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Rockefeller Foundation's Global Health and China's Modern Health Development

Saúde Global da Fundação Rockefeller e Desenvolvimento da Saúde Moderna da China

Salud Global de la Fundación Rockefeller y Desarrollo de la Salud Moderna de China

Liping Bu*

Abstract: The Rockefeller Foundation (RF) was the first private organization to have systematically envisioned and practiced public health as a world system. The RF exerted extensive influence in disseminating medical science, public health practice and policies in the world. It set up similar public health institutions in many countries by working with national and colonial governments, empires of Europe and the United States, and the League of Nations Health Organization. This article focuses on the RF's role in the development of modern health in China. It situates the discussion in the larger context of RF's involvement in Asia. The RF made significant achievements in China primarily through the mechanisms of the International Health Board, the China Medical Board, and the extraordinary capabilities of John B. Grant. Drawing on archival data and recent research, this article examines the interactive work between RF officials, Chinese health professionals, and the Chinese government in standardizing medical science education and the training of health professionals by means of establishing Peking Union Medical College and the health demonstration stations. It shows how these programs and institutions ultimately helped shape up the creation of a national health system in China. This study sheds light on the long-term legacy of the RF in China and the implications of state medicine and medical efficiency for current global public health.¹

Keywords: China. Health stations. Health System. Public health. PUMC. Rockefeller Foundation.

Resumo: A Fundação Rockefeller (FR) foi a primeira organização privada a ter sistematicamente previsto e praticado a saúde pública como um sistema mundial. A FR exerceu ampla influência na divulgação da ciência médica, práticas e políticas de saúde pública em todo o mundo. Estabeleceu instituições de saúde pública semelhantes em muitos países, trabalhando com governos nacionais e coloniais, impérios da Europa e dos Estados Unidos e a Organização de Saúde da Liga das Nações. Este artigo enfoca o papel da FR no desenvolvimento da saúde moderna na China. Situa a discussão no contexto mais amplo do envolvimento da FR na Ásia. A FR obteve conquistas significativas na China, principalmente por meio dos mecanismos do International Health Board e das capacidades extraordinárias de John B. Grant. Com base em dados de arquivo e pesquisas recentes, este artigo examina o trabalho interativo entre

funcionários da FR, profissionais de saúde chineses e governo chinês na padronização do Ensino de ciências médicas e do treinamento de profissionais de saúde por meio do Peking Union Medical College e das estações de demonstração de saúde. Mostra como esses programas e instituições, em última análise, ajudaram a moldar a criação de um sistema nacional de saúde na China. Este estudo lança luz sobre o legado de longo prazo da FR na China e as implicações da medicina estatal e da eficiência médica para a saúde pública global atual.

Palavras-chave: China. Estações de saúde. Sistema de Saúde. PUMC. Fundação Rockefeller.

Resumen: La Fundación Rockefeller (FR) fue la primera organización privada en haber imaginado y practicado sistemáticamente la salud pública como un sistema mundial. La FR ha tenido una gran influencia en la difusión de la ciencia médica, las prácticas y las políticas de salud pública en todo el mundo. Estableció instituciones de salud pública similares en muchos países, trabajando con gobiernos nacionales y coloniales, imperios Europeos y estadounidenses y la Organización de la Salud de la Liga de Naciones. Este artículo se centra en el papel de la FR en el desarrollo de la salud moderna en China. Sitúa la discusión en el contexto más Amplio de la participación de la FR en Asia. FR ha logrado importantes logros en China, principalmente a través de los mecanismos de la Junta Internacional de Salud y las extraordinarias capacidades de John B. Grant. Basado en datos de archivo e investigaciones recientes, este artículo examina el trabajo interactivo entre los funcionarios de la FR, los profesionales de la salud chinos y el gobierno chino en la estandarización de la enseñanza de las ciencias médicas y la formación de los profesionales de la salud a través del Peking Union Medical College y de las estaciones de demostración de salud. Muestra cómo estos programas e instituciones ayudaron en última instancia a dar forma a la creación de un sistema nacional de atención médica en China. Este estudio arroja luz sobre el legado a largo plazo de la FR en China y las implicaciones de la medicina estatal y la eficiencia médica para la salud pública mundial actual.

Palabras clave: China. Estaciones de salud. Sistema de salud. PUMC. Fundación Rockefeller.

