when a new dam bringing hydroelectric power also brings a higher level of malaria in the backwaters it creates, or when schistosomiasis is the by-product of new irrigation canals and dams.

3. See Manfred Porkert, "Chinese Medicine: A Traditional Healing Science," in David Sobel, ed., *Way of Health*, New York, Harcourt, Brace, Jovanovich, 1979, p. 1971.

4. Taken from R.T. Ravenholt, "China's Birthrate: A Function of the Collective Will," presentation to the annual meeting of the Population Association of America, April 1979.

5. Based on visits to the Shanghai Psychiatric Hospital and to four hospitals and three medical schools where questions concerning mental illness were discussed. See Appendix B and C for further data.

6. Nurses worked according to strict regulations, for long hours, and lived in a closed housing system. These conditions are said to have changed.

ACKNOWLEDGMENTS

We profited enormously from the gracious reception accorded us by dozens of Chinese medical and health-care professionals. We are particularly in debt to Donald Fink, M.D., not only for exceptional leadership and collegiality as coleader of the group, but also for sharing his Report of "Reflections on the Trip to the People's Republic of China, 1979" based on his 1978 visit, and for permitting us to use it in this *AUFS Report*. Dorothy Mann, MPH, served with distinction as the group organizer and coleader. Douglas Southworth worked as a research assistant to the authors and compiled the bibliography. Assistance provided by the Ettinger Foundation is also appreciated.

Appendix A
CHINESE HEALTH PROFESSIONALS

	DOCTORS	OTHER MEDICAL COLLEGE/ SCHOOL GRADUATES	OTHERS
First Level	MEDICAL COLLEGE (YI SHENG) WESTERN TRADITIONAL CHINESE (CHUNG-YE)	stomatologist (DENTIST) (KOU-CHIANG YI-SHENG) PHARMACIST (YAO CHIH SHIH) PUBLIC HEALTH	
Second Level	SECONDARY SCHOOL WESTERN (YI-SHI) SECONDARY SCHOOL CHINESE	STOMATOLOGIST PHARMACIST PUBLIC HEALTH	NURSES MIDWIVES MATERNAL AND CHILD HEALTH RADIOLOGIST LAB TECHNICIAN
Third Level	BAREFOOT DOCTOR (CHI-JIAO-YI-SHENG) WORKER DOCTOR (KUNG REN) LANE DOCTOR (LI-LUNG)		PHYSICAL THERAPY LAB TECHNICIAN

Author: Donald Fink, MD

Appendix B
In-Patient Status: Shanghai Psychiatric Hospital*

A survey of 857 in-patients was carried out on May 20, 1978, covering their mental symptoms, diagnosis, laboratory findings and forms of treatment. Some of the findings:

"Among the 857 in-patients, 515 were males and 342 females. Their ages ranged at the time of investigation from 11-68 years, most being 20-39 years. The distribution of profession in order of frequency consisted workers 63.4%, clerks 13.9%, farmers 10.3%, students 6.9%, and others 5.5%. The marital status revealed single 69.2%, married 28.1%, divorced 1.3%, bereaved 0.7%, and unknown 0.7%. The course of illness gave the range less than 2 years 37.2%, over 2 years 62.8%, over 5 years 42.6%, with the average 6.3 years. Among these patients the first admission was 42.9%, while readmission 57.1% with the frequency of such readmissions about 2.5 times.

Table 1: Psychiatric Diagnosis: in Present Admission

Diagnosis	Total	(%)	Male	Female
Schizophrenia	731	(85.3)	437	294
Engrafted psychosis	23	(2.7)	19	4
Affective psychosis	20	(2.3)	14	6
Schizo-affective psychosis	15	(1.7)	10	5
Reactive psychosis	13	(1.5)	5	8
Organic psychosis	11	(1.3)	9	2
Periodic psychosis	7	(0.8)	1	6
Paranoid psychosis	6	(0.7)	2	4
Involutional psychosis	6	(0.7)	2	4
Symptomatic psychosis	4	(0.5)	2	2
Mental retardation	3	(0.4)	3	0
Psychoneurosis	2	(0.2)	1	1
Psychopathy	2	(0.2)	2	0
Miscellaneous	3	(0.4)	2	1
Deferred	11	(1.3)	6	5
Total	857	(100.0)	515	342

*From Yan Heqin, Chang Minguan, and Xia Zhenyi, "The Present Status of Diagnosis and Treatment of in-patients in Shanghai Psychiatric Hospital," unpublished paper prepared for U.S. visit headed by Dr. Xia Zhenyi, May 1979.

