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Public Medicine in Wartime China

Rosenberg Institute for East Asian Studies

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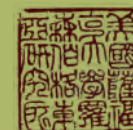
Public Medicine in Wartime China:

Biomedicine, State Medicine, and the Rise of
China's National Medical Colleges, 1931-1945

John R. Watt, PhD



Rosenberg Institute Occasional Paper Number 1



**Rosenberg Institute
for East Asian Studies**

Suffolk University

美國薩福克大學羅森伯格東亞研究所

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Public Medicine in Wartime China:

Biomedicine, State Medicine, and the Rise of
China's National Medical Colleges, 1931-1945

John R. Watt, PhD

Preface by Caroline Reeves, PhD

Rosenberg Institute Occasional Paper Number I



Rosenberg Institute
for East Asian Studies
Suffolk University

美國薩福克大學羅森伯格東亞研究所

The Barbara and Richard M. Rosenberg Institute for East Asian Studies at Suffolk University

Established in 2007, the Rosenberg Institute serves as the lead platform in the field of Asian Studies at Suffolk. It presents a regular series of lectures on topics of current and academic interest about Asia to the faculty and students of Suffolk. Its programs, which are free and open to the public, have been attended by scholars and students from many universities and colleges in the Boston and New England area, along with professionals and members of the interested public. In this sense, the Institute's activities are presented as a public service available for all interested parties.

The Institute cooperates with the Asian Studies Program at Suffolk which benefits many of our students, even beyond those who select to major or minor in Asian Studies. The Institute has lent its endorsement to a number of student-related activities such as the annual Asian New Year's Party, the screening of films from Asia, and activities of the student clubs which include the Asian-American Student's Association, the Indian Student's Club, the Vietnamese Student's Club, etc.

As a further way of being part of our community, the Institute has active involvement with community-based groups such as the Asian Taskforce Against Domestic Violence, the Chinese Historical Society of New England, the Boston Chinatown Neighborhood Center, and the educational non-profit Primary Source. These organizations are endorsed cited by Massachusetts Governor Deval Patrick, Boston Mayor Thomas Menino, and other civic leaders.

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Introduction From the Rosenberg Institute Director

Public Medicine in Wartime China is the first in our series of Occasional Papers issued by the Rosenberg Institute for East Asian Studies at Suffolk University. When the Institute was established in 2007, our benefactors Barbara and Richard M. Rosenberg agreed that the Institute would prepare “academic papers and publications” to be offered “as intellectual activities and research of the Rosenberg Institute...” Their generosity allows us to offer this study to the academic and professional public. This Occasional Paper is based on a longer study of the subject by Dr. Watt, and also follows a presentation he made at Suffolk in April 2010, co-sponsored with the Taiwan Economic and Cultural Office in Boston. The event was widely reported in several Chinese language newspapers. Dr. Watt’s full-length study is now being prepared for publication.

The Rosenberg Institute is pleased to publish this thoughtful paper. It will be of interest to those concerned with understanding China’s wartime experience in the 1930s and 1940s, the efforts to set up public health and medical services throughout China in the twentieth century, and those who continue to encourage non-profit institutions in the United States to cooperate with professionals and leaders in China on projects that are in the public interest. Dr. Watt is a widely-respected scholar whose many contributions to better American-Chinese understanding over the past forty years have been acknowledged on many occasions.

Through this publication he joins the recently formed Rosenberg Institute in carrying forward the dialogue of understanding between the Chinese and American people that is so crucial and rewarding for all of us.

Ronald Suleski, PhD
Director

Preface: Out of Chaos

Caroline Reeves

The historiography of Republican China (1912-1949) has traditionally described an interregnum of chaos between the fall of the Qing Dynasty (1644-1911) and the post-1949 re-imposition of order in Communist and Nationalist China. But a more nuanced picture of this era is beginning to emerge, and John Watt's work on the development of a biomedical infrastructure for China from 1931-1945 contributes importantly to this corrective. Watt is well known to historians of China for his expertise on one of the most pivotal underpinnings of the Qing Dynasty's imperial stability: the District Magistrate and his role in effecting the power of the Qing state at the local level. Ironically, Watt now turns his attention to this later era of disarray and the innovation inherent in chaos. Once again, he paints a detailed, convincing picture of individuals and their contributions in creating the structures of everyday life, in this instance under dauntingly adversarial conditions.

During the early part of the twentieth century, China was indeed in a period of flux. Caught in the shifting sands of global power relations, the Qing Dynasty endured repeated incursions into its cultural, economic and political sovereignty. China's neighbor, the industrially emergent Meiji Japan, was one of the states most interested in China's natural and territorial wealth. In the first Sino-Japanese War of 1894-1895, Japan began its creep into China, focusing on the economic exploitation of China's rich Northeast. As Japan's ambitions for China began turning to Western-style colonial imperialism, however, its expansionist plans intensified. Over the next four decades, Japan grew progressively bold in the region. Flexing its newly modernized military muscle, in 1904 the Japanese challenged the Russian army over Russia's influence in the Far East, audaciously confronting and defeating a "European" power for the first time and winning a victory that stunned the world. The Russo-Japanese War of 1904-1905 was actually fought primarily on Chinese soil, and led to additional loss of Chinese territory and Chinese lives.

Soon, Japan's World War I takeover of German territory in Shandong further expanded Japan's reach within China. Although the "Shandong Question" was ultimately resolved in favor of the Chinese, Japan's intent to enter China politically and militarily was increasingly clear, as was the inevitable cost to the Chinese people. Domestic unrest, revolution (1911) and civil war accompanied Japanese and Western military actions in China. The results were bloody for the Chinese.

In 1931, Japanese aspirations for China began to come to fruition Japanese puppet state of Manchukuo. Although the second Sino-Japanese War did not formally begin until 1937, the escalation of violence within China throughout the 1930s exacerbated problems already endemic to the Republican era: poverty, increased mortality, political instability, and social conflict. For the majority of the Chinese people, war, violence, and dislocation were the constant realities of this era.

Despite this apparent chaos, however, the human impetus to order did not come to a halt. From within the maelstrom came vibrant improvisation: social actors working towards a better, stronger China—regardless of how unstable China had become. China's scholarly elite had long felt a responsibility to better their polity, whether through political remonstrance or personal action. Now this elite was joined by sectors of society newly emboldened by the implosion of Confucian social orthodoxy and the myriad opportunities often accompanying social turmoil: China's women, youth, and those without a Classical education. These men and women did not wait for peace and stability to try to fix China's many problems. Instead, they dealt with the situations at hand in practical, effective ways, building for the future in conditions that would seem to stymie any practicable action at all.

It is this story that John Watt tells in this monograph: the story of a dedicated and exceptional cadre of Chinese and their creation of a fledgling system of public medicine and medical education. Born under exceedingly difficult conditions, this system would go on to provide the basis for the post-war take-off of medical improvements in both the PRC and Taiwan. Doctors, nurses, medical students and faculty, committed administrators as well as stretcher bearers and other

hospital workers managed to keep biomedical clinical education and laboratory work alive, even as the Japanese overran the areas in which they were based. Working with systems new to China—biomedical technologies, pedagogical practices, and public health methods, these actors physically and intellectually laid the groundwork for a new biomedical infrastructure which would provide pathways for further development once China finally came to peace.

Biomedicine provided an ideal field for innovation in early-twentieth-century China. Although China had been gradually augmenting its storehouse of modern science, medicine, and technology since the sixteenth century, the promises and perquisites of Science—writ large—in the post-1900 period seemed to expand exponentially, necessitating an urgent drive towards its acquisition. Social Darwinist ideas, promulgated by Herbert Spencer gained traction among the Chinese intelligentsia as the empire gave way to an increasingly fractious warlord era. These doctrines made threats of racial and national annihilation explicit, and harnessing science to combat this ominous future became critical to national survival.

The Second Sino-Japanese War in 1937 made this threat to the Chinese race very real indeed. The war's dislocation of tens of thousands of civilians put a large proportion of the population at immediate risk of disease, starvation, air raids, banditry, and rape. Biomedicine, particularly in contradistinction to "traditional Chinese medicine," offered a concrete path to bettering the Chinese body politic, literally as well as figuratively. In particular, the field of public health, through its emphasis on hygiene and preventive care, appeared to offer a new way to counteract the deadly epidemics swept in by modern intercourse that neither the gods of disease nor the individual medical practitioner could counteract.

As the Japanese invasion made the need to attend to China's wounded unequivocal, biomedicine developed increasingly rapidly in China. The process of the global socialization of China's intelligentsia—the education of China's future leaders in international settings—was already well underway, and contributed significantly to these develop-

ments. Men and women who had studied abroad or studied in Japanese or Western institutions in Asia acquired expertise that they then brought home to their nation. China's biomedical pioneers returned to their localities with passionate ideals and ideas about how to use their new science in the service of the state. With their cutting edge knowledge, these new-style public servants were able to address the two paramount social imperatives of their era, imperatives that to them were inextricably linked: scientific modernization and national salvation. Performing for their wounded compatriots lying in front of them as well as for an international community for whom they wanted to demonstrate their ability to conduct a "civilized" war, they saw their provision of biomedical services as a matter of life and death—both to their patients' and to China's survival.

This account is one of incremental improvements, advances that were often wiped out with one bomb or battle. The hard work behind the construction of a teaching hospital or barely adequate student dormitory rooms was too often destroyed in a few moments by invading armies or aerial bombardment, and sometimes even by retreating Chinese armies. But the resilience and resourcefulness of China's medical workers, determined to bring modernity in the form of biomedical care and training to China even in the midst of brutal combat, ultimately outlasted the depredations of war. Spurred on by a nascent patriotism, the students and their teachers continued to re-build, to care for patients, and to move their public health projects forward.

Watt charts how the benefits of field experience and the will to learn survived the chaos and reemerged at the end of the war, laying the basis for a new public health infrastructure rooted firmly in a continued commitment to modern biomedical education. Watt gives us careful portraits of the individual men and women—not generals or politicians or warlords or landlords, but simply people who cared about other people—who worked throughout this period of chaos to try to create a healthier environment for the moment and for the future. To be sure, Western medical agencies, such as the China Medical Board, the American Bureau for Medical Advancement in

China, the American Red Cross, the British Red Cross, a missionary-sponsored International Red Cross, and the Friends Ambulance Unit contributed funds, supplies and personnel to the work of Chinese medical agencies; and foreign medical personnel, including physicians from Republican Spain, Indian volunteers, and stand-out personalities such as Dr. Norman Bethune, pitched in at the battlefield alongside Chinese colleagues. Idealism and determination triumphed repeatedly over adversity and the achievements of Chinese medical reformers ultimately endured long after the conclusion of the war with Japan. With this publication, John Watt's work adds greatly to our understanding of late Republican China, the Second Sino-Japanese War, and the development of biomedical systems in Asia during the early twentieth century.

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Introduction: The Context of Change in Republican China

Modern health care took shape in China during one of the most chaotic eras in that country's long history. It would have been hard enough to develop effective modern health services in a country as susceptible to poverty and epidemic disease as was early twentieth-century China. But the innovators of that era had to deal not only with the institutional breakdowns that occurred during the Warlord Era (1911-1928), but also with the far greater human and systemic problems caused by civil war and by Japan's invasion and occupation of mainland China from 1931 to 1945. One has only to read accounts of Nationalist China's military hospitals at the height of the Japanese onslaught in 1937 and 1938, or the mass migrations caused by war, flood, and famine, to appreciate the horrible conditions confronting China's wartime health workers and its sick and wounded patients.¹

Yet it is at this critical time that the modern health services in China struggled to stand on their own feet. Under conditions of exceptional deprivation, medical and nursing schools took control of their collective missions and carried on teaching and learning. Public health services came to large areas of western China for the first time. Red Cross and auxiliary medical services produced significant numbers of health workers trained in basic triage, sanitation, and techniques for controlling epidemic diseases. China's Red Armies, beginning from 1927, developed health services that emphasized preventive health and hygiene, catered to civilians and enemy prisoners as well as the military, and drew in practitioners of Chinese medicine and pharmacy in the interest of saving lives. During this turbulent era, many of China's modern medical leaders weaned themselves from dependence on foreign patronage and direction, substituting the preventive and more cost-effective strategies of State Medicine for the earlier hospital- and mission-based services of missionary medicine. All these innovations

were in place before 1949, providing the groundwork for the development of Communist China's health services.

A notable aspect of this story was the attention given to biomedical, nursing, and more generally health service education. The Nationalist government set up a Commission on Medical Education (CME), headed initially by medical reformers, that took as its goal the expansion of biomedical education throughout China through the formation of national medical colleges. Before the full-scale Japanese invasion in 1937 this initiative made considerable progress (as detailed below). The government's National Health Administration (NHA) set up the Public Health Personnel Training Institute to train physicians and other health specialists for the task of promoting State Medicine in rural areas. As the NHA had a minuscule budget, the Rockefeller Foundation stepped in to help get this program started.

After the Japanese armies moved into North and Central China, Dr. Lin Kesheng (Robert K. S. Lim, chair of the Department of Physiology at the Peking Union Medical College [PUMC]) took on the leadership of the Red Cross Medical Relief Commission (later Corps). He and his staff organized increasing numbers of medical teams that visited armies in combat, providing relief, patient care, and, where possible, ad hoc training. In 1938 Dr. Lin's Red Cross Medical Relief Corps began providing organized field service training in hygiene and sanitation for health workers in China's armies and public health agencies. This training program continued through 1945.

Meanwhile the Chinese Red Army groups found out as early as 1927 that their shortage of health workers and the vulnerability of their military and base area civilian populations to injury and disease could best be mitigated through the introduction of training programs. These began in the late 1920s, and it was not long thereafter before the leadership in the southern Jiangxi base areas set up a health training school. That school continued operating throughout the Long March era (1934-1936) and through the War of Resistance against Japan (1937-1945). The political and military leadership also promot-

ed health campaigns throughout most of its base area civilian populations. Political agents encouraged base area inhabitants to assist by providing rooms as hospital wards, sending food supplies to hospitalized patients, and encouraging their young people to serve as nursing aides and stretcher bearers.

An important part of the leadership for all this training came from existing medical colleges and, to a certain extent, from representatives of the world of Chinese medicine. A significant number of graduates from the PUMC (including its nursing program) signed up with Dr. Lin and the Chinese Red Cross, as did graduates from other medical colleges, such as Tongji and St. John's (in Shanghai), Xiangya (in Changsha, and during the war in Guiyang and Chongqing), and Jilu (in Jinan, Shandong, and during the war in Chengdu). Dr. Lin's strong connections with Singapore (where he was born) brought in many young volunteers from overseas Chinese communities in Southeast Asia who were inspired by his loyalty to his ancestral country. Until the war spread into Southeast Asia, these overseas communities also sent money to support the work of the Red Cross Medical Relief Corps.

A number of young people who committed themselves to serving in Red Army health services came from the so-called second-tier medical colleges set up along Japanese educational lines or from Christian missionary hospitals, especially those that had provided services to sick and wounded Red Army soldiers. The Red Armies also benefited from the services of refugee Jewish physicians and other foreign medical friends, of whom the best known is the Canadian surgeon Dr. Norman Bethune, who died of septicemia while serving the Eighth Route Army. But their principal source of support came from their own political and military leadership, including (but not limited to) such leaders as Peng Pai, Mao Zedong, Zhu De, He Long, and Nie Rongzhen. Each went on to be recognized as a major leader within the Chinese Communist Party. The American journalist Agnes Smedley served as a dedicated and unflagging foreign commentator on, and participant observer and fundraiser for, the work of the Red Army and Red Cross health care units. Her wartime reflections on this work are still very readable.²

All this attention to training should not come as a surprise in a culture that had for centuries been so committed to education for public service. What we see in this period, however, is a huge and not yet fully documented or understood expansion of the concept and substance of public service in China and an equally large expansion in the numbers and range of individuals admitted to the world of training for work in the public arena. For many young educated people, public service now included the patriotic duty to come to the rescue of a country and people attacked by a powerful and determined foreign enemy. It required education and training in fields of activity not previously seen by educated individuals as relevant to the maintenance of public order. For others it constituted a call to end an era of subservience to foreign power generally and to acquire whatever skills and disciplines it took to build a modern society and a nation that could defend itself. Another related public order goal that acquired revolutionary momentum during this period consisted in overthrowing an oppressive social order, which had become unusually severe in its impact on farming communities as a result of the downfall of the traditional empire and the outbreak of an unrestrained, multilayered, and violently oppressive warlordism.