Introduction: Initial Programs in Asia

The Rockefeller Foundation was the first global force to have envisioned and practiced systematically a world system of public health in the first half of the 20th century. It worked with governments (local, national or colonial), non-governmental organizations (social, philanthropic, missionary and professional), empires of Europe and the United States, and the League of Nations Health Organization (LNHO) in developing a global public health system. In the process, the RF exerted extensive influence in the realms of medical science, public health professionalization, public health practices and policies in many countries. The RF gained the global dominance through programs established by the International Health Board (IHB). The IHB was initially created as the International Health Commission (IHC) on June 27, 1913, with the “promotion of public sanitation and the spread of knowledge of scientific medicine” as its mission.ⁱⁱ The IHC became the International Health Board in 1916 and the International Health Division (IHD) in 1927. The International Health Board worked with local governments to build medical schools and health demonstration stations to introduce modern medical science, sanitation, hygiene, and disease-prevention around the world. It originally planned to operate

“in Latin America, the Orient, and the empires of Britain, France, and the Netherlands,” but by the time it was closed in 1951, the International Health Division had run health programs in over 80 countries on every continent. John Farley pointed out that the working patterns of the IHD seemed to be repeated everywhere: first it would undertake a survey and make recommendations; then it would establish schools of hygiene to train key personnel; and finally it would finance the development of a public health service by the means of demonstration health units.ⁱⁱⁱ The RF’s strategy in creating a global health system was purported to use its pioneering programs in each country to stimulate changes in government policies and programs in regard to public health.

The RF’s activities in Asia followed the pattern that Farley had described, but not always in the same order with the same concentration of interests. For instance, it conducted investigation of medical and health conditions, built medical schools and public health institutes, and developed pilot programs of health stations to control epidemic diseases in different Asian countries, but it also became deeply involved in the creation of a national health system in China. The RF’s efforts significantly influenced local practice of sanitation and disease control that was informed by the new knowledge of preventive medicine, such as bacteriology and hygiene. Studies of different Asian countries indicate that the RF’s operation of health stations set up a model that was later re-tooled to meet local needs by different sovereign governments.

The Rockefeller health enterprise first arrived in Asia in the 1910s, with the China Medical Commission conducting a survey of medical conditions in China in 1914 and the International Health Commission investigating the possibility of launching hookworm campaigns in the British colonies of India and Ceylon (Sri Lanka) in 1915. The China Medical Commission’s survey led to the RF’s deep involvement in China in the following decades, starting with the formation of the China Medical Board to oversee its endeavors in China (CHINA MEDICAL COMMISSION, 1914). In Sri Lanka, the British planters used tens of thousands of coolies from southern India and kept them in terrible living and working conditions. The coolies lived in poorly constructed small huts, where the surrounding grounds were covered with trash and filth. Hookworm disease thrived among the laborers on plantations with over 90 percent of them infected with the disease (HEWA, 1995, p. 39). The RF’s anti-hookworm program started on the plantations with reluctant cooperation of the British colonial government and open resistance of the British planters. The British colonists viewed the Rockefeller presence as interference with their governance and incursion into their medical authority. After six years of treatment, the program failed to reduce hookworm among the

laborers on the plantations. The IHB field officers drew lessons and changed their strategy in health work. They began to build health units in villages and towns in the 1920s to tackle public health problems through seeking collaboration with local people, community leaders and the colonial government. A key strategy of the health unit program was to identify the most common health problems in each health unit area and control them through improving sanitation, health education, immunization and treatment with the help of local communities (HEWA, 2011). The health unit system or the health station system, which was first used by the RF in the US south in the 1910s, became an effective model that was introduced to other countries to promote public health and disease control.

In the 1920s, the Rockefeller Foundation established rural health programs in the Dutch East Indies (Indonesia) by building health demonstration stations. The Dutch colonists, like their British counterparts, viewed the Rockefeller presence as a challenge to their authority and rarely collaborated. The Dutch colonists also excluded Javanese medical professionals from medical practice through discriminative examination systems. The Dutch medical exclusion of the Javanese turned out an opportunity for the RF field officers to recruit the Javanese to work at the IHD-funded health demonstration stations. The young Javanese medical workers educated rural people about health and hygienic practices for disease prevention. Some of them served as health managers and operatives. These experiences helped them become pioneers of Indonesian health leaders who later played important roles in Indonesia's independent movement from the Dutch colonial rule and the building of a national health system (POLLS, 2018). The Rockefeller rural health programs, as Eric Stein argues, resonated with the anti-colonial nationalist call for public education of health in order to achieve the goal of "healthy people, strong nation" (STEIN, 2012).

The RF began to extend influence into Japan in the 1920s after it had established the Peking Union Medical College in China as the outpost of modern medical science in Asia. Different from many other Asian countries, Japan had followed the German model of bacteriological research as the foundation of public health and disease prevention during its modernization of medicine and public health after Meiji Restoration. When the RF wanted to break into Japan's established health system to assert American influence, it encountered the resistance of an established system that had already been operating in Japan. The RF was able to make initial moves into Japan's health system by offering fellowships to Japanese medical and health scholars for advanced training in public health at prominent American universities such as the Johns Hopkins. The RF viewed Japan's public health practice as good in laboratory research but poor in application to the society. American training was purported to help Japan

tackle its deficiencies. The RF, using its influential prestige in world health affairs, negotiated with the Japanese government for the approval of building health institutions. Ultimately, two health demonstration stations – one in urban Tokyo and the other in a rural area outside Tokyo – and the Institute of Public Health were built in Japan in the 1930s. Those institutions promoted American-style health research and practice but had limited impact on Japanese health system before World War II. They continued with a new power of influence to shape up Japan in American image after the war when Japan was defeated and occupied by the United States.