Concerning treatment, "Of the 857 cases (70.2%) of them were given only psychotropic drugs, 12.8% in combination of psychotropic drugs with electric convulsive therapy, and 6.6% in combination of psychotropic drugs with traditional herbal medicine or acupuncture (Table 2).

Table 2: Method of Therapy

Methods	Cases	%
Unitary therapy		
Psychotropic drugs	602	70.2
IST	12	1.4
Herbal medicine	10	1.2
Miscellaneous	2	0.2
Combined therapy		
Psychotropic drugs & ECT	110	12.8
Psychotropic drugs & herbal medicine or acupuncture	56	6.6
Psychotropic drugs & IST	31	3.6
Psychotropic drugs & IST & ECT	5	0.6
Miscellaneous	14	1.6
Untreated	15	1.8
Total	857	100.0

Eight hundred four cases, including combination with shock or other therapy, were given various kinds of psychotropic drugs, among them 394 cases(49.1%)treated with a single drug, 378 cases(46.9%)two drugs, while 32 cases three drugs. The frequency of using various kinds of psychotropic drugs illustrated as follows (Table 3).

Table 3: The Frequency of Various Modes of Using Psychotropic Drugs

Drugs	Cases	%
Chlorpromazine (CPZ)	278	34.0
CPZ & perphenazine	90	11.2
CPZ & stelazine	83	10.3
CPZ & haloperidol	59	7.3
Taractan	34	4.2
CPZ & fluphenazine	33	4.1
CPZ & fluphenazine decanoate	30	3.7
Stelazine	24	3.0
Haloperidol	21	2.6
Perphenazine	16	2.0
Miscellaneous	136	17.6
Total	804	100.0

Appendix C
Traditional Medicine and Psychiatry

Mental illness was a part of the 2,000-year-old Yellow Emperors' Manual of Internal Medicine in which mental illnesses were divided into two groups: those due to psychomotor inhibition and those due to psychomotor excitation. In these early classics herbal medicines were suggested, as was acupuncture therapy. Breathing therapy was reported in the tenth-century chronicles and a form of "substitution" therapy (happiness for sorrow) is reported in the fifteenth century and is the basis of modern Chinese occupational therapy.

Treatment today combines both traditional and Western approaches. For example, acupuncture has been used with psychotropic drugs. Psychiatrists in Shanghai report* the following acupuncture techniques:

"Traditional needling: according to the diagnosis and symptoms of psychosis, appropriate points (called 'shueh') on the body are selected and needling is done by manual manipulations (puncture and twirling). We have acupuncture in treating such conditions as schizophrenia, psychogenic psychosis, manic-depression, hysteria and obsession. Acupuncture has also been applied to such symptoms as hallucination, psychomotor excitement, and so on."

"Electric needling: after puncturing, mostly points on the head and face, electric impulses are applied through the needle to increase the efficacy and to save human labor."

"Injection of points with drugs: drugs are injected through specific points to determine whether therapeutic effect may be increased."

"One of the unknowns in this area is how to combine treatments of antipsychotic drugs and Chinese herbal medicines in a mutually supportive treatment. The quick action of antipsychotic drugs may be utilized to control symptoms and signs in attacks, while the slow action of herbal medicine may be utilized to sustain and strengthen the therapeutic effects. Since the dosage of antipsychotic drugs is usually larger, sometimes ten times larger than that used in treating ordinary medical cases, could it be reduced by using herbal medicines in combination? And, could Chinese herbal medicines be used to alleviate side effects of some antipsychotic drugs, such as dryness of mouth, constipation, menstrual disorders, etc.?"

"May the recurrence of symptoms be prevented by applying the principle of 'differentiation therapy.' In our practice, we have succeeded in reducing the dosage and side-effects to a certain degree but the possibilities for further research and clinical trials are very broad."

"Our task in the future is monumental, and we believe that in psychiatry we ought to strive to combine modern medicine with traditional medicine."

*Quotes were extracted from papers prepared by Xia Zhenyi, et al.

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