Given such a broad scope and controversial edge to the new concepts of public service, it is not surprising to find these concepts and their adherents mobilizing large numbers of people, or that the mobilizers turned to individuals almost all of whom had hitherto either rejected such concepts, or felt entirely unqualified to embrace them, or had no awareness even of their existence. For example, individuals educated in Confucian values had traditionally rejected enrollment in military or paramilitary organizations such as the Red Cross Medical Relief Corps. Within the medical world, enrollment in surgical service was traditionally not part of Chinese medical practice and too closely associated with Western missionary practice to attract individuals brought up in Confucian or Daoist settings. Men who did enroll in military medical services were generally individuals considered too weak to function in combat service; basic knowledge

of medicine or even of rudimentary health care was not a requirement for service as army medical aides. As for the teenage country boys and girls who came to serve the Red Armies as stretcher bearers and nursing helpers or as army messengers and guides, such an initiation could succeed only in a society that was deliberately searching for new directions.

It would be easy to think of the old order in China as unraveling fairly rapidly once the examination system ended, the Qing empire collapsed, and the warlords took over. But in fact old ideas did not disappear so quickly. Even as late as 1945, Nationalist military leaders had a hard time seeing any value in military medical training, while many physicians in private practice were still reluctant to commit themselves to military service and national defense. For others, medical practice, particularly when dealing with bodily fluids, was seen as dirty work unfit for people with educational aspirations. Practitioners of biomedicine were regarded as following a foreign way that was as intrusive in its dealings with human bodies as Westerners were in their dealings with China. Where Chinese medicine doctors practiced “internal” medicine and intervened in bodies with needles interacting discreetly at specific points in long-established energy channels, those trained in Western medical and surgical arts (many of them trained abroad) encroached from the outside with scalpels and saws or used drugs outside the Chinese pharmacopeia. The cultural tensions between these two ways of medical treatment (one primarily internal and belonging to China, the other seen by most Chinese people as primarily external and belonging to the West) significantly affected Nationalist politics and military practice. More broadly, they prevented Chinese health care workers trained in biomedicine from understanding the continued relevance of Chinese medicine to Chinese health. As a result, the great majority of individuals apprenticed in Chinese medicine and pharmacology remained outside and essentially banned from the world of public service.

The more obvious and better known tensions are those that existed between individuals and parties who supported Nationalist poli-

tics and those who supported and served the Chinese Communist party and the Red Armies. The civil war that broke out between these two forces in 1927 was as brutal and deadly as the war between the Chinese and Japanese armed forces. Nationalist forces gave no quarter to captured Red Army personnel, even if medical or injured and sick. In one incident after another, such people were formally executed or simply slaughtered. Communist forces, in turn, gave little if any quarter to landlords and their hated militias. Dr. Lin and his Red Cross allies got into serious trouble for supporting both sides in this civil war in the effort to maximize opposition to the invading Japanese armies. In this context, it proved very hard to reconcile conflicting definitions of public service in relation to the overall protection of human life.

Despite these chasms in the public domain, the 1930s provided an era of international innovation in public health and medical education, in which China played an important role. Representatives of the League of Nations Health Section and the Rockefeller Foundation took great interest in initiatives taking place in China and helped significantly to support them. In certain respects, China became a major field for the development of public health ideas, particularly the concept of State Medicine conceived in Eastern Europe in the wake of World War I. Under Dr. John B. Grant, the Department of Public Health at the PUMC pioneered the development of state medical ideas in urban and rural field stations, notably at Dingxian in Hebei province, which became the focus of a remarkable experiment in mass education. The CME went as far as to plan a medical college specifically devoted to training students in the public and preventive health strategies advocated by State Medicine. These initiatives were severely curtailed by the Japanese full-scale invasions of north China starting in July 1937, but they were continued at several national medical colleges as well as through Dr. Lin's Emergency Medical Service Training Schools. The latter bequeathed over sixteen thousand trained medical aides to the task of building China's modern health services after 1945. When one adds the thousands more medical and nursing aides trained through the Red Army medical services, it is evident that

China ended the war against Japan with a substantially increased reservoir of health workers trained in basic hygiene and preventive health care, as well as physicians, public health specialists, and their political allies capable of making this aspect of health care into a significant feature of public policy.

The account of biomedical education that follows this introduction is part of an overall study designed to describe and assess these initiatives during the period from roughly 1928 to 1945. It focuses on the role played by biomedical education in creating new avenues to health service in both the public and private sectors. While the principles of Western biomedicine and their application to public health policy remained dominant through this period of modern China's history, it is clear from what follows that the war with Japan had a major impact on how medicine was taught, to whom it was taught, and for what purposes.

Early Biomedical Education in China

Modern biomedical education in China originated with apprenticeship training by Western medical missionaries to provide medical aides for mission hospitals. With the emergence of collegiate education in the early twentieth century, this form of medical education, along with the Japanese two-tier model of medical professional and vocational education adopted by a few government and private schools, became the primary system of modern Westernized biomedical training in China.

The establishment of the PUMC in 1917 introduced a powerful secular variant of the missionary college. It intensified the level of Western influence over medical education in China while maintaining a strong residual connection between medical and missionary work. The PUMC adopted the model of the laboratory- and clinic-based research and teaching enterprise that had come to define key requirements of modern medical education in the United States as a result of the Carnegie Foundation's Flexner report.³ This assertion of medicine as a rigorously trained and science-based undertaking, backed by outstanding professional talent and millions of Rockefeller dollars, soon came, through the PUMC, to exercise a powerful influence on Westernized biomedical education in China, displacing the hitherto dominant missionary model as the leading pathway to Western biomedical modernization.

But could the future of Westernized biomedical education in China lie with the PUMC model, which was so foreign and specifically American in its principles, leadership, funding, and methods of instruction? Certainly the PUMC supplied directors, teachers, and researchers for a number of China's other influential medical colleges, as well as administrators for public health institutions established after 1928.⁴ That may be why Western study of medical modernization in China has been understandably preoccupied with the PUMC and the high standard and high-visibility model of biomedical education that it

represents. At the same time, the PUMC model raises issues of cultural and epistemological encroachment for modern Chinese nationalism and cultural identity. To understand the evolution of medical modernization in China, one has inevitably to take broad trends into account, including both the intensification of Western cultural influence in China represented by the PUMC model and a countervailing process of differentiation from Western models as the Chinese people struggled to evolve China-centered strategies of modernization.⁵

This account of biomedical education explores these trends with particular reference to two themes: The gradual nationalization of biomedical education that took place during the Republican and Nationalist eras (1911-1949), and the introduction and promotion of State Medicine as an organizing principle of medical education, a process that slowly got under way after 1928. The focus of the account is on the period of the War of Resistance (1937-1945), when China was forced to depend substantially on its own resources to meet the challenges of war and national survival.⁶

The Emergence of Modern Western Biomedical Schools

Modern college-level medical education in various forms appeared in China at the end of the nineteenth century and in the first decade of the twentieth, at a time when the Qing dynasty was belatedly attempting to come to terms with the encroachment of Western political and social forces. During this period, European and American missionary societies founded medical colleges in and around Shanghai as well as in Beijing, Jinan, Hankou, and Guangzhou (Canton). Two military medical colleges had opened in Tianjin under official patronage, along with army and navy medical academies in Guangdong. In 1903 professors at Beijing University established a small, Japanese-oriented civilian medical college. A civilian medical school opened in Guangdong in 1909, and in June 1911, just a few months prior to the outbreak of the Xinhai Revolution, the Japanese-directed South Manchuria Railway opened a medical school in Shenyang. The foreign medical schools had their own systems of accreditation and governance and relied on foreign instructional materials and foreign language instruction.⁷

Following the establishment of the Republic in 1912 several other government, missionary, and private medical colleges were founded in urban centers such as Shenyang, Beijing, Baoding, Shanghai, Suzhou, Hangzhou, Nanchang, Guangzhou, and Chengdu.⁸ In 1914, during this period of expansion of Western medical education, the Rockefeller Foundation sent a Commission to survey health conditions in China and make recommendations for the promotion of medical education. The Commission found, first, that with one or two exceptions, the government or private (Chinese-managed) medical schools were “almost exclusively under Japanese influence, practically all their staff having been trained in Japan or by Japanese teachers in China,” generally in the second-tier vocational medical schools.⁹ The Commission surveyed several vocational medical schools set up under government auspices according to the Japanese model. They were reported to have

very limited laboratory facilities and to depend for clinical training on small hospitals and clinics. Missionary-sponsored colleges were regarded as somewhat better off, as the Chinese Medical Missionary Association had begun efforts to consolidate missionary medical education into nine institutions.¹⁰ But these were all of recent origin, with rudimentary plants and inadequate equipment and staff. Some had high standards, but others were led by generalists declared to be unfamiliar with modern medical advances. After visiting seventeen medical schools and ninety-seven hospitals in China and Manila, the Commission concluded that the Foundation should become involved in the development of medical education in China. The most important outcome of this study was the organization of the path-breaking PUMC in 1917.¹¹

Unfortunately the formation of the Republic in 1912 soon led to the breakdown of central political order and its replacement by regional warlord power blocs. Medical schools established in treaty ports were to some extent protected from the political upheavals of the times. But others, including those situated in Beijing, floundered, and it was not until the formation of the Nationalist government in Nanjing in 1927 and 1928 that a new modicum of centralized order reemerged in China.¹² The new Nanjing government organized ministries of education and health staffed by reformers in a hurry to get China on the road to modernization. In December 1929 the Ministry of Education, in cooperation with the Ministry of Health, appointed the CME to develop policies for consolidating and promoting medical education.¹³

Issues Confronting the Nationalist Reformers

The medical reformers turned to the League of Nations Health Section for assistance in charting the future of medical education. Late in 1929 the Section Chief Dr. Ludwig Rajchman and a colleague arrived in China and conducted a two-month survey of health services and educational programs. Enthused by prospects for reform, Rajchman reported that considerable progress had occurred since the Rockefeller reports of 1914 and 1915. But various problems remained. Modern medical colleges and practitioners divided into several discrete linguistic subsets, each developing a certain “corporate exclusiveness” strengthened by the use at leading national medical schools of English, German, and French (and Japanese at the Manchurian Medical College) as the medium of teaching.¹⁴ Also the prolonged political upheaval had not been kind to the new medical services. Up to 35 percent of an estimated 580 hospitals had closed during the revolutionary years of 1926 to 1928 when fighting took place throughout the country between the Nationalist armies and the regional warlords. Because of such difficulties, the Chinese “Western-trained” physicians were much more handicapped than those in other countries of the Far East.¹⁵

The Rajchman report pointed out that modern medicine seemed not to have attracted Chinese intellectuals, either because of their resistance to foreign agencies or because of the low quality of most foreign instructors and the low prestige in the Chinese medical tradition of the surgery, ophthalmology, and midwifery emphasized in missionary medical practice. Vocational medical schools established since 1914 had done so badly that many had ceased to function after 1926 or had since been ordered to close.¹⁶ Only one medical college had reportedly attained standards set by the Council on Medical Education of the Chinese Medical Association, and that was the heavily Rockefeller-subsidized PUMC. Eight missionary schools,

however, had registered with the Council. The report took note of the “excellent” Japanese school in Shenyang, and in Shanghai the “very efficient” German-founded and already national Tongji Medical College and the “high grade” French Jesuit Aurora (Chengdan) University Medical College, both in Shanghai. It reported that the teachers at the higher medical colleges were mostly foreign, except at the recently founded and Chinese-staffed National Shanghai Medical College (at that time associated with the Number Four Zhongshan University in Nanjing).

At the end of 1929, following Rajchman’s visit, the minister of education asked him to send someone to work with the CME on the task of raising standards and training a sufficient number of competent physicians to meet the country’s needs.¹⁷ Professor Knut Faber of Copenhagen University took on this assignment. He visited China during the last four months of 1930 and published a report the following year.¹⁸

Faber’s report emphasized that Western biomedicine still represented just a drop in the ocean of Chinese medical practice. There were some four to five thousand physicians trained in “modern medicine,” representing a ratio of one to eighty or a hundred thousand people. By contrast there were (according to the Chinese Doctors and Druggists Federated Association) an estimated 1.2 million Chinese medicine practitioners and 7 million pharmacists.¹⁹ Demand for modern Westernized medicine existed primarily in cities and treaty ports equipped with hospitals and public health and quarantine bureaus and among populations more accustomed to modern and specifically foreign inroads. Of twenty-four modern medical schools listed by the National Medical Association of China in its 1930 directory, Faber visited nineteen and obtained information on three more. He also visited six schools teaching Chinese medicine and reported the existence of another nine, along with 570 organizations said to be accepting students for the study of Chinese medicine.

Faber divided the modern Westernized group into four subsets: Government (4), provincial (2), private (13), and military (3). His comments were generally mixed or unfavorable. Among the govern-

ment group, the National Medical College of Shanghai had very good teaching but inconvenient or unsuitable clinical facilities. Conditions at the National University Medical College in Beiping were much worse. (The city of Beijing was renamed Beiping in 1928 by the Nationalist government. When the Japanese occupied the city from 1937 to 1945, they called it Beijing. The new Chinese government of the People's Republic renamed it Beijing, its current name, in 1949.) National Tongji Medical College, which followed the German system, had a bad division between theoretical and clinical teaching and needed a good hospital of its own. On the second-tier provincial vocational schools, Faber had nothing favorable to say. Predictably, he commended the PUMC and the Japanese Manchurian Medical College. The latter offered a university-level course that in 1929 enrolled 216 Japanese students but only 23 Chinese, along with a second-tier vocational course enrolling 107 Chinese. As for the mission schools, their aim was still to train physicians and assistants for mission hospitals scattered across China. All seven reportedly did good work; the Jilu Medical College in Jinan was of the highest standard. Four private schools in Shanghai and Canton were of a much lower standard, with practically no laboratories and dirty hospital facilities. The military medical schools were not much better.

Faber reported that some thirty-five hundred medical students attended these colleges. Why so few? According to him, it was because young people had little interest in the study of medicine. The expenses were too heavy, the entrance requirements too high, the resources of the colleges too few.²⁰ Faber proposed to retain the existing two-tier system and enlarge the number of students admitted to second-tier vocational schools. He advised against sending their graduates to rural districts to compete with the "native" doctors, adding that modern medical ideas were frequently seen in the practice of Chinese medicine and that basic medical sciences were now being taught in the new schools of Chinese medicine, based on both Chinese and Western ideas.

Faber's advocacy of the two-tier system and his relatively positive remarks about Chinese medicine may have struck a discordant note

with the government reform group. The Ministry of Health was led by modern medicine advocates who had trained at leading foreign medical schools. These individuals were not happy about vocational training and were adamantly opposed to the practice of Chinese medicine, because of its perceived lack of professional controls or of laboratory science foundation. Nevertheless, the CME adopted the two-tier system as a temporary measure. But lacking a permanent secretary or staff, it was unable to press ahead with this policy or achieve much of an impact on existing conditions.²¹

Central Government Promotion of State Medicine

In 1935 the CME, aided by Rockefeller Foundation support, was reorganized and provided with a permanent staff. Dr. Zhu Zhanggeng (C. K. Chu), an able young PUMC graduate with a PhD in public health from Yale, was appointed general secretary. Technical committees on nursing, midwifery, and health education were added, and the Commission was supplied with a group of eight influential technical advisers.²² With this new leadership, the CME attempted to launch a system of medical education around which reformers could focus their energies.

Looking out at the country as a whole, the CME saw a mortality rate three times that of the United States, in which over 70 percent of deaths were due to preventable diseases. Westernized biomedicine by itself could have little impact on this problem. After one hundred years of it, few Chinese, according to the CME, appreciated the value of modern scientific (Westernized) medicine. The implication was that the missionary model of hospital- and clinic-based delivery systems, based as it was on a curative and individualized approach to health care, simply could not do the job. The curative approach was medically and culturally too slow. In addition it was too expensive. The average Chinese community, it was calculated, could afford only ten cents per capita per annum for health care.