Influence on China's Medical Education and Public Health

The RF had the most extensive reach in shaping China's modern medical education and public health, compared to its work in other countries. It created the China Medical Board to oversee its enterprise in China, particularly the operation of Peking Union Medical College. In the training of health profession and building health institutions, the RF exerted more profound influence than any other external organizations in China. The following sections will discuss several aspects of RF's work and analyze their roles in China's modernization of health profession and the creation of a national health system. They include the building of Peking Union Medical College, the campaign for the study of medical science, the building of urban and rural health stations, and the creation of a national health administration with state medicine as the framework. The extraordinary influence of the RF in China happened in the larger global context of interwar years when private philanthropies became more active in international affairs and when state took health responsibilities as an important part of government function. The specific programs and broad engagement of the RF showed its prestige and influential power in standardizing medical knowledge production, training professional expertise, directing public health practice, and setting up modes of health administration in the 1920s-1940s.

Studies of the RF's enterprise in China have previously concentrated on the high-profile Peking Union Medical College, with less attention to its broader influence in China's health profession, health programs and policies, and national health system. Recent research on the RF has extended into those areas in addition to RF's involvement in rural reconstruction, and the unique role of John B. Grant in all of these (BU, 2012b, 2014). As the following discussion shows, the RF's various initiatives and programs were inter-related blocks that worked ultimately towards the creation of a national health system in China.

Peking Union Medical College

The RF's first major accomplishment in China was the building of Peking Union Medical College (PUMC) with rigorous standards of medical science education. It was a world-class medical institution modeled after the Johns Hopkins University School of Medicine. The RF made the PUMC an American "outpost of modern medicine in the Far East" to impress Asian countries with the advancement of the United States.^{iv} It started with a survey of medical conditions including surveys of missionary medical schools in China by the China Medical Commission in 1914. According to the survey, the RF was critical of the poor quality of missionary medical education but considered it useful in spreading Western medicine. To change the situation, the RF decided to create its own medical college in China with the standards on par with American medical schools. It purchased the missionary-run Union Medical School in Beijing with US\$200,000 in 1915 and re-built it into a modern medical college with the state-of-art medical facilities. The China Medical Board (CMB) was established to take charge of the RF's enterprise in China, particularly the building and management of PUMC and "the gradual development of a system of scientific medicine in China" (ADDRESSES AND PAPERS, 1922, p. 4).

William H. Welch and Simon Flexner, the giants in American medicine, sat on the China Medical Board to set the criteria for the new PUMC in regard to faculty, students, and research as well as the language of instruction. Medical curriculum and length of courses were all designed with the best of American medical schools as the prototype. In order to guarantee the quality of students, PUMC created its own pre-medical school to strengthen science courses on physics, chemistry and biology to prepare the students for medical college education. Teaching was changed from Chinese to English language during the transition from missionary to RF-sponsored medical education. Applicants for PUMC must first pass the English proficiency test, which limited the access of PUMC only to those who had prior exposure to Western influence and education, namely, missionary and elite schools. CMB officials justified their decision on English as the language of instruction with the claim that "it is impossible to train students properly in modern medicine through the medium of this tongue [Chinese]" (FERGUSON, 1970, p. 25). Some educators, including missionaries, however, warned William Welch: "Chinese students taught medicine in English are likely to be out of touch with the people and will not advance Chinese medicine".^v The CMB authorities, though fully aware that English language education would produce students out of touch with the Chinese masses, were nonetheless convinced that English instruction was necessary to keep rigorous standards of

medical science. The requirement of English, along with the predominance of Americans on the faculty, defined PUMC's identity as a foreign institution in China, even though the college was housed in buildings of traditional Chinese architecture.

The PUMC began to admit students in 1919. By 1921, the year the college was officially dedicated, the total enrollment of students amounted to only thirteen. Following the standards set up by Welch and Flexner, the college introduced rigorous science studies and research in the fields of anatomy, chemistry, biology, physiology, pathology, bacteriology, surgery, medicine, *material medica*, ophthalmology, gynecology, and obstetrics. PUMC also established a hospital for the purpose of medical teaching and training, following the model of the Rockefeller Institute for Medical Research in the United States.

X-ray, this most advanced scientific instrument of diagnosis in the West at the time, was acquired by PUMC for research and medical practice. A radiology unit was created with Paul C. Hodges in charge. Hodges, who had received his medical training at Washington University and been working with X-ray diagnosis, was a master of radiological instrumentation. He made an "enduring contribution to the introduction of diagnostic radiology to China" (BOWERS, 1972, p. 142-143). He trained Xie Zhiguang (Chih-kuang Hsieh) at PUMC, who became the first Chinese radiologist and headed the radiology department at PUMC from 1928 to 1948. Moreover, Hodges built X-ray machines that were able to operate on various electrical supplies and conditions. These machines were purchased and used by medical doctors, schools and hospitals in different parts of China beyond PUMC, including Hunan-Yale Medical School in Changsha, St. James Hospital in Anqing, Dr. C. Lee in Wuxi, Dr. Thomas in Ningbo, Temple Hill Hospital in Yantai, and Taylor Memorial Hospital in Baoding.^{vi}

The RF and the CMB worked with various organizations in China to promote the study of medical science. The China Medical Board sought the help of the Council on Health Education to encourage students to study Western medicine (BU, 2009a, 2010). In 1923, the China Medical Board made a two-year grant of 27, 000 Mexican dollars (one U.S. dollar was about two Mexican dollars) to the Council's general work and another five-year grant of \$22,500 (Mex.) to support a special campaign among students in middle schools and colleges about Western medicine.^{vii} The CMB expected the Council to popularize Western medicine and to inspire students' interest in the study of medical science. The Council gave lectures on medical science, made medical presentations with follow-up exhibits, interviewed and corresponded with students, and arranged students' visits to local hospitals and medical schools of Western medicine. The Council even changed the topic of its annual national essay contest

from “National Health and National Strength” to “Medicine as a Life Work.”^{viii} Eight scholarships of \$100 (Mex.) each were established to award annually the freshman who won the first place in the entrance examination at eight medical schools (PETER, 1926, p. 229-230).

The China Medical Board, recognizing the importance of standardized Chinese translation of Western medical terms, made financial support for the translation of Western medicine into Chinese. As a field of knowledge, Western medicine had to be translated into Chinese language that would culturally make sense to Chinese people. Different groups such as missionaries and medical professionals had used different terms in their translation since the 19th century. To bring standardization to medical terminology, the National Medical Association of China (NMAC, founded in 1915), organized a Terminology Committee with representatives from the China Medical Missionary Association, the Central Ministry of Education, the Jiangsu Educational Association (a nationally influential organization), and the China Medical Pharmaceutical Society to collaborate on the task.^{ix} They regularly published the standardized Chinese terms of Western medicine with explanation in *The National Medical Journal of China* (the flagship journal of NMAC) for medical practitioners and the general public. The China Medical Board provided financial support to the National Medical Association of China to facilitate the Committee’s work, including commercial publication of standardized terms of Western medicine for broader audiences.^x

Innovative Training of Health Professionals

The RF did not directly engage in hygiene and disease control in China in the beginning, presumably for the following reasons: (1) systematic protection of public health was a government function; (2) confidence in scientific medicine was not sufficiently widespread to insure Chinese people’s cooperation for effective work; (3) the conditions in China to be dealt with, be it biological, social, or economic, were so different from those in the West that it was important to precede by a careful study of local conditions and proper adaptations; and (4) no sufficient numbers of highly trained personnel necessary for public health program was available (ADDRESSES AND PAPERS, p. 4). If these were the reasons for not taking on the preventive medical work in China, the RF certainly did not hesitate to conduct hygiene and disease control in Sri Lanka and Java at that time, where local conditions were not any better than in China. It was apparent that the RF had a different strategy in China. Up till 1920 the China Medical Board made little effort in popular education of preventive medicine and public health matters, even though a variety of local and professional organizations had engaged in these efforts since the early days of the 20th century (BU, 2009b).

By 1921, however, the China Medical Board and the RF seemed to have changed their policy on hygiene and public health in China, due to internal and external pressures. Internally, there were pressing needs for someone to take charge of the hygiene demands on the PUMC campus. Henry S. Houghton, director of PUMC (1921-1928, 1937-1946), and Richard M. Pearce, director of the Division of Medical Education of the RF and acting director of the PUMC in 1920-1921, both made it clear to George Vincent, William H. Welch and Victor Heiser the need of hygiene education at PUMC. Pearce wrote that not only the internal “matters of quarantine, student and staff health and control of sanitation” for the college employees put much burden on the professor of medicine but also the external demand to help with “famine relief, plague in Manchuria, and...preparing for a possible typhus epidemic” in Chinese society compelled the PUMC to take men from the department of medicine to participate in such work.^{xi} Pearce considered the engagement in public health services, though necessary, detrimental to the work of the department of medicine, because it prevented medical professors from doing their own work. As an advanced and best equipped medical institution in China, PUMC could not, however, “escape this responsibility in times of public calamity.... Every foreign institution is expected to do its share in order to help out the weak Chinese administration, and to decline to assist puts us in a bad light and weakens our prestige”. Pearce continued that PUMC was already losing “valuable opportunities to impress upon the community its usefulness in the field of public health” and losing contact with government authorities because PUMC did not have a man to devote his entire time to hygiene work.^{xii} With reports like these, the RF began to re-position itself in the matter of public health.