But the preventive approach, pioneered by Chinese leaders (with Western financial support) at Dingxian and several other model health stations, had shown what could be accomplished through a system of what the reformers called State Medicine. It offered a frontal response to the morbidity and mortality problems that could function within existing systems of governance at acceptable economic costs. As a societal rather than individualized strategy, it fitted in better with Chinese administrative and cultural norms, and even though Western in ideological origin, it would be taken over and managed by Chinese. Last,

and certainly not least, it was modern and came with international endorsement from the League of Nations as well as from U.S. foundations. For reasons such as these, one can understand why the whole concept of State Medicine would appear so attractive to the government's CME reformers and why they were so eager to endorse it.

In 1935 the CME developed an ambitious plan to staff and promote state medical service in rural areas. The plan relied on advances in rural reconstruction (through changes in land tenure and rural government). In the 1930s a vast gap stood between existing conditions and declared goals; thus it was only in Sichuan that significant progress occurred at an almost province-wide level. Still, it is significant—and not well known—that a Nationalist government ministry authorized the promotion of a comprehensive system of publicly sponsored community health service.²³ By 1935 State Medicine had become the prevailing goal of China's medical service reformers, thus providing an alternative to the laboratory-based model of institutions such as the PUMC, as well as to the hospital service training carried out at missionary medical schools. Yet at this time the promoters of State Medicine were all graduates of mainstream experimental research and teaching institutions in China or abroad and were committed to furtherance of laboratory-based clinical medicine at the higher levels of biomedical education. Public and preventive health training remained then and later a low priority in most medical education curricula.

In surveying medical education in China at that time, the CME reported that there were twenty-seven medical colleges divided into three types²⁴: The college type (nineteen), which offered high school seniors a six-year curriculum and a medical degree; the second-tier medical vocational school (six), which offered a four-year curriculum and no degree and for which an additional one-year practicum was required for a diploma; and finally one or two so-called medical schools operating in border provinces at marginal standards. The difference in quality was graphically demonstrated by the range in annual budgets, which varied from \$2,657,380 to \$58,803. The former belonged to the PUMC and was in a class by itself. The next highest budget shown

was that of the National Zhongshan University Medical College (\$537,000). Excluding the PUMC, the average budget of the seventeen other schools was \$191,000.²⁵ Thus at this time budget revenues heavily favored Western-controlled colleges, enabling them to continue exercising a leading influence over Westernized biomedical education.²⁶

As to teaching staff, the CME reported 706 instructors in 19 institutions, of whom 120 were foreign, 230 were returned students (88 from Japan, 66 from the United States, and 51 from Germany), and 365 local graduates. Basic science laboratories were reported to be generally insufficient and completely lacking in one or two schools. Only two institutions regularly carried out autopsies. With the exception of two or three, none of the teaching hospitals was well organized. Most schools lacked both a public health teaching field and a properly developed and utilized library.

In April 1936 the CME convened a conference of medical school directors to see what could be done about this situation. Over a three-day period the participants discussed curricula and syllabuses and the difficulty of recruiting students into the second-tier vocational schools. Various site visits were made to newly established health agencies in Nanjing, including one to the recently relocated Army Medical College, where the effects of a new American-oriented curriculum and staff were reported to be a “revelation.”²⁷ The participants recommended the establishment of an experimental medical school that could demonstrate the proposed new system for training personnel for State Medicine. Meanwhile, the CME pressed forward with site visits and publications designed to promote State Medicine training and improve medical teaching. Ten fellowships were offered to improve teaching in the basic sciences.

During the next academic year the CME went ahead with the planning of a demonstration college. A preparatory committee was organized, consisting of three leading advocates of State Medicine: Drs. Lin Kesheng, Chen Zhiqian, and the CME’s executive secretary Zhu Zhanggeng. The first two were on the faculty of the PUMC. Chen had been responsible for developing the Dingxian rural health program²⁸;

Lin, already an internationally respected physiologist, had taken the lead in developing frontline medical rescue teams for the Chinese Red Cross. The government appropriated funds for buildings, and the Jiangxi provincial government donated over two hundred acres of land in Nanchang. The College was designed to train physicians, vocational health workers, and village aides, along the lines advocated by the CME.²⁹ To emphasize its significance as a state-sponsored enterprise, the College was named National Zhongzheng Medical College after the formal name of President Chiang Kai-shek. By this time the possibility of a full-scale Japanese invasion of China seemed ever more likely. Nevertheless, the College opened in spring 1937, just as war was about to break out.³⁰

Nationalization of Medical Colleges

The National Zhongzheng Medical College was the first to adopt formally the goals of State Medicine, but not the first to be directly supervised by the national government. As early as September 1927 a group of medical patriots, imbued by the concept of “education for national salvation” and seeking to establish a completely Chinese-managed university-level institution, had set up a medical college in a suburb of Shanghai as one of the eight constituent colleges of the National Central University in Nanjing (at that time called the Number Four Zhongshan University). The college realized a dream contemplated by the Rockefeller Commission twelve years earlier but abandoned because of the expenses lavished on the founding of the PUMC. One of China’s leading Western-trained medical scientists and educators, Dr. Yan Fuqing (F. C. Yen), was appointed director. The college started with eight staff and twenty-nine students; they were drawn from the Xiangya (Hunan–Yale) college in Changsha, which was at that time suspended; St. John’s University Medical College in Shanghai; the PUMC; and the Jiangsu Special Medical College. Financial aid was obtained from provincial treasuries and private citizens, the China Foundation (U.S. Boxer Indemnity Fund), the Rockefeller Foundation, and the Chinese Red Cross.³¹ In 1932, during the outbreak of hostilities with Japan, the College’s buildings and an ambulance were destroyed and a large portion of its equipment lost. Fortunately the college was able to reestablish itself on another site with financial support from various Chinese and foreign donors. It became an independent foundation with its own teaching hospital, schools of pharmacy and nursing, and a public health training field site (the Gaoqiao [Kaochiao] model health district).³²

In 1935 the government set up a new National Central University Medical College, this time in Nanjing. Dr. Qi Shounan (S. N. Cheer), a Johns Hopkins–trained clinician who was then chief of the medical

service in the Central Hospital in Nanjing, was appointed president. The college began without buildings of its own, but in 1936 some were erected to accommodate the preclinical departments. The college conducted two years of preclinical education before the outbreak of war in 1937 necessitated a radical change in plans.³³

The government had also brought under national direction several medical schools originally founded under private auspices. These included the medical college of National Zhongshan University in Canton, an originally private foundation incorporated into the university in 1927 and provided with several German professors in the basic medical sciences and a curriculum and library oriented towards German language instruction.³⁴ In Shanghai the German-founded Tongji Medical College had begun to come under Chinese government control as early as 1917, when diplomatic relations between China and Germany were severed. After the war, relations with German agencies were reestablished, and the college continued to follow a German curriculum. In May 1927 it was confirmed by the Nationalist government as the medical college of a national university.³⁵ In Beijing the special medical college originally founded in 1903 was reorganized in 1927 as the medical college of the National University of Beiping.³⁶ In Wuhan plans were under way to develop a medical college at the National Wuhan University when the war with Japan broke out.³⁷ In 1938 the Wuhan medical college was reconstituted in Guiyang as an independent national medical college.³⁸

Thus by the time that war broke out in July 1937 some progress had been made in the development of a national medical educational system. An active CME had been created with a distinctive philosophy and a plan for putting it into operation. At the national level eight colleges (including a National College of Pharmacy) were functioning or about to function under the aegis of the Ministry of Education. Another seven provincial medical colleges or medical vocational schools existed,³⁹ along with fourteen missionary or private medical colleges and three military medical institutions. At least fourteen colleges additionally offered premedical courses.⁴⁰

With the exception of the PUMC, none of these colleges was well equipped or funded (since the Japanese occupation of northeast China in September 1931 the colleges in that area had been removed from Chinese jurisdiction, but at least half possessed experienced and competent staff). On the other hand, as the CME's second annual report pointed out, over 30 percent of the medical and midwifery schools were concentrated in Jiangsu province, particularly in Shanghai, and half of China's territory was devoid of any form of modern biomedical institution. To correct this imbalance, the CME wanted to divide China into five regions (north, mid-south, mid-east, south-east, south, and west) and identify or establish a competent medical school that would become the central school of each region.⁴¹ Before long, this idea would become an urgent necessity.

Crisis and Reorganization

The outbreak of war in July 1937 radically transformed China's existence. Bitterly fought campaigns around Shanghai and Nanjing left large areas of those cities devastated. The Chinese armies were forced to retreat, leaving civilian populations at the mercy of the invader. In the north the military campaigns were accompanied by massive flooding and natural devastation, spreading disease and sending millions into flight as refugees.⁴² The Nationalist government was forced to withdraw to Central China and thence to the mountain stronghold of Chongqing in Sichuan. In Chongqing it was beyond the reach of Japan's armies but not of its planes, which bombed the city mercilessly. A war of attrition ensued, in which the Japanese forces dominated the eastern cities and communication routes, aided by a pro-Japanese regime in Nanjing. Nationalist military forces continued to hold sway in the southwest and northwest, while Communist forces carried on guerrilla warfare in northern and eastern China.

At first the war inspired a wave of patriotic resistance, which united the population and many of its warring factions behind the leadership of the Nationalist government and its Generalissimo Chiang Kai-shek. This unity was soon eroded by internal political conflicts and the damaging effects of a prolonged military stalemate. As the war progressed, the Japanese succeeded in blocking unoccupied China all the way from the northeast to northern Burma, forcing the Chongqing government to depend on the precarious and expensive lifeline of the trans-Burma air "hump." Inflation set in, rising dramatically and irreversibly as the war continued.

Quite apart from its political effects, the war caused a seismic upheaval in China's social and economic life. Whole populations were uprooted, institutions torn from their moorings, and buildings and equipment reduced to rubble. In addition to the mass migrations of refugees and orphans, many of China's intelligentsia joined the retreat to western China, where they continued their work under increasingly impoverished circumstances. During the first four years

of the war, foreign support was limited very largely to unofficial voluntary assistance, creating in the minds of many politically aware Chinese a sense of international isolation and abandonment. Nationalism intensified until the impoverishing inflation overwhelmed all other considerations.

All this upheaval took its toll on medical institutions and their participants. But the responses and fortunes of each institution varied substantially, depending on qualities of leadership, institutional spirit, sense of vocation, international contacts, and less predictable factors such as developments in the military campaigns. Although the Japanese military made a point of attacking hospitals and medical units (including ambulances identified with red crosses), modern biomedicine in China survived the war and was in various ways transformed by it.

At the CME a reorganization occurred within a year of the outbreak of war, after the government replaced an internationalist minister of education with a leader of the conservative wing of the Nationalist Party, Chen Lifu. Despite frantic lobbying, Dr. Zhu Zhanggeng was ousted and replaced by the German-trained Dr. Wang Yuanchen. At that time Dr. Wang was president of the Jiangsu Provincial College of Medicine, of which Chen Lifu and his brother Chen Guofu were the founders.⁴³ Much to the horror of the reformers, representatives of colleges of Chinese medicine were brought onto the Commission and its standing committee. These changes reflected the strong interest in Chinese medicine in conservative circles of the Nationalist Party and Chen's determination to give them a voice in government education policy.⁴⁴ To add to the discomfiture of the reformers, the NHA had been once again demoted in January 1938 to a department within the Interior Ministry, and its forceful director-general Dr. Liu Ruiheng replaced by the older and more cautious Yan Fuqing. Thus the new leaders of the Education Ministry could reorganize the CME without worrying too much about pressure from the Public Health establishment. Foreign observers such as the Rockefeller Foundation's representative and public health expert Dr. John B. Grant, who had a personal interest in State Medicine, persuaded themselves that the new

CME would follow the underlying principles of the old CME's prewar policy. Consequently the Rockefeller Foundation, despite reservations, continued to support the CME program.⁴⁵

Despite these upheavals the CME did not lose sight of its responsibilities to the medical colleges, several of which had been severely affected by the onslaught of war. The 1938 report provided a graphic tabulation of the effect of one year of hostilities on thirty-three institutions. One had been completely wiped out, six suspended, and two "more or less" suspended. Except for seven (and one other not listed), all the rest were no longer in their prewar locations, and several of the colleges still occupying their campuses were planning imminent moves. The CME itself had been forced to abandon its offices in Nanjing, taking only a few important documents and drafts of textbooks. Its members had had to take on emergency work, resulting in a paralysis of administrative function for four months.⁴⁶

The crises to which China's modern medical colleges would now have to become accustomed can be illustrated by citing some specific instances. Japanese bombing of Nanchang (the capital city of Jiangxi province) forced the fledgling National Zhongzheng Medical College to retreat to the small rural town of Yongxin in west central Jiangxi. It was then ordered by the central government to relocate in Kunming, capital of Yunnan province in southwest China (and 750 miles away from Yongxin as the crow flies), where it resumed teaching at the end of 1938 in "hastily constructed pavilions." The Japanese campaign in Burma led to the bombing of Kunming in 1940, as a result of which the college moved to Zhenning in Guizhou province. Because of repeated requests from the Jiangxi provincial government, it moved back to Yongxin in autumn of 1941, where it rented space in local temples.

During these wanderings, the college, never well endowed to begin with, had to abandon large amounts of chemicals, laboratory supplies, and instruments. As Yongxin's hospital was too small, the college did its clinical teaching at a 180-bed provincial hospital at Taihe, ninety kilometers away, which was frequently disturbed by air raids. The China Medical Board (CMB) representative Dr. Claude Forkner, visiting in

December 1943, found students eating a meal of rice, two tablespoons of bean sprouts, and some salty water for soup. Owing to lack of furniture and equipment, they all ate standing up. At that time a typhoid epidemic was ravaging the district, and according to Forkner many of the students were critically ill. Nevertheless the college succeeded in graduating its first class of twenty-two members and had another class of forty-three serving as interns in various hospitals. Its numbers had been increased by refugee students from medical colleges in Hong Kong, Canton, Shanghai, and Fujian, of whom half had become State Medicine students.⁴⁷

In another case, National Tongji University Medical College had its campus destroyed by Japanese bombs and shells during the assault on Shanghai in 1937. The College moved to Jinhua (Zhejiang), then to Ganzhou (southwest Jiangxi), and then to Kunming in China's far southwestern province of Yunnan.⁴⁸ Japanese bombing of that city resulted in a further move late in 1940 to Yibin, a prefectural city adjoining the Yangtze River in southern Sichuan. Owing to all these migrations from one place to another, reported the dean, the college suffered numerous (unspecified) losses.