The RF decided to send John B. Grant to China to take charge of hygiene and public health matters, appointing him as Associate Professor of Public Health at PUMC and the representative of the International Health Division in China. Grant, who was born of missionary parents and grew up in China, had a MD from the University of Michigan and recently graduated from the Johns Hopkins’ Public Health School. He had previously worked with the RF on the hookworm control program at Chinese coal mines in Hunan during 1917-1919. Wearing the two official hats, Grant sailed to China in August 1921 with three major responsibilities: (1) to develop a curriculum of hygiene and preventive medicine for teaching purpose, (2) to establish an intramural “College Health Service” for the PUMC staff, which hopefully was to extend as a model to schools and colleges in China, and (3) most important of all, to “ascertain...the possibility of initiating public health activities in the country, which would be of a permanent and progressive character, aiding the quicker establishment of a

national public health movement.”^{xiii} Grant’s familiarity with Chinese society and culture, and his sensitivity to Chinese social norms, all became enormous assets in opening up unusual venues to work with Chinese officials and medical professionals. Grant would eventually exert profound influence on the public health profession and the creation of a national health administration in China.

Grant made effective use of his vested privileges to chart a public health path in China with his own medical philosophy and vision. Grant believed that public health was an integral part of the socioeconomic development of a society and health care would be most efficiently achieved through integration of preventive and curative medicine in a community health service. A health station located within a community appeared ideal for medical services as well as for surveys and studies of diseases. His view of the efficiency of a combined service of preventive and curative medicine was clearly reflected in his innovative ideas of training public health professionals. In 1923, Grant presented the China Medical Board an 80-page long proposal for the establishment of a Department of Hygiene at PUMC with a health demonstration station.^{xiv} In the proposal, Grant emphasized that “any artificial separation of curative and preventive medicine is detrimental to the efficiency of both” and “medicine of the future” required the “establishment of this combined curative and preventive medicine in a community in...a real ‘health station.’”^{xv} Training of public health professionals, in his view, should be deeply rooted in a community where preventive and curative medicine was integrated in practice. He believed that the future of medicine lay in the general medical practitioner as the nucleus working with hygiene specialists in a community.^{xvi} In the proposal and later in practice, Grant moved away from the “laboratory-based” model of public health education that W. H. Welch (known as the “dean of American medicine”) had created at the Johns Hopkins University. He instead set up a “community-based” model, where students directly engaged in tackling real health problems in a living community.^{xvii} Grant’s new approach of public health education nonetheless retained the rigorous methods of scientific research, a signature feature of “the Johns Hopkins model.”

Grant had made investigations of the health conditions in Beijing and conversed with Chinese medical leaders about the ideas of creating a health demonstration station since he came to China. He regularly corresponded with leading Chinese medical scientists, such as Quan Shaoqing (S. H. Chuan), Huang Zifang (T. F. Huang), Hu Hongji (H. K. Hu), Jin Baoshan (P. Z. King), and Fang Qing (Fang Ch’in), who were strong advocates of public health. Many of them worked at the Central Epidemic Prevention Bureau in Beijing. Grant also made friends

with Chinese officials and local elite through personal connections, professional affiliations, and leadership of medical associations. This social network proved vital in the process of having the health station approved and created by the Beijing municipal government. When Fang Qing was Director of the Central Epidemic Prevention Bureau in 1925, he submitted to the chief of Beijing Metropolitan Police a petition for the establishment of a station to experiment public health measures with cooperation of district police authority. The Metropolitan Police approved the request and directed Fang Qing to take charge of the creation of the health station in the ward of Dengshikou, a vibrant community with a population of approximately 56,000, located next to PUMC and the city center. Several Chinese medical scientists at the Central Epidemic Prevention Bureau were appointed to lead the divisions of the station, namely, Huang Zifang serving as chief of Sanitation Division, Hu Hongji chief of Vital Statistics, Jin Baoshan chief of Medical Services, and Wang Changling chief of Communicable Disease (BU, 2012a, p. 129-143).

The station was named Public Health Experimental Station of the Metropolitan Police Department of Beijing.^{xviii} In reality, the station was a collaborative project of the Beijing Metropolitan Police and the Peking Union Medical College, with assistance of the Central Epidemic Prevention Bureau. Both the IHD and the CMB worked with the Beijing municipal government in the creation of the station. In the process, tensions arose between Chinese expressions of sovereign ownership and the RF's assertion of medical science authority. Despite the tensions, collaboration between the Beijing municipal government, the Central Epidemic Prevention Bureau and the RF-sponsored PUMC prevailed, with the result of a highly successful operation of the station. Public health students at PUMC used the station community as the training ground about health problems in real life. They conducted scientific investigation of diseases and provided medical services and public health education for the people in the community. The district police carried out sanitation inspections, vital statistical collection, and disease prevention measures in collaboration with the PUMC.

Maternal care was an extremely challenging issue of public health when tetanus neonatorum was a leading cause of death in rural counties around Beijing. Although Chinese government had issued regulations on midwifery as early as 1913, little enforcement of the law was carried out. In real life, the majority of Chinese relied on female family relatives or old grannies who were familiar with the experience of childbirth for delivery. As the high rate of death was contributed to the lack of hygienic knowledge about childbirth, Grant worked with Yang Chongrui (Marion Yang) on programs to train the self-taught old-style midwives about hygiene and aseptic procedure during delivery. Yang Chongrui was a Beijing native who

received her M.D. from the Union Medical School in 1917. She had worked at the Tianjin Women and Children's Hospital before joining the Department of Obstetrics of PUMC. Grant regarded Yang Chongrui "an outstanding Chinese woman of ability" and encouraged her to take up the leadership of modern midwifery training.^{xix} Upon Grant's recommendation, Yang was sent to the Johns Hopkins University for advanced training in obstetrics and midwifery and to Europe to observe midwifery training in different countries in 1925-1926. When she returned in 1926, Yang joined the PUMC Hygiene Department as a lecturer of public health and became the director of medical service division of the health station. Maternal and children's health became an added area of studies and service of the health station.

The China Medical Board, due to Grant's repeated requests, finally favored the creation of a midwifery school. Yang Chongrui served as director when the Beijing Midwifery School opened in 1928. A variety of courses were offered to train midwives, including a two-month course for old-style midwives, a six-month course for young and modern midwives, and a two-year extensive course for high school graduates who were trained to become future leaders in midwifery training programs across the country. Those who were trained to be midwives were female students, as females were considered appropriate to handle childbirth delivery in Chinese culture. In 1929 when the National Health Administration appointed Yang Chongrui as chair of the Midwifery Commission, Beijing Midwifery School was renamed the First National Midwifery School. In the 1930s, modern midwifery training and services spread in major cities, but barely touched rural towns and villages (JOHNSON, 2011). When Yang Chongrui tried to set up a pilot midwifery program in rural Dingxian with a modern doctor of obstetrics and a young trained nurse, it did not work out. Rural people, who were used to childbirth delivery by older women with personal experiences, did not trust a young city girl of twenty-some as a midwife. Traditional social norms rendered a young woman unfitting for the job. Moreover, modern physicians and nurses in white uniforms appeared strange as outlandish aliens in rural settings, especially when white color symbolized death and mourning in Chinese traditional culture. Even when emergency of difficult labor occurred, the poor transportation conditions in rural villages would make it hard, if not impossible, for the doctor to arrive in time to provide help. Moreover, service fees of modern midwife cost a lot, compared to the token payment villagers gave to granny midwives. The high cost associated with the service of modern midwifery made midwives affordable only to the well-to-do people. In Dingxian, when Chen Zhiqian (Chen Chih-ch'ien, C.C. Chen) tried to train local natives – the young female relatives of village grannies to be midwives, he failed to get their commitment to the practice of midwifery. Rural people did not think childbirth a medical matter but a joyful event of family

affairs. Chen observed that when women were healthy, they had few abnormal labor (CHEN, 1936, p. 381-384).

The majority of babies in China were delivered by relatives who had birth experiences and knew personally what to do at a baby's birth. For instance, field investigations in early 1940s indicated that as high as 88 percent of births were not attended by any midwife, old or new type, but relatives in the Dingjia rural district of Bishan county of Sichuan province.^{xx} Childbirth was a family matter of the female members who passed on the knowledge and experience of childbirth from mothers to daughters and from experienced women to new mothers. This finding, in addition to the Dingxian experience in the 1930s, shed light on the wrong assumption by national health authorities that high infant mortality was exclusively caused by granny midwives' lack of scientific knowledge of hygiene. Infant mortality was much higher in poor rural areas because of poverty and mal-nutrition. Health professionals, however, blamed infant mortality on the ignorance of old-style granny midwives. Their emphasis on scientific midwifery training with modern aseptic knowledge often excluded the attention to poverty, mal-nutrition and mother's health as factors of higher infant mortality.

Health Stations as Pilots of Public Health

Health stations as an experiment had the promise of achieving two major goals: (1) the study of local health conditions and (2) the delivery of health care services to local people. The work of Beijing health station inspired Chinese health professionals and reformist intellectuals. In Shanghai, Yan Fuqing and his colleagues at Shanghai Medical College (SMC) were impressed with the innovative training methods that Grant initiated at PUMC. They wanted to create a similar health demonstration station to train their public health students. Yan Fuqing, who had received his medical education at Yale University in the United States, worked at the Yale-Hunan Medical College before becoming president of the Shanghai Medical College. The Department of Public Health of SMC hosted such prominent medical scientists as Hu Xuanming (S. M. Woo), Huang Zifang, and Zhang Wei as faculty. They were strong advocates of public health and supporters of health modernization in China. In July 1928, they built a health station in rural area of Wusong outside Shanghai, modeling after the Beijing health station. All medical students at SMC were required to have one month's internship at the health station. Their work included public health education for locals, and clinical services such as disease prevention, sanitation, maternal health and dental hygiene. The Wusong health demonstration station was completely run by Chinese health professionals. In 1929 the Health

Bureau of Greater Shanghai joined SMC as partner to operate the Wusong station, but Japanese bombing of Shanghai in January 1932 destroyed the station (ZHANG, 2006, p. 184).