In Yibin, the college, like many others elsewhere, had no running water and employed coolies to fetch water from the Yangtze. It had a sixty-bed teaching hospital, onto which it built a large operating house in the winter of 1942. In summer 1943 the latter was destroyed by a flood, reducing the hospital to forty-nine beds. The college hospital had an x-ray unit but no film and no spare x-ray tubes. Most of the faculty suffered from malaria, but none had resigned. Student nutrition was very unsatisfactory. Yet by 1943 the college had produced 585 graduates, and it had at that time 272 medical students in residence, most of them from occupied areas. Its senior faculty, most of whom had had post-graduate experience in leading German medical schools, were making do with rudimentary equipment and, when necessary, dictating notes to students. Despite these discouraging circumstances, college bacteriologists carried out and published research on the etiology of "pa" disease (a paralysis associated with food poisoning) in southwest Sichuan.⁴⁹

Organization of Wartime Medical Centers in Nationalist China

Once the CME had been reconstituted in Chongqing in 1938, it drew up a wartime program to reorganize medical education in four key centers. One of the first such sites was at Chengdu, at the home of the missionary-founded West China Union University Medical and Dental College. The two-year-old National Central University Medical College was dismantled and moved to Chengdu in advance of the abandonment of Nanjing. At the missionary Jilu Medical College (originally Cheeloo) in Jinan, Shandong, 85 percent of the students and fourteen Chinese staff also relocated at West China.⁵⁰ The West China College was a well-established institution, having opened in 1914 and united with the University's Dental College in 1929. As Rockefeller Foundation representative, Dr. Grant, visiting in April 1938, reported that the college had 320 students and a \$400,000 budget. It had recently received external grants from the CME, the provincial government, the China Foundation, and the British Boxer Fund amounting to \$90,000. By that time, the college had opened its doors to several other institutions besides Jilu and National Central Medical College. Grant noted that "this will be the only stable medical school behind the Chinese lines. It should be strengthened."⁵¹ Despite difficulties in accommodation and in integrating different curricula, the CME concluded optimistically in its July to December 1938 report that the experiment in collaboration at Chengdu had proved a success.⁵²

The second center was at Guiyang, capital of Guizhou province. This became the home of the new National Guiyang Medical College, the Xiangya (Hunan–Yale) Medical College, and two NHA institutions, the Public Health Personnel Training Institute and the Central Hospital, which served as the local teaching hospital for the Xiangya College.⁵³ A large Red Cross and army training establishment was situated at Tuyun'guan, not far outside the city. The National Guiyang Medical College had actually been initiated by the NHA on the

request of the recently appointed governor of Guizhou, who was eager to promote modernization in a notoriously poor and backward region. The college opened with a budget of \$250,000, consisting of \$110,000 reallocated from the suspended National Wuhan University Medical College, \$90,000 from the British Boxer Fund, and \$50,000 from the China Foundation. In accordance with the State Medicine plan, the college was set up in two parts: A medical college and a vocational school combining courses in nursing and midwifery. Two hundred eighty students were enrolled from over fifty medical, nursing, and midwifery schools⁵⁴ (another source lists 227 medical, 37 nursing, and 39 midwifery students). Prior to 1938, Guiyang was at most an outpost of modern biomedicine in a province having in all less than a dozen “qualified” (i.e., modern registered) physicians. The war was to transform Guiyang into an important medical center, and no matter what happened to the other institutions, it was intended that National Guiyang Medical College should stay there. The college began in temporary bamboo and straw structures, with its teaching hospital and vocational school in an old guild house and administrative offices in a nearby temple. More permanent buildings were gradually erected on a site outside the city.⁵⁵

A third regional center was established at Kunming, capital of China’s southwest province of Yunnan. The CME directed three national medical colleges to relocate in that city, where they were expected to cooperate with a newly created medical college of Yunnan University and a provincial school of midwifery. A fourth college, National Zhongshan University Medical College, moved to a nearby town. As mentioned above, the Zhongzheng and Tongji medical colleges made their way to Kunming only to have to move again in 1940. The third national medical college directed to Kunming was National Shanghai. This assignment proved easier to propose than to carry out. After some years in the international settlement, the college had moved to new quarters in the Chinese city of Shanghai. After war broke out, the former director, Dr. Yan Fuqing, moved all the equipment and library back to the International Settlement where the college

was protected from destruction. The Japanese in turn had moved into the Chinese quarters, where they set up a base hospital.⁵⁶

When Dr. Yan was appointed director of the demoted NHA, Dr. Zhu Hengbi (H. P. Chu), the college's academic dean and one of the most articulate of China's internationally trained medical leaders, became acting director of the college. According to Grant, instruction of the college's 120 students continued fairly well under the circumstances. Plans for the move to Kunming proceeded slowly, and it was not until the summer of 1939 that the three senior clinical year classes set off. According to the new Rockefeller Foundation representative, Dr. M. C. Balfour, the college had reluctantly concluded that in future years a "national school" remaining outside of unoccupied China might be less esteemed in national circles and might find itself in a fix if it remained in a foreign concession area. But, reported Balfour, only half the students would leave without pressure. Overtures from the Wang Jingwei puppet regime in Nanjing may have helped to precipitate the move.⁵⁷ The preclinical and premedical classes did not leave Shanghai until the outbreak of the Pacific War in December 1941, when the foreign settlements were seized; by that time the clinical group had relocated outside of Chongqing. This time over ninety students were evacuated, along with the majority of the basic medical science teachers.⁵⁸

The last proposed regional medical center was at Chongqing itself. The CME's 1938 plan called for the National School of Pharmacy and the National Central Midwifery School to be moved there. The following year the National Jiangsu Medical College (formed by an amalgam of two provincial colleges) moved to a site near Chongqing.⁵⁹ But the importance of Chongqing as a medical center would derive from the reestablishment near the city of the NHA and several of its most important subunits, including a central hospital and in due course the Public Health Personnel Training Institute, which had previously been situated in Guiyang. The relocation to Chongqing of National Shanghai Medical College brought another powerful institutional player onto the scene and helped to increase Dr. Zhu Hengbi's influence over the evolution of medical policy.

In early 1939 Dr. Grant recorded in his diary that the government was responding to the lessons of the war by developing an internal policy of reconstruction through resistance. The source of this information was the president of National Central University Luo Jialun, a senior official with close ties to Chiang Kai-shek. According to Mr. Luo the idea was to press development in the northwest and to “initiate Chinese socio-economic measures in place of the previous European-American ones.”⁶⁰ To follow up on this policy the CME endeavored to consolidate the reorganizations outlined above and to develop a five-year plan to double the number of individuals in medical service. Dr. Yan Fuqing wrote enthusiastically to a Rockefeller Foundation executive about the Kunming center: It combined five medical schools, it could deal with Yunnan’s “major health problems,” and it could lay the foundation for a national medical school.⁶¹ To compensate for a 30 percent cut in the budgets of the government medical colleges, the CME offered nonfinancial subsidies towards equipment and staff living expenses. It approached the Rockefeller Foundation with a request for an additional monetary grant. Refugee students from occupied areas were permitted to enter any medical colleges registered with the CME. Student loans were provided to assist refugee students in resettling. To promote training in midwifery, the CME assisted the Sichuan provincial government in setting up a provincial vocational school in Chengdu. In view of the “urgent need” to promote rural health work in the interior of China, the CME organized five one-year classes to train midwives and nursing aides.⁶²

Yet in July 1939 the student loans were discontinued, and all new graduates of registered medical colleges were ordered to report to the Ministry of Education for wartime assignments. (It is doubtful that any enforcement mechanism was in place to back up this directive). In 1940 the government health organizations underwent further reshuffling. In April the NHA was re-elevated to a subcabinet level agency, and in July the CME was reorganized. Dr. Jin Baoshan (P. Z. King), a conciliatory and tireless administrator who would shortly become director general of the NHA, was appointed the senior medical representative of a

five-member standing committee revised to favor modern biomedical expertise. Committees on health education and Chinese medicine were set up (the former had apparently been allowed to lapse). The previously provincial and mission-sponsored Xiangya Medical College was taken on as a national institution and provided with an annual government appropriation. As a result of Japanese bombing the Kunming medical center had broken up, leaving only the medical college of Yunnan University, which, according to a December 1940 report, had been heavily bombed and sustained almost irremediable losses. The CME introduced its five-year plan to double the number of people in medical service in ten years, along with tentative regulations governing medical students intending to become public physicians. They were to be exempted from tuition and board expenses but required to serve the public sector for double the length of their medical college residence. Registration of nonpublic-sector students was henceforth not to exceed 20 percent of enrollment.⁶³

The changes in leadership at the CME left some observers less than satisfied. Dr. Jin in a letter to Dr. Balfour wrote that two of his colleagues on the standing committee were “too nice” and that neither possessed a strong personality. Balfour, meanwhile, had taken a dislike to the general secretary, Dr. Wang, regarding him as incompetent and ineffective. He informed Dr. Jin that the standing committee still did “not inspire too much confidence.”⁶⁴ The Rockefeller Foundation was now looking for a way to disengage from an organization in which it was losing confidence. In May 1941 Balfour wrote to Wang informing him that aid to the CME had been terminated and that future aid to medical education would “presumably” be through direct contact with the medical schools.⁶⁵

The main reason for the Foundation’s dissatisfaction seems to have been the CME’s declining commitment to State Medicine. The previous general secretary, Dr. Zhu Zhanggeng, had been a zealous advocate of State Medicine and had had the support of an activist NHA. Dr. Wang had no comparable public health background. He worked for political leaders more interested in Chinese medicine than in the State

Medicine advocated by public health reformers and felt little pressure from a weakened and subordinated NHA. There is little in Dr. Wang's reports to suggest that during his administration State Medicine was at the forefront of CME policy. Dr. Wang seems also to have let some of the Committee work slide, but that was clearly not the primary irritant. When Dr. Grant visited China in 1942 he noted the slippage in commitment to State Medicine. The CME came in for particularly strong criticism from Grant because of its failure to coordinate medical education with promotion of State Medicine.⁶⁶

Evolution of Biomedical Education in Wartime China

The problems experienced by the CME were part of a larger picture of stress and strain endured during the war by all of Nationalist China's health institutions and, indeed, by the entire country. By 1939 the war had entered a period of military stalemate. In order to frustrate the advance of Japanese mechanized columns, Nationalist Chinese forces had destroyed lines of communication between east and west, making travel and transportation on both sides considerably more difficult. After the outbreak of the Pacific War in December 1941 and the Japanese seizure of Burma during the spring of 1942, it became more and more difficult to get civilian medical supplies into China or to move them to where they were needed. The medical colleges had to make do without scientific journals and books, as well as rely increasingly on what little supplies and equipment could be made locally. The plan to consolidate institutions in several central locations ran up against differences in institutional cultures that could not be easily ironed out. Outbursts of renewed military violence caused further migrations of medical colleges right up until the end of the war in 1945, by which time those that had come from central and east China were eagerly planning to return to their original locations.

Probably the greatest stress came from the intensifying inflation, which strained salaries and stipends to the limit, driving many faculty members to divert their time into more lucrative private practice, while others simply left the medical teaching profession. As these trends continued, senior officials and educators became more and more fearful of a decline in medical educational standards.⁶⁷

To some extent the economic pressures on medical agencies were mitigated by increasing amounts of foreign and largely American financial aid, channeled principally through the American Bureau for Medical Aid to China (ABMAC) and the CMB. The government continued to promote the development of regional and provincial medical

centers. During this period several provinces and districts in southwest China substantially expanded their health services. In the northwest the foundation of a major medical center, including a new national medical college, began in Lanzhou, the capital of Gansu province. The growing needs of the military and public health services necessitated a continuing influx of medical school graduates, in part to offset losses of staff to private practice. The medical colleges attempted in various ways to meet these exigencies.

Two Case Studies

It may help to illustrate these processes by looking at the experience of two colleges, one giving strong emphasis to clinical and laboratory-based medical education, the other more oriented to promotion of rural and community state medical services. The colleges are selected partly because the contrast in their priorities and experience is relatively clear, and partly because the documentation available for this study is better for these two colleges than for others and thus permits the development of more fully formed profiles.

National Central University Medical College

The National Central University Medical College had settled in Chengdu—even though the rest of the University had relocated in Chongqing—largely because of the receptive attitude of the well-established missionary West China Union University Medical College. But it was not long before basic differences between a predominantly missionary enterprise and an assertive national medical school began to make themselves felt. Only a year after arriving in Chengdu, National Central's director, Dr. Qi Shounan, told Dr. Grant that he was dissatisfied with the arrangement because of the “technical incompatibilities” of the West China missionary faculty.⁶⁸ An outside Chinese observer told Grant that the chief problem was the generally poor intellectual and academic qualifications of the West China faculty, who were mostly “haphazard” missionaries put into academic positions. West China was an “amateur institution” with too low standards, but, as the host college, it refused to acknowledge its academic incompetence.⁶⁹ A Western missionary leader, agreeing with Chinese criticisms, told Grant that many foreign missionaries felt that the Chengdu group were in the evolutionary stage of coastal missions prior to World

War I.⁷⁰ The Chinese chair of West China's Department of Public Health complained that a foreign mission hospital superintendent had upset proposals for cooperation with government agencies, due to the superintendent's dictatorial temperament.

The medical dean of West China, Dr. Leslie Kilborn, was a highly credentialed physiologist with MD and PhD degrees from the University of Toronto and virtually bilingual qualifications, having been born in Sichuan. He had translated a physiology textbook into Chinese and produced a laboratory manual of physiology. Dr. Kilburn tried hard to promote collaboration with West China's guest institutions, but despite his cross-cultural skills he was unable to bridge differences in cultural and professional orientation.⁷¹ As Grant summed it up, the hosts complained that the guests were displacing the hosts; the guests complained that the hosts did not understand the administrative set-up needed for teaching. Both were right, but, Grant implied, the guests more so. The mission hospitals, he said, lacked an understanding of clinical teaching, indeed had never heard of the house system (of residency-level appointments, combining supervised clinical care with specialist training) in a teaching hospital. Of all the large group of European "clinicians" at West China there was only one, at the time of the arrival of the refugee institutions, with the training requisite for a senior teaching position.⁷²

Under these circumstances it was only a matter of time before a split became inevitable. In summer 1941 Dr. Qi decided to move National Central off the West China campus and out of the currently united teaching hospital. He took over two evacuated middle school buildings, where the college set up its preclinical teaching and a two-hundred-bed teaching hospital. A forty-three-bed surgical hospital was set up in a big private residence.⁷³

These moves provoked a good deal of ill feeling among the West China group, who felt they had gone out of their way to recognize National Central by accepting Dr. Qi as director of clinical studies and director of the united hospital system. In a spirited defense they agreed that the destruction by fire of one of the mission hospitals had

left the joint colleges with insufficient clinical facilities. But a marked tendency had developed for clinical staff to engage in outside practice, and this was “especially evident” among the National Central staff.⁷⁴ The implication was that the National Central group had left to seek richer rewards. Their secession was “most unfortunate Their hospitals now compete with ours, they compete for government grants and relief funds They failed to assume their share of the costs of certain renovations”

The charge of moonlighting by medical college faculties became widely reported during the inflationary later war years and seems to have dogged the National Central faculty more than most. A Rockefeller Foundation agent visiting Chengdu in May 1943 reported that National Central clinical faculty members were all doing private practice. The junior staff members were dissatisfied because the seniors had the most lucrative practices. Incomes of some were larger than ¥50,000 a month (Chinese currency), including 40 percent commission on drugs.⁷⁵ Supporting this view, CMB representative Dr. Forkner wrote that National Central’s teachers seemed to have lost interest in teaching and for the most part engaged in private practice or business, to the neglect of their university duties. Forkner claimed he was told that this was begun by Dr. Qi, who was heavily engaged in private practice in Nanjing even before the war. It was alleged that Dr. Qi made ¥30,000 to ¥60,000 per month in practice. According to Forkner, Dr. Qi denied he was earning income from private practice, but nobody believed him. The situation at West China, Forkner added, was believed to be equally bad. With one exception, all did it under cover. The problem was that the official salaries and subsidies were far too small to maintain teachers as teachers.⁷⁶

The problem of moonlighting is illuminated in the reports of Dr. Chen Zhiqian, at that time Commissioner of Health for Sichuan province. According to Nanjing University data cited by Dr. Chen, the price index rose from 108.7 in December 1938 to 218,310 in November 1945.⁷⁷ The effect of this pressure was to drive medical practitioners out of salaried positions into private practice. Already by

June 1941 a number of Chen's staff whose salaries were under ¥400 a month had resigned.⁷⁸ In 1942 public health courses for physicians and nurses were suspended because participants were not interested in courses that could not help to improve their income.⁷⁹ By then the phenomenal rise in prices had "forced many people to go back to old-fashioned (i.e., private) medical practice, regardless of its value."⁸⁰ By the end of 1942 over 30 percent of the provincial health officers had left the service.⁸¹

In 1943 inflation overshadowed all other issues, causing a "continuous drop of moral and technical standards."⁸² By 1944, reported Chen, even public health leaders (supposedly focused on preventive health care strategies) were retreating into the time-honored practice of medical relief (i.e., care, potentially lucrative, for sick townspeople). The popular slogan in any medical school was curative medicine, and private practitioners were making fortunes out of the many profiteering merchants and landlords. Professors of medical colleges gained their reputations by the size of their private practices, and ambitious medical students watched them with admiration.⁸³ By then ¥100,000 or more could be charged for an appendectomy, ¥10,000 to ¥50,000 for tonsillectomy, and ¥30,000 for a normal childbirth delivery in a teaching hospital. Internists obtained a 50 percent commission on each prescription. The financial temptation of curative medicine—frequently "unscientific"—was "terrific."⁸⁴

Summing up, Chen concluded that "the longer the war, the worse the inflation and the greater the tendency towards medical relief. Under the present influences, medical relief of an inferior kind is flourishing in many parts of this country. Extraordinary statesmanship will be required to change the present viewpoint."⁸⁵