Chinese intellectuals and health reformers saw health stations as great opportunities to experiment public health programs in rural China. Leaders of the Mass Education Association of China, such as Tao Xingzhi and Yan Yangchu (James Yen) had been working with progressive intellectuals and local leaders in reconstructing village life by improving peasants' literacy and rural economic development. Tao Xingzhi created the Xiaozhuang Rural Normal School near Nanjing as an experiment in 1927. He regarded peasant health an important part of rural improvement and included health protection in peasant education. If a child could not live long and remained healthy, what was the use of education, he asked. Chen Zhiqian (C. C. Chen), who had listened to Tao's speeches and worked for the *The Binying Weekly* when he was a student at PUMC, decided to join Tao to organize a rural health demonstration program at Xiaozhuang after he completed studies at PUMC in 1929.^{xxi} Chen followed Tao's idea of integrating education with demonstration and participation in real life. When he taught modern medicine in evening classes for men and women, he let them participate in the practice of treating and preventing diseases. Chen trained villagers in the fundamentals of first aid, smallpox vaccination, hygiene and sanitation so that they could be teachers in the village. It was at Xiaozhuang that Chen observed that villagers, once trained, were a great force in spreading public health information and service. After Xiaozhuang school was shut down by the Nationalist government in 1930 because of Tao's call for socialization of facilities, Chen left to study at Harvard University upon the recommendation of John Grant. Chen would come back to work at Dingxian Rural Reform and Mass Education Movement that Yan Yangchu had started. The extraordinary experience of Dingxian has been well studied by scholars (HAYFORD, 1990; GAMBLE, 2011; CHEN, 1989).

Chen Zhiqian made significant achievements at Dingxian by training local peasant youths as health workers to provide service to their fellow villagers. Village health workers were a new phenomenon but highly successful because they came from village families and had the trust of people they were serving, unlike the health professionals from outside whom villagers tended to hold in suspicion and distrust. The intrinsic trust of one's own by the villagers made a huge difference in facilitating local health cooperation. Chen attributed his success in Dingxian to his earlier experience: "Xiaozhuang may have germinated the ideas I developed subsequently at Dingxian to train village health workers to take on some of these relatively simple tasks" (CHEN, 1989, p. 68-69). Building upon his program of training peasant health workers, Chen made further innovation in organizing a village-based three-tier health

network that connected the village with the *xian* (county) health center and district health station via village health workers. The three-tiered organizational structure of rural health network overlapped the rural administrative structure. More importantly, Dingxian's health programs were well integrated in a general rural reform movement of education and agricultural improvement. Dingxian's success provided the Nationalist government ideas on how to design rural health.

Rural health stations caught the imagination of many Chinese reformist intellectuals. Chinese scholar Liang Shuming, who was labeled the last Confucian, came to observe the Xiaozhuang experiment and then created a rural reconstruction experimental area in Zouping county of Shandong province (ALITTO, 1979). Chinese enthusiasm for experimental health stations gave John Grant more confidence in the usefulness of health stations to change China. He worked with Hu Hongji, his former colleague at the Beijing health station but now the Health Commissioner of Greater Shanghai, on a plan to build a rural health demonstration and a school health demonstration in Shanghai. Their proposal to the RF described the health demonstrations as collaborative projects of the IHD and the Health Bureau of Greater Shanghai. The school health demonstration did not work out due to lack of personnel.^{xxii} The rural health demonstration was built as Gaoqiao health station, with the Harvard-trained Li Ting-an as director.

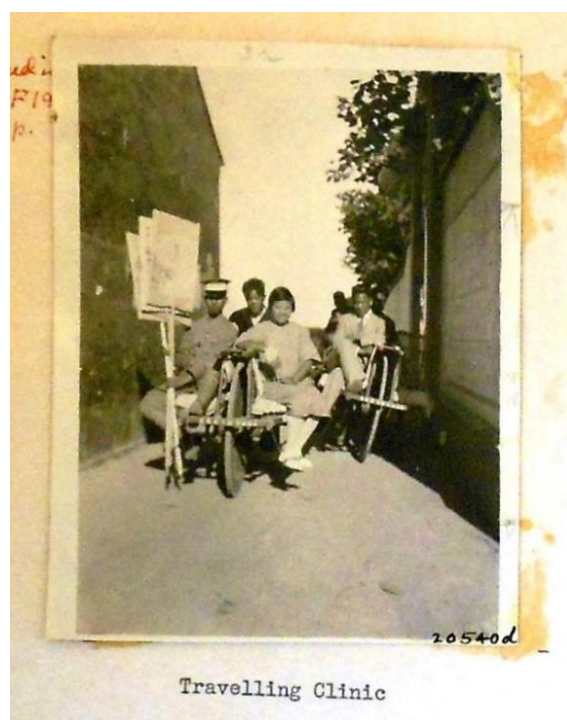
Gaoqiao was a rural town about 12 miles from Shanghai city center, covering an area of more than two hundred square *li* (half a km) with a population of 33,959. It sat on the east bank of Huangpu River and the south bank of Yangtze River, with about 200 villages surrounding the Gaoqiao town. The main reasons for choosing Gaoqiao as the site of a health demonstration area were: (1) it was rural but close to the city center, with various small businesses and merchants, and had better economic and literate conditions with 40 percent literacy rate compared to the national literacy rate of 10 percent at the time; (2) it was politically and administratively stable; (3) it had good cooperation between locals and police; and (4) the medical school of the Central University on the other side of the river could make good use of it for teaching purposes.^{xxiii} Gaoqiao station, like many others, was destroyed by the Japanese in 1937 when Japan began the full-scale invasion war of China.