National Central's problems were not limited to moonlighting. In February 1942 the Japanese closed down the PUMC in Beiping, depriving the national medical colleges of a valuable source of well-trained and experimentally grounded faculty. In April the CMB, which was the primary source of the PUMC's funds, set aside \$25,000 in emergency aid for staff and students traveling to southwest China.⁸⁶

Only a small number made use of this assistance. By September there were seven medical and three nursing students and one professor and two nursing instructors in Free (meaning unoccupied) China.⁸⁷ Efforts to reconstitute the PUMC in Free China never got off the ground, partly because most faculty reportedly preferred to remain in Beiping in private practice or laboratory work, because the economic conditions were said to be less difficult there.⁸⁸ By January 1943 arrivals from Beiping included thirteen graduate fellows and nurses and thirteen medical and two nursing students. But by the end of March, one year after the PUMC's suspension, an increasing number of its undergraduates were coming to Free China.⁸⁹

These students were channeled by PUMC advisers to National Central, which was felt to have the most prestigious faculty and the best equipment and to reflect most closely the PUMC's priorities. But within a very few months this policy foundered over campus conditions and administrative requirements. PUMC students, by now numbering thirty-five, complained that they were not learning anything at National Central. Ward rounds were conducted in ten or twenty minutes and rarely lasted one hour. No clinicians were around the hospital in the afternoons. The library facilities were very poor. The dormitories were crowded, poorly lit, and infested with bedbugs.⁹⁰ On top of these problems the National Central authorities had refused to recognize PUMC matriculation as equivalent to National Central's and were insisting that PUMC students take examinations in physics, chemistry, and histology, even though there were no facilities to prepare for them. They also insisted that no PUMC student could receive a diploma until he or she had spent three years at National Central.⁹¹

The upshot was that the majority of PUMC students decided to transfer to West China, where they were warmly welcomed. Dr. Forkner supported this move on the grounds that the National Central staff had been spending practically no time in teaching, the facilities were poor, and the students were learning nothing. He liked West China, arguing that it had better facilities—among them an excellent medical library—and that it was relatively free from political maneu-

vering.⁹² Dr. Qi, for his part, explained the situation on the grounds that West China conferred an MD degree as compared to National Central's MB. Its graduates were not subject to a five-year commitment to work in the state medical service, and National Central's living quarters were not as good. He brushed aside the problems in entrance requirements but did admit that his staff were getting "very restless" about the opportunities in private practice.⁹³ A colleague of Dr. Qi's pointed out to CMB officials that thirteen of the PUMC students had not spent over one year at the PUMC, and that little was known about what they had been doing between February 1942 and spring 1943.⁹⁴

The dispute over the location of the refugee PUMC students triggered an uneasy debate between Dr. Balfour (the Rockefeller Foundation representative) and Dr. Forkner (the CMB representative) about the merits of the national medical college system. Balfour, whose thinking was much in line with Grant's, argued that foreigners must go along with the "national movement and spirit in China," even though there might be disadvantages and slow progress at times. Forkner, on the spot and never one to take criticism lightly, countered that the question was, where could one best train leaders in medicine and related subjects? He would go along with the national spirit and movement if they led in the direction of progress in medical education, otherwise not.⁹⁵ But elsewhere Forkner made it clear that he distrusted the trend towards nationalization of higher education in Free China, claiming that the chief effect was more centralized control.⁹⁶

Despite such problems, National Central clung to its role as a leading national medical college, and under Dr. Qi's astute and assertive leadership it was able to retain its clinical faculty and obtain funds to support basic medical science teaching and research. A 1944 report showed that the college had 432 students (up from 374 in 1943), 294 staff (up from 273), and 176 hospital beds. Its library had 2,140 books, of which 1,365 were in English. Faculty publications included a textbook in physiology, a laboratory manual for pharmacology, and popular pamphlets on a variety of medical subjects.⁹⁷ Departmental reports indicate that the Department of Parasitology in 1943 carried out a

field survey and laboratory study of schistosomiasis in Sichuan.⁹⁸ The Department of Public Health published in 1944 two issues of *Modern Medicine Quarterly*, which were widely distributed in the province.⁹⁹

The Department of Physiology and Pharmacology, in addition to the publications noted above, reported several research studies, including one on the toxicity of DDT. Its chairman, Dr. Cai Qiao (C. Tsai), published eight articles during the war years in Chinese and American journals.¹⁰⁰ A professor in the Department of Anatomy published various studies on the racial anatomy of the Chinese in the *American Journal of Physiological Anatomy*.¹⁰¹ The Department of Biochemistry analyzed more than 150 kinds of Chengdu foods.¹⁰² The following year the Department of Public Health undertook several epidemiological studies, including an analysis of the birth weight of newborn infants and an analysis of pathogens in soybean sauce.¹⁰³

All this work and more was supported by the assiduous fundraising of Dr. Qi. Between 1942 and 1946, he obtained \$126,055 from the CMB, substantially more than any other medical college.¹⁰⁴ Dr. Qi also obtained significant U.S. dollar grants from ABMAC, which were used to subsidize his full-time basic medical science staff.¹⁰⁵ The college and its teaching hospital published detailed and in some cases exhaustive reports, testifying to the managerial competence and clinical focus of its administration.¹⁰⁶ In short, despite all its difficulties (and they were many), National Central stuck to its scientific goals and remained throughout the war a standard-bearer for the Western and specifically American model of clinical and laboratory-based biomedical education.

National Xiangya Medical College

A rather different set of problems and responses can be seen from reviewing the records of the Xiangya Medical College in southwest China's Guizhou province, in the city of Guiyang. This college had been founded in 1914 through the cooperation of the Yale medical mission in Changsha, led by Dr. Edward H. Hume, and a Chinese

association sponsored by the provincial government. Dr. Yan Fuqing became director of the new college and Dr. Hume its dean.¹⁰⁷ Yan had already acquired advanced medical degrees from Yale, the Liverpool School of Tropical Medicine, and Johns Hopkins and was rapidly emerging as one of new China's leading medical research scientists. While working in Changsha he carried out and published major studies on the incidence and control of hookworm disease. He was a leading figure in the establishment of the Chinese Medical Association and became its first president. He was a pioneer in the promotion of public health and in the development of colleges of modern medicine led by Chinese physicians and reflecting Chinese medical aspirations.¹⁰⁸

Hume, for his part, was an enthusiastic Sinophile. He developed a broad appreciation of Chinese culture and a professional interest in the practice of Chinese medicine. It was his hope that graduates of the college "would lead their people across the chasm between empirical [Chinese] and experimental [Western] medicine . . . [to] a new system of medicine which would provide treatment and preventive care for all the people of China."¹⁰⁹ What prophetic words! In 1926 Hume resigned as a result of foot-dragging by American trustees over the transfer of managerial authority to Chinese staff.¹¹⁰ A year later political and military upheaval forced the suspension of the college. It reopened in 1929 with forty-four students in two premedical classes. Two years later the college registered with the Ministry of Education and became eligible for some national as well as provincial government aid. It also received aid from the British Boxer Fund.¹¹¹

The college was now Hunan's premier medical educational institution. Before the war plans were under way to develop a province-wide public health program, largely under Xiangya's direction.¹¹² After the war broke out the college shifted to providing war service and took on sixty refugee students. Preparations for evacuation began in June 1938, and as a result of air raids the college was moved to Guiyang in September. Forty tons of equipment and supplies, including cadavers, were transported, and eight two-ton buses carried the students, staff,

and families. The move was completed on October 11, and the college reopened with 120 students on October 24. Land was leased from a Hunan guild house, and by March 1939 the college had three two-story structures and several small shacks for classrooms and dormitories. Senior students were lodged at the Central Hospital, which served as the clinical teaching facility.¹¹³

But the college was still not safely out of the war zone. In July 1940 several bombs exploded on the campus, and four nurses were killed in the Central hospital. The college remained affiliated with hospitals in Changsha and the provincial wartime capital of Yuanling, which were used for its interns and largely staffed by its faculty. In January 1942 the college buildings in Changsha were destroyed by fire during the third battle of Changsha along with all the remaining equipment not moved in 1938.¹¹⁴

By this time the college had largely weaned itself from its missionary origins and adopted the ideology and practice of State Medicine. "The Hsiangya Medical College," said the 1941 report, "aims to serve China as one of her best medical schools. . . . Its educational policy is directed towards training good citizens in addition to qualified physicians. It strives to instill into students the rationale of State Medicine and the spirit of public service."¹¹⁵ Students were organized under military discipline and educated according to the tutor system advocated by the CME. Staff and students formed a joint committee to participate in public education. Every year most seniors went off to rural districts in the summer to help in anti-epidemic work in collaboration with the public health authorities.¹¹⁶ Philosophy and practice of this sort enabled Xiangya to cooperate quite effectively with National Guiyang Medical College, which was led by comparable guidelines. Dr. Balfour, visiting in May 1939, found Xiangya governed by an "extraordinary determination and spirit."¹¹⁷

The college's main difficulties at this time were financial. Organizationally it was neither a missionary nor a government institution, consequently it lacked an assured financial base. The move to Guiyang had cost ¥20,000 and the erection of temporary buildings another

¥18,000 (then \$3,000 by Balfour's estimate). The college's revenue in 1938 and 1939 was optimistically estimated at ¥125,000; its budgeted expenses were ¥165,000.¹¹⁸ By 1939 the college was facing a financial crisis, and there were doubts that it could continue. Dr. Yan Fuqing, at that time director of the NHA, discussed with Grant the possibility of emergency aid, but according to the latter the semi-official nature of Xiangya made central support somewhat more difficult.¹¹⁹ But Xiangya was too valuable an enterprise to let go; consequently the following year it was nationalized and provided with a government grant of ¥242,800.¹²⁰ This was not enough to meet the college's expenses, but financial aid from ABMAC, the CMB, the Rockefeller Foundation, the British Boxer Indemnity Fund, the Yale in China Association, and local sources helped to cover the deficits.¹²¹

Xiangya's ability to survive was based on a highly charged sense of mission. Throughout the war it maintained strong emotional and practical ties with Changsha and Hunan. In March 1944, reported the director, Dr. Zhang Xiaoqian (H. C. Chang), the college planned to move its clinical classes back to Changsha "where its primary mission lies."¹²² The Xiangya hospital, though badly damaged, still maintained 150 beds and a large outpatient attendance. The provincial government wanted the college back, and the Hunan people "clamor for our return."¹²³ When the Japanese later that year mounted a sweeping military offensive into south and southwest China, the Xiangya hospital in Yuanling became a military base hospital and sent an operating team out to help treat wounded soldiers. Unfortunately Changsha fell to the enemy. All the Xiangya establishments "were laid in ruins," and the fate of the staff was unknown. It was, reported Dr. Zhang, a terrible blow to the college materially and psychologically. "But," he asserted, "we are . . . determined to hold on and persevere."¹²⁴

In this latter respect, Xiangya was truly successful. Despite the pressures of accelerating inflation the college held on to its faculty and in the commercially modest context of Guiyang avoided the conflicts of moonlighting. Under Dr. Zhang's stern and unflagging leadership, teaching and discipline were upheld.¹²⁵ Probably the college's biggest

achievement was its management of students. Nearly all of the Xiangya students were refugees, cut off from family support and dependent on public aid. To cope with this situation the college developed an active student life program. Student organizations included a student self-government association, a student YMCA (in 1941 it had 99 members out of a total enrollment of 120), an active student Christian fellowship group, a glee club, a dramatics club, a volleyball team, and a student self-help society, which raised relief funds for impoverished students. Students slept in small dormitories holding twelve to fourteen people and did their own cleaning and most other jobs, including night watch.¹²⁶

To stave off the effects of inadequate nutrition, the college health service vaccinated all students against typhoid, cholera, and smallpox and students in clinical work against tetanus. As a result of rigorous health care, the incidence of active pulmonary tuberculosis was kept down over three years to only 2 percent, even though fluoroscopic examinations showed that 80 percent of the students had spots on their lungs.¹²⁷ Eligibility for financial aid increased through the war years. In 1941 55 percent of students were receiving aid. By 1942 this had risen to approximately 75 percent and by 1944 to over 80 percent, although the vast majority were still reported to be in pitiful plight financially.¹²⁸ The curriculum emphasized laboratory work, individual instruction, and small group conferences. A thesis involving original work was required for graduation.¹²⁹

In December 1944 these standards were once again put to the test when the Japanese drive into southwest China forced Xiangya to evacuate from Guiyang. The main body of students went off by foot to Zunyi north of Guiyang city, where with the assistance of alumni the women were able to continue by truck still farther northward to Chongqing.¹³⁰ Sixty percent of the college's equipment was trucked out and reassembled in space allotted by the Chongqing army hospital and nearby facilities. This time the expenses of the move and relocation cost a staggering ¥25 million.¹³¹ Teaching resumed in early March, and the college made up for lost time by shortening the

summer vacation. Conditions at the Chongqing campus were primitive. Dissecting was done in a large floorless room, which served as sleeping quarters for women students. Students slept fifty to sixty in a room and ate outside in a yard or under a mat shed.¹³² The college survived this latest ordeal and was even able to put on a four-month course in premedical and preclinical science for fifty-one unqualified physicians recruited for service with the Chinese National Relief and Rehabilitation Administration (CNRRA).¹³³ Soon afterwards it began preparing to return to Changsha.

The experiences of National Central and Xiangya suggest that leadership of the chief administrators exerted considerable influence on the evolution of institutional goals and practice. Dr. Qi and Dr. Zhang had different visions of the purposes of medical education and different ideas about how to maintain standards, but similar resolve in pursuing them and in attracting the support of Western agencies. One could sum up these differences by noting that Dr. Qi was interested in maintaining the research and clinical competence of his faculty and Dr. Zhang in maintaining the health and capability of his students. Dr. Zhang also had his sights set on community service. Several other medical colleges, particularly National Shanghai and National Guiyang, were marked by the direction of strong, sophisticated physicians who had had outstanding medical education. Such leaders felt themselves equal in professional attainment to their Western counterparts and were thus not uncomfortable about approaching Western agencies and discussing their needs. Most of the remaining colleges were much less fortunate in this respect. Consequently they were unable to raise comparable funds from Western sources and continued to depend heavily on the Ministry of Education and the CME.

Changes in Central Government Leadership: From Nationalism Back to Internationalism

In the early 1940s the CME and the Ministry of Education appear to have leaned towards an increasingly conservative and nationalistic outlook. In the late summer of 1943 Dr. Dai Tianyou, a Shanghai Medical College graduate of 1933 with an MPH from Harvard, was appointed CME executive secretary. This was regarded by medical college leaders as a step in the right direction, as Dr. Dai had a public health background and was a protégé of Dr. Zhu Zhanggeng. But Dr. Dai was young and in no position to challenge the minister and his associates. In October the Ministry sent a letter to the missionary-controlled West China Union University Medical College reminding it that all medical colleges should plan their teaching program according to the Ministry's revised curriculum, report clinical histories and diagnostic data in Chinese, and identify drugs according to the government's 1932 pharmacopeia.¹³⁴ In November the Ministry put out regulations for students wishing to study abroad, requiring them to pass an examination and attend a course at the Guomindang's Central Institute of Party and Political Training. A supervisory bureau was charged to examine the scholastic record and thought and conduct of those already studying abroad. In January 1944 Dr. Dai himself was dispatched for almost six months to a training camp in a Chongqing suburb.¹³⁵ These moves were not well received by the foreign medical establishment and led Dr. Forkner to criticize the CME publicly as a form of "national control on medical education."¹³⁶

When not attending the training camp, Dr. Dai attempted to keep up with CME business. He reported in April 1944 that there were then twenty-four medical colleges in the interior, seventeen of college and seven of vocational school standing. These institutions averaged around thirty-five teaching staff (mostly junior) and two hundred students and turned out approximately five hundred graduates a year. Because of

limited laboratory equipment, little hope existed of increasing enrollments, and because of lack of funds for salaries, the staff members were “more and more” going out for private practice. Education was losing ground to inflation and war weariness. By July Dr. Dai noted that the CME’s goals were largely to consolidate equipment and conserve teaching personnel in existing colleges.¹³⁷

At the end of 1944, just eight months before the end of the war, when the Japanese military onslaught into southwest China was at its most threatening and the American military presence in that region building up rapidly, the government went through a major reshuffle in leadership. The minister of education, Chen Lifu, was replaced by Dr. Zhu Jiahua, a one-time medical student turned engineer and geologist who had served as president of the Academia Sinica, as vice president of the executive yuan, and in many other senior government positions. Dr. Zhu brought in as chair of the CME Dr. Lin Kesheng, the internationally known British-trained physiologist and vigorous proponent of State Medicine, who was then serving as deputy director of the Army Medical Administration. The changes signaled a reversion to the Ministry’s and the CME’s earlier internationalist orientation. In March 1945 the CME held a meeting attended by Minister Zhu and Vice Minister Han Liwu (another internationalist) to develop ideas for the future of medical education. Six foreign agency representatives, invited to attend the meeting, pledged assistance.¹³⁸

The Challenges of Postwar Reconstruction

World War II ended unexpectedly when the Japanese surrendered in August 1945 after the United States obliterated two Japanese cities with atomic bombs. In Manchuria the Japanese military collapsed, but in China proper, Japanese troops kept themselves organized and under military discipline as they prepared to surrender to Chinese forces. Both the Nationalist and the Communist forces wanted the weapons and equipment of the Japanese troops.

Within the Nationalist Guomindang government, all government agencies and various colleges and military organizations prepared to move back into the areas of China that had been occupied by the Japanese. The move was in general from southwest China back to the populous regions of east and north China and particularly from Chongqing down the Yangtze and back to the old Nationalist capital of Nanjing. Communist forces in northwest China were also preparing to move east where there were many population centers and where most of China's cities were located.

There was no question that China's medical colleges, most of them originally from territory the Nationalists were preparing to reclaim, were desperate to return to their original locations. Surveys of the time graphically express the difficulties that Nationalist China's medical colleges faced. An account by Dr. Zhu Hengbi, written in English for the information of foreign readers, gives examples of the appalling living and professional conditions. To cite a couple of examples: The paper of student notebooks was so thin that it tore when the pen touched it and melted when the ink flowed. Notes were therefore usually illegible, especially under the dim nocturnal light of tung oil lamps. In addition, the quality of the tung oil was so bad that the nostrils of students filled with soot after one to two hours of study. Perhaps most shocking, even the rats were hungry, gnawing holes in shoes and clothing and the walls of huts.¹³⁹

According to Dr. Leo Eloesser, a United Nations Relief and Rehabilitation Administration (UNRRA) surgeon who spent fourteen months working in and visiting medical colleges and teaching and mission hospitals throughout China, anatomy and physiology teachers were especially scarce because of hopeless poverty and very badly equipped departments. Other basic science departments were marginally better off because their laboratories were subsidized. Private schools were tainted with commercialism, “a few of the mission schools being among the worst offenders.” Some of the smaller colleges were diploma mills—medical schools in name only.¹⁴⁰ Forkner reported to the CMB a serious shortage of senior staff in biology, biochemistry, obstetrics and gynecology, otolaryngology, genitourinary surgery, and neuropsychiatry. He concluded that these problems seemed insurmountable.¹⁴¹ Dr. Dai himself confirmed this pessimistic review by stating that two-thirds of the departments of existing medical colleges were short of teaching staff above the level of instructor.¹⁴²

Further problems arose once the refugee colleges began the task of returning to their original homes. National Shanghai Medical College, which had remained more stable than most, lost all its equipment, supplies, and files when the boat carrying them got into an accident and caught on fire while in transit down the Yangtze River, which flowed from the interior of the country toward Shanghai on the coast.¹⁴³ National Xiangya returned to Changsha in south China to find nothing left of the medical college buildings except charred walls and piles of broken brick covered by a dense growth of rank weeds and wild shrubs. The hospital building had been partially destroyed and the surviving quarters abandoned in haste by the enemy, leaving a scene of widespread confusion and filth. National Zhongzheng Medical College returned to Nanchang to find eight of nine buildings totally destroyed. A visiting professor writing in 1947 reported that nearly all of the laboratory equipment was destroyed or confiscated, the library gone, and the faculty struggling to operate under deplorable conditions.¹⁴⁴ National Tongji Medical College was obliged to seek temporary quarters as all its buildings had been ruined during the war.¹⁴⁵

National Guiyang Medical College had abandoned its arduously constructed campus during the evacuation of Guiyang in December 1944. Its normally imperturbable director, Dr. Li Zongen (C. U. Lee), reported a staggering material loss, especially in the new campus, where only the outer shells of the buildings were left.¹⁴⁶ These losses had resulted not from enemy action but from an influx of Chinese troops and refugees under conditions of extreme cold. Troops had set fire to buildings and chopped up the college's furniture as a means of keeping warm, while the college's new laboratories had been wrecked by "unidentified mobs."¹⁴⁷

It must have taken considerable willpower to overcome such appalling setbacks. Money alone could not buy back what had been lost. In this respect China's medical colleges were now fundamentally beyond the influence of foreign financial aid or missionary enterprise. Stripped of material resources and operating under conditions of acute inflation, they could only fall back on the bedrock of trained leadership and professional vision, both of which had survived the war to some extent.¹⁴⁸

For example, undeterred by its material wreckage, National Guiyang Medical College announced that its postwar mission in southwest China was to promote the development of State Medicine, "which is deemed to be the best practical system of socializing medical science under the existing socio-economic conditions of China." A clear understanding of the health problems of the nation and a real interest in state medical practice would determine the success of the students in their future careers. "The entire contents of the teaching program should be along such basic lines."¹⁴⁹ In Changsha, National Xiangya's clinical staff got the hospital reopened by October 1945 and had 130 beds in operation by the end of the year. Patients were "crowding in" with dysentery, typhoid, typhus, malaria, and accident injuries. None were turned away for lack of funds. Reconstruction of the college buildings began in April 1946 as soon as money could be appropriated.¹⁵⁰

In Lanzhou a well-administered central hospital and an outstanding nursing school provided the basis for the development of a medical

college to serve the huge northwest hinterland. The UNRRA medical leaders Drs. Berislav Borcic and Liu Ruiheng visiting in 1947 found there an “excellent spirit of cooperation.”¹⁵¹ By contrast Dr. Liu found National Zhangshan Medical College in Guangzhou to be in poor condition because of a weak dean, while National Shenyang Medical College—recently recovered from the Japanese—was in “just a mess of disorganization,” again because of weak leadership.¹⁵²

Conclusion: The Sinicization of China's Medical Colleges

In terms of the overall picture, Nationalist China ended 1945 with thirty-five civilian medical colleges containing around 5,300 students and 975 teachers. Another seven medical colleges were in process of being reclaimed from former Japanese-occupied territory in northeast China.¹⁵³ At that time several of the colleges were in a state of near paralysis, short of funds and hoping desperately to return to their former locations. In a letter to ABMAC's president, the noted biochemist Dr. Donald D. Van Slyke, Dr. Liu Ruiheng reported that the Nationalist government, itself strapped for funds, could do little more than support a half dozen of the best national medical colleges. The Ministry of Education was afraid to announce this.¹⁵⁴ And yet rehabilitation of old and establishment of new colleges during the immediate postwar years brought these totals up by May 1947 to forty-two colleges with upwards of nine thousand students.¹⁵⁵ Around forty-eight hundred of these students were enrolled in twenty-one national medical colleges, and another nineteen hundred were in provincial colleges and vocational schools. The remainder were distributed among thirteen private and missionary schools, predominantly in the former.

As these figures indicate, the war had served to bring about a decisive shift in Chinese medical education from Western- and missionary-dominated institutions to national and provincial establishments led by Chinese administrators. This shift was not immediately apparent since agencies such as the CMB and ABMAC continued to play an active although financially reduced role in the postwar reconstruction of medical education, as did UNRRA and CNRRA, which had the specific task of supporting national reconstruction. But once plans got under way to reopen the PUMC in Beiping, the CMB terminated its wartime grants to six national and two missionary medical colleges in order to concentrate its funds on its primary beneficiary.¹⁵⁶

Consequently, except for the CMB's continuing influence over the PUMC (reopened in 1947), foreign agencies no longer had any substantial impact on the direction and evolution of Chinese medical education, which henceforth lay in Chinese hands. Thus well before the Communist armies swept the Nationalist forces out of China in 1949, driving Western agencies out along with them, modern biomedical education had already firmly rooted itself in China and was largely free of dependence on foreign leadership or support.

Another important development lay in the introduction of the predominantly coastal prewar medical establishment to the health conditions and needs of China's vast interior provinces. State Medicine, which might have seemed a distant goal in the fashionable prewar establishments of Shanghai and Beiping, became a much more immediate challenge under the conditions of poverty, disease, and primitive health service experienced in wartime China. Medical students conscripted to serve in China's military and public health services could no longer be unaware of the challenges lying beyond the classrooms and urban clinics.¹⁵⁷ Medical leaders, lacking the resources to promote research and functioning under conditions of extraordinary deprivation, could concentrate only on preserving the basics of modern biomedicine for use in a future of peace and reconstruction. Under conditions so unfavorable to the development of curative facilities, prevention and prophylaxis assumed a relatively more important role in education and practice. Field experience and clinical practice prevailed over scientific research.

A third development of considerable significance for China's medical practice was the growing enrollment of women in medical schools. According to Dr. Zhu Hengbi, the number of women graduates increased from 20 percent before the war to 40 to 50 percent after it.¹⁵⁸ Enrollment figures for medical and pharmacy schools in 1945 suggest average male to female ratios of a little under three to one; nevertheless, the enrollment of two thousand female students in a traditionally dominantly male profession is by any standard significant.¹⁵⁹ Applications also seem to have shot up. In 1947 National Xiangya Medical College reported 2,408 applicants for 76 openings.¹⁶⁰

The wartime and postwar eras in China provide a rich environment for the study of the evolution of modern biomedicine and its impact on national development in a major non-Western civilization. After 1949 and the establishment of the People's Republic of China, the issues of development and modern medicine's contribution to it would be dominated by an assertive political ideology, to which all sectors of national effort would have to conform.¹⁶¹ Before 1949 this was not the case. Despite the conservative and nationalistic ideology of the Guomindang's wartime Ministry of Education, there is little evidence that it exercised a controlling influence over the evolution of modern biomedical education. The prevailing reformist ideology—State Medicine—had little to do with party politics. It was conceived by professional administrators and educators as the only system able to adapt modern biomedicine to the conditions of public health in China and to make it a force in the development of the country. To what extent that happened cannot be determined without access to grassroots data beyond the reach of this research. But at least it can be concluded that various wartime medical educators kept the idea of State Medicine alive and active on the national educational agenda.

This does not mean that the American-inspired research and teaching model, epitomized by the PUMC, did not continue to stand at the forefront of modern biomedical education in China. The rapid postwar return of the refugee medical colleges to their original campuses signaled not merely a nostalgia for familiar cultural and urban habitats but a professional yearning for urban, laboratory-based scientific research and teaching, which the war had disrupted. An intense thirst developed for study at foreign medical centers, and foreign medical professors were eagerly welcomed to China.¹⁶² In the search for scientific renewal both Drs. Li Zongen and Zhang Xiaoqian, who were among the most determined wartime advocates of State Medicine, left their directorships of the Guiyang and Xiangya colleges and returned to the PUMC when circumstances made this possible, with Dr. Li as the PUMC's new director.

But Dr. Li came into that position with reservations about PUMC's reliance on English language instruction and American cultural orientation. The graduates, in his view, had significantly strengthened China's health services technically but less so socially and intellectually. The problem was that the college still somehow suggested "a mere transplantation into China's soil of a first-class medical college from America."¹⁶³ Given the college's reliance on American funding and leadership, this perception of foreignness was inevitable and, in fact, would take years to work through.

Thus the war left unresolved the question of the integration of the clinic- and laboratory-based experimental model of biomedical education with the public health-based State Medicine model. Wartime experience had established the case for State Medicine but not established rewards sufficient to root it permanently in the medical curriculum of Nationalist China.¹⁶⁴ Biomedical education at war's end remained conflicted between the scientific and material satisfactions of curative treatment and the primarily social satisfactions of improving the preponderantly rural public health services. As Dr. Chen Zhiqian had warned, it would require extraordinary statesmanship to resolve this problem.¹⁶⁵

This account is based primarily on materials in the archives of the Rockefeller Foundation, the China Medical Board, and the American Bureau for Medical Aid to (now Advancement in) China. It is supplemented by Chinese and American secondary sources, by an interview, and by journal articles and other sources found in the library of the New York Academy of Medicine. The work of medical training programs developed in areas covered by the Red Armies is the subject of a separate study.

Endnotes

1. The Nationalist Government refers to the government under the control of the Nationalist (or Guomindang) Party, which was in power in China from 1928 to 1949.

2. See, for example, Agnes Smedley, *China Fights Back: An American Woman with the Eighth Route Army* (New York: Vanguard, 1938); and Agnes Smedley, *Battle Hymn of China* (New York: Knopf, 1943). Both books report on the medical services of the Eighth Route and New Fourth Armies. *Battle Hymn* also discusses the work of the Red Cross Medical Relief Corps and of various non-Communist military forces.

3. Abraham Flexner, *Medical Education in the United States and Canada* (New York: Carnegie Foundation for the Advancement of Teaching, 1910).

4. The wartime directors of National Central University and Guiyang and Xiangya Medical Colleges were all former PUMC faculty, as was the first wartime director of the Chinese Red Cross Medical Relief Corps. A former director of the PUMC (Dr. Liu Ruiheng) served for several years as director of the National Health Administration.

5. How this process unfolded at the PUMC after 1949, and especially during the Cultural Revolution, is described in John Z. Bowers, *Western Medicine in a Chinese Palace* (New York: Josiah Macy Jr. Foundation, 1972).

6. Medical education in Communist guerrilla areas will be discussed in my forthcoming study, "Saving Lives in Wartime China."

7. The main secondary sources for this account of Western medical education are Zhu Chao, ed., *Zhong Wai yixue jiaoyu shi* (Shanghai: Shanghai Medical University, 1988), 61-63, 68-72; K. Chimin Wong and Wu Lien-teh *History of Chinese Medicine*, 2nd ed. (Shanghai: National Quarantine Service, 1936). Wu's book is arranged chronologically and contains more basic information about each enterprise than Zhu's for the period under review. Zhu's account is more thematic and critical.

8. Zhu, *Zhong Wai*, 88-89.

9. One of the acts of the Beiyang government had been to incorporate a few regulations on medical education into its educational management system. These regulations basically followed Japanese management procedures. Zhu, Zhong Wai, 87.

10. Fu Weikang, ed., *Zhongguo Yixue shi* (Shanghai: Shanghai Zhongyi Xueyuan, 1990), 494, cites 1915 figures reporting that Anglo-American missionary enterprises included twenty-three medical schools and thirty-six nursing schools.

11. China Medical Commission, *Medicine in China* (New York: Rockefeller Foundation, 1914); "Recommendations of the China Medical Commission of the Rockefeller Foundation: Editorial Notes," *National Medical Journal of China* 1, no. 1 (1915): 16-22. The members of the Commission were Harry Pratt Judson, president of the University of Chicago; Francis Weld Peabody, MD, a prominent medical science reformer from Harvard University and the Peter Brent Brigham Hospital; Roger Sherman Greene, at that time U.S. consul general in Hankou; and George Baldwin McKibbin, secretary to the Commission.

12. For example, between 1922 and 1928 the Army Medical College, then in Beijing, had seven different directors, none of whom stayed for longer than a year. Because of the general political turbulence, the college was unable to make any progress during this period. Zhang Jian, *Guofang Yixueyuan Yuanshi* (Taipei: Guofang Yixueyuan [National Defense Medical Center], 1984).

13. Wong and Wu, *History*, 786.

14. According to a 1934 report cited by Zhu Chao, fifteen of thirty medical colleges taught in Chinese, two in German, two in French, one in Japanese, and the rest (ten) in English. Missionary schools followed the educational systems of their respective countries of origin, invited foreign instructors, and used foreign language materials. From these distinctions emerged the so-called German-Japanese, Anglo-American, and French-Belgian cliques, which engaged in factional disputes. Zhu, Zhong Wai, 104-105. In the case of the Army Medical College, a divisive conflict took place in the 1930s between German-Japanese and

Anglo-American representatives over control of the college's management and curriculum.

15. League of Nations Health Organization, Proposals of the National Government of the Republic of China for Collaboration with the League of Nations on Health Matters, February 12, 1930. The National Medical Association of China provided Rajchman with the data on hospitals.

16. The report harshly criticizes a second-tier vocational medical school in Shanghai. Despite efforts by the Ministry of Education to close such schools, they continued to flourish in the laissez-faire International Settlement, and their graduates were allowed to practice there on an unregistered basis.

17. Min-ch'ien T. K. Tyau, *Two Years of Nationalist China* (Shanghai: Kelly and Walsh, 1930), 278-79.

18. Knut Faber, *Report on Medical Schools in China* (Geneva: League of Nations Health Organization, 1931).

19. Faber also compared these ratios with one physician per eight hundred people in the United States and ratios in seven European countries ranging from 1/1,250 (Switzerland) to 1/2,860 (Sweden).

20. Brief data on comparative medical school fees are in Zhu, *Zhong Wai*, 100.

21. Wong and Wu, *History*, 790-91; CME annual report for 1936, in Rockefeller Archive [hereafter RA], record group [hereafter RG] 1, series 601, box 3, folder 27 [hereafter given in numerals only].

22. They included the noted physicians Lin Kesheng and Yang Chongrui (Marian Yang) from the PUMC; Song Wusheng (trained in France) and Yu Yan who were active opponents of Chinese medicine (see Wong and Wu, *History*, 162); Zhu Hengbi (Harvard Medical School of China and the PUMC and president, National Shanghai Medical College); Hu Dingan (Berlin-trained dean of studies and later dean, Jiangsu Medical College, founded by Chen Guofu); and Mrs. Henry Chen (nursing education) and Zhu Zhanggeng (the PUMC and Yale, *ex officio*). Though loaded in favor of a PUMC perspective, this selection reflects various pressure groups active in medical politics.

23. It was better known then than now, as the CME report was extensively summarized in the Peiping Chronicle of November 25 and 26, 1936. See RA, China Medical Board (CMB), box 22, folder 155 [numerals only hereafter].

24. This count no longer included colleges in northeast China, which had been expropriated by Japan in 1931.

25. RA, RG1, 601/3/27, CME, 1936 report, appendix F.

26. Zhu, Zhong Wai, 104.

27. CME, 1936 report.

28. Chen's work at Dingxian is discussed in chapter 3 of Chen Zhiqian, *Medicine in Rural China: A Personal Account* (Berkeley: University of California Press, 1989), 57-105.

29. RA, RG1, 601/3/26: C. K. Chu to S. M. Gunn, January 16, 1937.

30. RA, CMB, 95/682, National Chungcheng Medical College.

31. Huang Jiasi, *Zhongguo xiandai yixuejia zhuan* (Changsha: Hunan kexue jishu chubanshe, 1985), 2-15, biography of Yan Fuqing by Dai Tianyou. The account of the founding of the Shanghai Medical College in Zhu, Zhong Wai, 101-102, follows Dai's account very closely. See also Yang Tsui-hua, *Zhong Ji Hui dui Kexue di Zanzhu* (Taipei: Academic Sinica, Institute of Modern History, 1991), 161-64.

32. Wong and Wu, *History*, 629-31; American Bureau for Medical Aid to China (ABMAC) Archive, box 22, National Medical College of Shanghai, Brief History; RA, CMB, 95/677, National Central University, correspondence dated July 1, 1931; Yang, *Zhong Ji Hui*, 1991, 161-64.

33. RA, CMB, 95/679, National Central University 1944, response to CMB questionnaire.

34. Wong and Wu, *History*, 689-91; RA, CMB, 95/682, National Chungshan Medical College, response to CMB questionnaire.

35. RA, CMB, 96/688, National Tungchi Medical College, response to CMB questionnaire; Wong and Wu, *History*, 623, 696-97. A general account of Tungji's development prior to 1937 is in Françoise Kreissler, *L'Action culturelle allemande en Chine: de la fin du*

XIXe siècle à la Seconde Guerre mondiale (Paris: Editions de la Maison des sciences de l'homme, 1989).

36. Wong and Wu, *History*, 547, 627-28, 688; see also Faber, *Report*, and RA, CME, 1936 report. Separate archival information on this college has not been seen.

37. After the war the university was able to open a medical school in October 1947 with a first class of thirty premedical students. See *Chinese Medical Journal* 65, nos. 11-12 (November-December 1947): 443-45.

38. RA, CMB, 22/155, excerpt from Bulletin of China Information Committee, January 30, 1939; RA, RG12, diaries of John B. Grant [hereafter Grant diary], September 20, 1937; *Chinese Medical Directory* (Shanghai: Chinese Medical Association, 1941), entry for C. U. Lee (Li Zongen). Lee was chairman of the Planning Commission for the college and appointed dean designate. He became the first director of the Guiyang college.

39. Zhu, *Zhong Wai*, 103, lists eight: Henan University Medical College, Jilin Medical College, Shandong Medical Vocational College, Yunnan University Medical College, Jiangsu Medical Administration College (as of 1938 Jiangsu Medical College), Guangsi Medical College, Shaansi Medical and Pharmacological Vocational School, and as of 1937 Fujian Medical Vocational School.

40. Zhu, *Zhong Wai*, 104.

41. RA, RG1, 601/3/28, report of July 1936–June 1937.

42. Louis Calame, "La Misere dans Le Nord de la Chine," *Revue Internationale de la Croix-Rouge* 20 (November 1938): 967-1016.

43. RA, RG1, 601/3/26, correspondence of Han Liwu June 4, 1938; J. Heng Liu May 30, 1938, and June 3, 1928; C. K. Chu June 4, 1938, to John B. Grant; *Chinese Medical Directory*, entry for Wang Yuan Tscheng; Zhu, *Zhong Wai*, 101. The reorganization of the CME took place in May 1938.

44. For example, RA, RG1, C. K. Chu letter; Grant diary, April 28 and May 6, 1938; RA, RG1, 601/3/28, CME report, "Medical Education in 1937" (year ending June 1938).

45. RA, RG1, 601/3/26, Grant to S. M. Gunn (Rockefeller Foundation vice president in Shanghai), May 11, 1938, and November 11, 1938; RA, RG1, Liu recommendation to Grant in letter of May 30, 1938; Grant diary, October 15, 1938.

46. RA, RG1, 601/3/28, CME report, "Medical Education in 1937." On reviewing this report, Grant concluded that there had been an almost entire dislocation of the CME's constructive plans. He described as "most regrettable" the loss in Nanjing of much of the results of the CME's editing and publishing activities. Grant diary, October 12, 1938.

47. Data from RA, CMB, 95/682; RA, RG12, M. C. Balfour diary [hereafter Balfour diary], June 2, 1939.

48. RA, CMB, 22/155, H. P. Chu (Zhu Hengbi; acting director, National Shanghai Medical College), "Medical Education—Realignment," Bulletin of China Information Committee, Chungking (January 30, 1939), excerpt. Another source reports that the university buildings were bombarded by the Japanese, but the library and equipment were largely saved. Kreissler, *L'Action culturelle allemande en Chine*.

49. RA, CMB, 96/688, Medical College of National Tungchi University, response to CMB questionnaire by Dean Yuan Shangcheng; ABMAC, box 22, Miscellaneous Medical Colleges. "Pa" disease (or Kiating paralysis) was a form of paralysis of the extremities associated with food poisoning, common in certain districts in Sichuan. Professors Du Gongzhen and Deng Ruilin of Tongji's Department of Public Health were able to isolate barium chloride in table salt as the causative agent. See articles on pa disease in Chinese Medical Journal (Chengdu edition), 61A, no. 3 (April 1943): 107-10.

50. For Jilu see Grant diary, April 18, 1938. All the foreign staff had remained in Jinan.

51. Grant diary, April 17 and 18, 1938.

52. RA, RG1, 601/3/28, CME report on activities, July-December 1938. The optimism was unfortunately premature.

53. Ibid.

54. RA, RG1, 601/3/28; “Medical Education in 1937” (year ending June 1938).

55. RA, CMB, 96/686, National Kweiyang Medical College, document received May 5, 1943.

56. Balfour diary, May 13, 1939; Grant diary, April 5, 1938. Some details of these moves are not entirely clear.

57. Balfour diary, August 7 and September 21, 1939.

58. ABMAC, box 22, National Medical College of Shanghai, brief history and answers to questionnaire, September 10, 1942.

59. RA, RG1, 601/3/28, CME reports, July–December 1938 and July 1938–June 1939.

60. Grant diary, February 17, 1939.

61. RA, RG2, General Correspondence 1928–1940, 182/1314, F. C. Yen to Alan Gregg, Chungking, May 31, 1939.

62. RA, RG1, 601/3/28, CME annual report, July 1938–June 1939. Training of midwives and nursing aides was a “Chinese socioeconomic measure” that owed little if anything to European or American initiatives.

63. RA, RG1, CME report, July 1939–December 1940. When Balfour visited Kunming in June 1939 he described the University’s “so-called” medical school as a “long one-sided building divided into about 6 rooms”; Balfour diary, June 2, 1939.

64. RA, RG1, 601/3/26, King to Balfour, July 30, 1940; Balfour to King, August 17, 1940.

65. RA, RG1, 601/3/26, Balfour to Wang, May 1, 1941.

66. Grant diary, August 1942.

67. For example, RA, CMB, 95/678, National Central University 1942–43, letter of February 28, 1942, from Wong Wen-hao, Y. T. Tsur, and Li Ting-an.

68. RA, RG12, Grant diary, October 16, 1938.

69. Grant discussion with C. W. Chang, dean of Nanjing College of Agriculture, October 17, 1938. Dean Chang mentioned various other problems, including a tremendous mission bureaucracy, an attitude of foreign superiority, and subordination of teaching to evangelism.

70. Grant diary, October 25-27, 1938.

71. Hensman, Bertha, "The Kilborn Family: A Record of a Canadian Family's Service to Medical Work and Education in China and Hong Kong," *Canadian Medical Association Journal* 97 (August 26, 1967): 471-83. After leaving Chengdu in 1950, Dr. Kilborn became chair of physiology and later dean of the Faculty of Medicine at the University of Hong Kong. After retiring from the deanship, he served briefly as vice president of Hong Kong's Chung Chi College.

72. Grant diary, February 15, 1939.

73. RA, CMB, 95/678, report of work, July 1 and December 31, 1941.

74. Grant diary, October 25-27, 1938.

75. RA, RG1, 601/3/33, Brian R. Dyer, "Visit to China, 4/12-5/26, 1943."

76. RA, CMB, 143/1038, Forkner to CMB, July 3, 1943.

77. RA, RG5, 600-601/218, A Review of Government Health Service in Szechuan, China, for the period of 1939-1945.

78. RA, RG1, 601/18/161, C. C. Chen to M. C. Balfour, July 1, 1941.

79. RA, RG1, 601/18/162, report of public health training in Chengtu, by C. C. Chen, June 1944.

80. RA, RG5, 3/218, report of Szechuan Provincial Health Administration for 1941.

81. ABMAC, box 3, Bachman 1942 folder, report of the Szechuan Provincial Health Administration for the year 1942.

82. RA, RG5, 3/218, report, 1943.

83. RA, RG1, 601/18/162, report, 1944.

84. Ibid.

85. Ibid.

86. RA, CMB, 143/1038, cables dated April 18 and 28, 1942.

87. Ibid., Wong Wen-hao to E. C. Lobenstine, September 9, 1942.

88. Ibid., Balfour to Lobenstine, January 30, 1943.

89. Ibid., Wong to Lobenstine, March 31, 1943.

90. Ibid., Forkner to Lobenstine and Agnes M. Pearce, July 3, 1943; RA, CMB, 22/156, Forkner to Minister of Education Chen Li-fu, July 12, 1943.

91. RA, CMB, 22/156, Forkner to Chen, July 12, 1943; CMB, 143/1038, Forkner to Lobenstine, received July 15, 1943. Remarks to Lobenstine by Dr. Cai Qiao, head of National Central University's Department of Physiology and Pharmacology, imply that these restrictions were imposed by the government. See CMB, 95/678, September 15, 1943.

92. RA, CMB 143/1038, Forkner to Lobenstine and Pearce, July 11, 1943; CMB 95/678, Forkner to Lobenstine, November 13, 1943.

93. RA, CMB, 95/678, S. N. Cheer to Roger Greene, July 13, 1943.

94. RA, CMB, 95/678, Lobenstine interview with Chiao Tsi (Cai Qiao), September 15, 1943.

95. RA, CMB, 143/1038, Balfour to Forkner, July 29, 1943; Forkner to Balfour, August 10, 1943.

96. Ibid., Forkner to Lobenstine and Pearce, July 11, 1943.

97. RA, CMB, 95/680, undated annual report; the attached hospital report is dated July 1943–July 1944; the 1943 report is in ABMAC, box 18, National Central University College of Medicine.

98. RA, CMB, 95/679, annual departmental report, 1943 academic year.

99. RA, CMB, 95/680, first semi-annual report of Department of Public Health, July–December 1944.

100. Ibid., Department of Physiology and Pharmacology. An appreciation and bibliography of Dr. Cai's work appears in Huang, *Zhongguo xiandai*, 67-86.

101. Ibid., Department of Anatomy semi-annual report.

102. Ibid., Department of Biochemistry report, July 1943–June 1944, and July–December 1944.

103. Ibid., report of research activities of the Department of Public Health, July 1944–June 1945.

104. RA, CMB, 95/681, CMB document dated March 26, 1946.

105. ABMAC, box 18, National Central University College of Medicine, report on ABMAC grant, 1943-1944.

106. For example, ABMAC, box 18, National Central University College of Medicine 1944-1945 and July-December 1945. This report contains thirty-six tables of detailed information drawn from hospital inpatient records.

107. Wong and Wu, *History*, 629-31.

108. Huang, *Zhongguo xiandai*, 2-15. Yan's reports on his studies of hookworm infection are in *National Medical Journal of China* 4, nos. 3 and 4 (1918) 81-87, 140-45; and 5, no. 1 (1919) 57ff.

109. Edward H. Hume, *Doctors East, Doctors West* (New York: Norton, 1946).

110. Jonathan Spence, *To Change China: Western Advisors in China, 1620-1960* (Boston: Little Brown, 1969), 161-83.

111. ABMAC, box 21, National Hsiangya Medical College, document dated March 1, 1941.

112. *Ibid.*, "The Hsiang-ya Hospital," by Dr. T. Y. Hsiao, January 1946.

113. *Ibid.*, document dated March 1, 1941.

114. *Ibid.*; also RA, CMB, 96/683, National Hsiangya Medical College; ABMAC, answer to questionnaire, September 1, 1942, by Hsiao-ch'ien Chang, director.

115. ABMAC, box 21, National Hsiangya Medical College, document dated March 1, 1941.

116. *Ibid.*

117. Balfour diary, May 25, 1939. He called the spirit of cooperation between the two medical colleges and an NHA training institute "noteworthy."

118. *Ibid.*, May 25, 1939.

119. Grant diary, February 14 and 20, 1939.

120. RA, RG1, 601/3/28, CME report, July 1939-December 1940.

121. For example, the college's disbursements in fiscal 1944 were ¥5,429,552.99. Government funds provided ¥4,022,821.47 and donations and grants ¥1,073,506.55, of which a little over half came from ABMAC. RA, CMB, 96/683, 1943-1944 report.

122. RA, CMB, 96/683, Chang Hsiao-ch'ien to Forkner, March 21, 1944.

123. Ibid.

124. RA, CMB, 96/683, 1943-1944 report.

125. RA, CMB, 96/683, 1943-1944 and 1944-1945 reports. Remarks on Dr. Zhang's leadership are from interview with Dr. Charlotte Tan, May 30, 1989. See also his biography in Huang, *Zhongguo xiandai*, 87-112.

126. ABMAC, box 21, March 1941 report.

127. RA, CMB, 96/683, 1944 report. Data on fluoroscopic results from Dr. Charlotte Tan. Given the difficulties in maintaining expensive diagnostic equipment, reports of disease incidence have to be interpreted with care, as indicated by the following responses to a CMB questionnaire giving data on incidence of tuberculosis among students:

College	Percent	CMB source (Box/folder)
North Central UMC	17.3	95/679
North Zhongshan MC	5 known	682
North Guiyang MC	3 active	96/686
North Jiangsu MC	2	96/685
North Lanzhou MC	0.5	687
North Sch of Pharmacy	0.7 confirmed	687
North Tongji MC	unknown	688
West China UUMC	6-7	158/1154

128. ABMAC, box 21, reports of March and September 1941. Dr. Tan reported that because of lack of funds, she had to donate blood to pay for her food.

129. ABMAC, 1941 reports.

130. ABMAC, box 2, Army Medical Administration, R. K. S. Lim (Lin Kesheng), report #8, December 22, 1944; ABMAC, box 21, National Hsiangya Medical College, W. Winston Pettis to Arthur Rider, January 21, 1945.

131. RA, CMB, 96/683, 1945 report. The Friends Ambulance Unit assisted in moving both the Xiangya and Guiyang colleges. External grants covered approximately 50 percent of the expenses; the rest came from the Ministry of Education and from rentals and sales in Guiyang.

132. ABMAC, box 21, National Hsiangya Medical College, Pettis to Dr. John Scudder, January 16, 1945.

133. RA, CMB, 1945 report.

134. RA, CMB 22/156, October 6, 1943.

135. RA, CMB, 22/151, T. Y. Tai to Drs. Donald D. Van Slyke and Jean A. Curran, July 4 and 18, 1944.

136. Ibid., C. K. Chu to J. Heng Liu, March 29, 1944.

137. Ibid., T. Y. Tai to J. A. Curran, April 16 and July 18, 1944.

138. Ibid., minutes of meeting, March 28, 1945.

139. H. P. Chu, "Medical Education During the Anti-Aggression War," *Chinese Medical Journal*, 64 (January-February 1946): 17-23.

140. ABMAC Box 42, Medical Education—General: "Notes on the Teaching of Medicine and the Organization of Hospital Services in China," by L[eo] E[loesser], Specialist (Surgery), UNRRA.

141. RA, CMB, 22/151, Forkner report, 1944-1945.

142. ABMAC, box 42, Medical Education—General, T. Y. Tai to Curran, April 5, 1946.

143. RA, CMB, 96/687, Forkner report, 1944-1945 (on stability); ABMAC, box 21, CME, report for year ending 1946. See also "CMA Association Activities in Free China," *Chinese Medical Journal* 64 (1946): 300-302.

144. ABMAC, box 22, National Medical Colleges, miscellaneous, National Chung Cheng College.

145. ABMAC, box 41, CME, report for year ending 1946.

146. RA, CMB, 96/686, C. U. Lee to Forkner, March 8, 1945.

147. ABMAC, box 2, Army Medical Administration, Lim report #8, December 22, 1944; RA, CMB, 96/686, report of Department of Chemistry, January-September 1945.

148. Postwar air accidents claimed the lives of the principals of the National Central Nursing School and the National Central School of Midwifery.

149. RA, CMB, 96/686, proposed budget for CMB grant to the Department of Public Health, 1946. Dr. Li had lost many of his staff during the evacuation from Guiyang, but he had made an arrangement

with U.S. Army forces to occupy what was left of the campus while the college regrouped in Chongqing and to restore some of the buildings according to the original plan. These would be turned over to the college after the army had no further need of them. ABMAC, box 2, Lim report #16, May 19, 1945.

150. RA, CMB, 96/683, reports of 1945 and 1947; ABMAC, box 21, National Hsiangya Medical College, "The Hsiangya Hospital, Changsha, China," brief report by Dr. Y. T. Hsiao, superintendent, January 1946.

151. ABMAC, box 16, J. Heng Liu to Helen Kennedy Stevens, August 20, 1947; RA, CMB, 96/687, Ruth Ingram report, June 1, 1946.

152. ABMAC, box 16, Liu to Stevens, July 11 and September 19, 1947.

153. ABMAC, box 42, Medical Education—General, T. Y. Tai to Dr. Jean A. Curran, Appendix: Present Status of Medical and Pharmacy Schools in China (end 1945). The numbers do not include pharmacy students and teachers of pharmacy colleges.

154. ABMAC, box 15, J. Heng Liu to Donald D. Van Slyke, May 29, 1946.

155. ABMAC, box 16, Liu to Stevens, July 1, 1947; ABMAC, box 42, Medical Education—General. Another five in the northeast were still "awaiting takeover" by the central (Nationalist) government because of the intensifying civil war.

156. RA, CMB, 95/681, document dated March 26, 1946.

157. Zhu Hengbi made this point in his article on medical education in Chinese Medical Journal 64 (January-February 1946): 17-23.

158. *Ibid.*

159. The 1945 table of medical education data in ABMAC, box 42, Medical Education—General, gives college-by-college figures for enrollment of women students.

160. ABMAC, box 16, J. Heng Liu to Emma DeLong Mills (executive director of ABMAC), February 9, 1948.

161. For example, in 1951 the new president of the Chinese Medical Association, Dr. Fu Lianzhang, reminded Association members to intensify political study and to begin by studying Mao's essay "On

Practice.” He reported that members were participating actively in land reform and suppression of reactionaries, as well as in the movement to Resist America and Aid Korea. “Association News,” *Chinese Medical Journal* 69 (September-October 1951): 447-54.

162. Cf. John R. Watt, “J. Heng Liu and ABMAC,” in Liu Siqin, ed., *Liu Ruiheng Boshi yu Zhongguo Yiyao ji Weisheng Shiye* (Taipei: Commercial Press, 1989), 189-91.

163. RA, CMB, 96/686, National Kweiyang Medical College, C. U. Lee to E. C. Lobenstine, 6/14/1944.

164. Dr. Liu Ruiheng criticized the medical colleges for failing to train some of their best students in every class to go into public health. At present, he complained, there was not one school that gave anything like an adequate course on the subject. ABMAC, box 16, J. Heng Liu to ABMAC President Magnus I. Gregersen, December 31, 1947.

165. Dr. Zhu Hengbi’s assumption that once they had seen the needs of rural people, doctors in embryo “worth their salt” would go to work in rural districts, seems disingenuous. *Chinese Medical Journal* 64 (January-February 1946): 17-23.



Dr. J. Heng Liu, Director of the National Health Administration in the 1930s and former Director of the Peking Union Medical College. Dr. Liu was a graduate of Harvard College and the Harvard Medical School.



Dr. Frank Co Tui, co-founder and wartime Vice President of ABMAC, and a professor at New York University Medical School.



Dr. Liu at ABMAC office in New York, with Dr. B. A. Garside, at that time Vice President of United China Relief, and Ms. Helen Kennedy Stevens, Executive Director of ABMAC.



Students of National Xiangya Medical College.



Mme. Chiang Kai-shek with war orphans. Mme Chiang took a close interest in military and civilian relief and served as health policy advisor to her husband.



Wartime health policy task force meeting in Chungking. Front row, from left: Drs. Sa Bentong, Lin Kesheng, Han Liwu, Jin Baoshan (Director, National Health Administration), Liu Ruiheng. Dr. Berislav Borcic, League of Nations medical consultant, standing rear left.



Drs. Lin Kesheng and Donald D. Van Slyke. Dr. Lin, Professor of Physiology at the Peking Union Medical College, was Director until August 1942 of the Chinese Red Cross Medical Relief Corps. Dr. Van Slyke, President of the American Bureau for Medical Aid to China (ABMAC), was the leading American biochemist of his day.



NDMC evacuating to Taiwan.



Dr. Zhang Xiaoqian. Wartime President of National Xiangya Medical College, he was noted for his strong interest in student health and his dedication to the college's mission of service to the people of Hunan.



Dr. Yan Fuqing, former President of National Xiangya Medical College and a Director of the National Health Administration. With a PhD in public health from Yale, Dr. Yan became a public health pioneer in China and carried out significant research on hookworm infestation among miners.



Burma Road convoy, c. 1940. Construction of the Burma Road was one of the most arduous public works projects carried out by the Nationalist government during the wartime era.



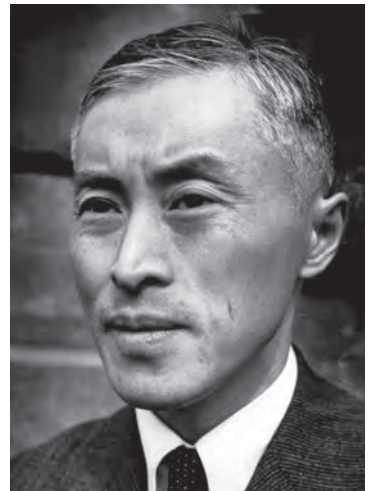
Dr. George Armstrong, US Army Surgeon General, China theater; later US Army Surgeon General, Vice President of New York University, and President of ABMAC. He worked closely with Dr. Lin Kesheng during 1944-45.



Yang Wen-tah in a Nationalist uniform talks with Dr. J. Heng Liu.



Kunming supplies. Kunming was the main supply depot at the end of the trans-Burma airlift.



Chen Lifu, wartime Minister of Education. Mr. Chen was a vigorous advocate of Chinese medicine and more than once lectured visiting Americans on its benefits.



Delousing station. The Chinese Red Cross Medical Relief Corps started a delousing, bathing, and scabies program in September 1938, setting up seven stations at army medical hospitals. These vats were mostly improvised from whatever materials were available.



Dr. O. K. Khaw (Xu Yujie), with Dr. Richard N. Pierson. Born in Malaya and at one time Professor of Public Health and Parasitology at the Peking Union Medical College, Dr. Khaw later joined the faculty of the National Defense Medical Center. He survived ten days alone and barefooted in the Burmese jungle.



Ms. Chow Mei-yu, Graduate of the PUMC School of Nursing and founder of Army Nursing School in Guiyang, 1943.



Dr. Zhu Hengbi, pioneering pharmacologist and wartime President of National Shanghai Medical College.

Reference Map of China



English	Pinyin	Chinese Characters
Paoting	Baoding	保定
Peking	Beijing	北京
Peking Union Medical College	Beijing Xiehe yixueyuan	北京協和醫學院
Peiping	Beiping	北平
Beiyang Government	Beiyang zhengfu	北洋政府
	Cai Qiao	蔡翹
Changsha	Changsha	長沙
	Chen Guofu	陳果夫
	Chen Lifu	陳立夫
C. C. Chen	Chen Zhiqian	陳志潛
Chengtu	Chengdu	成都
Chiang Kai-shek	Jiang Jieshi	蔣介石
Chungking	Chongqing	重慶
Chungchi College	Chongji xueyuan	崇基學院
Chow Mei-yu	Zhou Meiyu	周美玉
T. Y. Tai	Dai Tianyou	戴天右
Ting-hsien	Dingxian	定縣
	Du Gongzhen	杜公振
Nelson Fu	Fu Lianzhang	傅連璋
	Fu Weikang	傅維康
Fukien	Fujian	福建
Kansu	Gansu	甘肅
Kanchow	Ganzhou	贛州
Kaochiao	Gaoqiao	高橋
Public Health Personnel Training Institute	Gonggong weisheng rennyuan xunliansuo	公共衛生人員訓練所
State Medicine	Gongyi zhidu	公醫制度
Kuangtung	Guangdong	廣東
Canton	Guangzhou	廣州
Kueiyang	Guiyang	貴陽
Kueichow	Guizhou	貴州
League of Nations	Guoji lianmeng	國際聯盟
National Shanghai Medical College	Guoli Shanghai yixueyuan	國立上海醫學院
Manchurian Medical College * postwar name in Nationalist China	Guoli Shenyang yixueyuan*	國立瀋陽醫學院

English	Pinyin	Chinese Characters
National Tongji University Medical College	Guoli Tongji daxue yixueyuan	國立同濟大學醫學院
National College of Pharmacy	Guoli Yaoxue zhuanke xuexiao	國立藥學專科學校
National Central University Medical College	Guoli Zhongyang daxue yixueyuan	國立中央大學醫學院
National Central Nursing School	Guoli Zhongyang hushi xuexiao	國立中央護士學校
National Xiangya Medical College	Guoli Xiangya yixueyuan	国立湘雅医学院
National Zhongshan University	Guoli Zhongshan daxue	國立中山大學
National Zhongzheng Medical College	Guoli Zhongzheng yixueyuan	國立中正醫學院
Nationalist Party	Guomindang	國民黨
Han Liwu	Hang Liwu	杭立武
Hangchow	Hangzhou	杭州
Hankow	Hankou	漢口
	He Long	賀龍
Hopei	Hebei	河北
	Hu Dingan	胡定安
	Huang Jiasi	黃家駟
West China Union University Medical College	Huaxi xiehe daxue yixueyuan	華西協和大學醫學院
Hunan	Hunan	湖南
Kiangsu	Jiangsu	江蘇
Jiangsu Special Medical College	Jiangsu zhuanke yixueyuan	江蘇專科醫學院
Kiangsi	Jiangxi	江西
Education for national salvation	Jiaoyu jiuguo	教育救國
Ministry of Education	Jiaoyubu	教育部
P. Z. King	Jin Baoshan	金寶善
Tsinan	Jinan	濟南
	Jinhua	金華
Army Medical Administration	Junshi weiyuanhui junyishu	軍事委員會軍醫署
Kunming	Kunming	昆明
Lanchow	Lanzhou	蘭州

English	Pinyin	Chinese Characters
	Li Tingan	李廷安
C. U. Lee	Li Zongen	李宗恩
Robert K. S. Lim	Lin Kesheng	林可勝
J. Heng Liu	Liu Ruiheng	劉瑞恒
	Luo Jialun	羅家倫
Mao Tse-tung	Mao Zedong	毛澤東
South Manchuria Railway	Nan Manzhou Tiedao	南滿洲鐵道
Nanchang	Nanchang	南昌
Nanking	Nanjing	南京
Ministry of the Interior	Neiwubu	內務部
	Nie Rongzhen	聶榮臻
	Peng Pai	彭湃
S. N. Cheer	Qi Shouan	戚壽南
Cheloo Medical College	Qilu Yixueyuan	齊魯醫學院
	Ruan Shangcheng	阮尚丞
Shanghai	Shanghai	上海
Shantung	Shandong	山東
St. John's University Medical College	Sheng Yeuhan daxue yixueyuan	聖約翰大學醫學院
Shenyang	Shenyang	瀋陽
Szechuan	Sichuan	四川
	Song Wusheng	宋悟生
Suchow	Suzhou	蘇州
	Taihe	泰和
	Tengchong	騰冲
Tientsin	Tianjin	天津
	Tuyun'guan	圖雲關
	Wang Jingwei	汪精衛
Y. C. Wang	Wang Yuanchen	汪元臣
Ministry of Health	Weishengbu	衛生部
National Health Administration	Weishengshu	衛生署
Wong Wen-hao	Weng Wenhao	翁文灝
Wuhan	Wuhan	武漢

English	Pinyin	Chinese Characters
	Xiangya	湘雅
Y. T. Hsiao	Xiao Yuanding	肖元定
Xinhai Revolution	Xinhai Geming	辛亥革命
F. C. Yen	Yan Fuqing	顏福慶
O.K. Khaw	Xu Yujie	許雨階
Marian Yang	Yang Chongrui	楊崇瑞
Yangtze	Yangzijiang	揚子江
	Yang Cuihua	楊翠華
	Yang Wenda	楊文達
	Yibin	宜賓
Commission on Medical Education	Yixue jiaoyu weiyuanhui	醫學教育委員會
	Yongxin	永新
	Yu Yan	俞炎
	Yuanling	沅陵
Yunan	Yunnan	雲南
	Zhang Jian	張建
H. C. Chang	Zhang Xiaoqian	張孝騫
Chekiang	Zhejiang	浙江
	Zhenning	鎮寧
Chinese Medicine	Zhong Yi	中醫
Chinese Red Cross Medical Relief Corps	Zhongguo Hongshizihui jiuhui zongduibu	中國紅十字會救護總隊部
Chinese Medical Association	Zhonghua Yixuehui	中華醫學會
National Medical Association of China	Zhonghua Yixuehui	中華醫學會
National Central Midwifery School	Zhongyang Zhuchan xuexiao	中央助產學校
Y. T. Tsur	Zhou Yichun	周詒春
	Zhu Chao	朱潮
Chu Teh	Zhu De	朱德
H. P. Chu	Zhu Hengbi	朱恆璧
	Zhu Jiahua	朱家驊
C. K. Chu	Zhu Zhanggeng	朱章賡
Tsunyi	Zunyi	遵義