Gaoqiao health demonstration station followed the model of Beijing health station in conducting vital statistics collection, communicable disease control, and public health education, but the main activities were medical service. Health surveys showed that gastrointestinal diseases, malaria, rabies, tuberculosis, syphilis, smallpox, leprosy, puerperal sepsis and infections of the newborn were prevalent. The station offered daily medical service

from morning till afternoon with surgical, medical treatment, gynecological obstetrics and pediatric clinics. The first quarter report of Gaoqiao station showed that only 1281 patients out of a population of 34,000 received medical services. Local people did not seem interested in the medical service and health demonstration. Different from Dingxian health programs, Gaoqiao did not train local villagers as health workers but relied on medical professionals from the city to provide medical service, which the locals apparently distanced from.

Of more significance in Chinese medical history was the invention of a traveling clinic at Gaoqiao station in 1929 (Figure 1). It was the first mobile clinic in China, designed to give smallpox vaccinations to villagers who did not come to the health center for service. The traveling clinic was made of two wheel-barrows that carried a doctor, a public health nurse and a sanitary policeman (see the picture). Their medical kit included vaccines, medical knives, antiseptics, other necessary medical supplies and health education pamphlets. The traveling clinic reached more people for vaccination, but only small numbers of people accepted vaccines and came for treatment at the health station over the years. The lack of interest on the part of the peasants indicated that rural people were still suspicious of modern medicine brought to them by external health authorities. They were reluctant to embrace vaccines and biomedical technologies which they knew very little about. Instead, they were used to using traditional Chinese medicine. The station's work proved rather ineffective among the local people, despite various efforts.

Figure 1 – Traveling Clinic, Gaoqiao, Shanghai, 1929.



Source: Folder 2742, Box 230, Series 601J, RG 5.3, RF, RAC.

Health stations as a method of studying local health conditions and introducing Western medical service continued to attract the attention of Chinese modernizers. More than 17 health centers/stations were established during 1929-1934 in six coastal provinces and the cities of Beijing and Shanghai. Surveys of the health stations were conducted to examine their effectiveness in meeting the designed goals. Survey reports in 1934 criticized that the majority of health stations were ineffective in providing health service to local population (LI, 1934; GRANT; PENG, 1934). They also stated that the major problem was China's lack of competent technical personnel of health. Local officials, however, disagreed and argued that the main problem for the inadequate health service was poverty and lack of resources. Health professionals continued to argue, along with John Grant's repeated emphasis, that recruiting and training of health experts were of utmost importance for health service, while they ignored the larger socioeconomic factors such as poverty and health resources. Their opinions significantly influenced the Nationalist government's health policies.

Building a National Health Administration System

The RF's ultimate influence was the creation of a national health system in China. All the endeavors of building a world-class medical college, training medical and health professionals and establishing health stations were inter-related vital steps towards the ultimate goal of creating a national health system in China. Archival documents indicated that John Grant played an extraordinary role in the development of China's national health system. As Chair of the Public Health Department at PUMC and the representative of the IHB, Grant enjoyed a unique position of influence in modern medicine and public health. He was the center of a nexus of Chinese health leaders who were anxious to modernize Chinese medicine and national health. They belonged to the PUMC circle, deeply connected to Grant either as students or colleagues or both. The prominent stature of Grant led the Interior Ministry of China to invite him to serve as advisor for the Chinese government on all matters regarding health. Grant used his advisory position effectively to promote leadership of professional expertise and the idea of state medicine as the framework for China's national health development.

As early as 1923, Grant was already contemplating the scheme of building a central ministry of health in China. He requested the RF's New York office to send him materials on the organization of a health ministry in different countries, for the possible use of establishing one in China. The RF's information director sent him "a list of the laws and other material" regarding the organization of a health ministry in countries of Czechoslovakia, Cuba, Poland, Yugoslavia, Nicaragua, Brazil, and France.^{xxiv} In the politically tumultuous 1920s China,

PUMC leaders like Roger S. Greene and Grant, along with the PUMC circle of Chinese health professionals, had regular conversations with Dr. G. Douglas Gray, the medical officer of the British Legation in China, about the creation of a ministry of health of China. Gray suggested on focusing on intensive training of good men for public health in wait of the right moment.^{xxv}

In my opinion the best way to go about it is to consolidate P H work round a central focus either at Peking or Shanghai, preferably the former, making a model station from which graduate students would learn the proper way of working and then return to their various cities and establish Municipal Public Health. Then when China becomes purged of its present misrule and has a National Government you could link up these municipal schemes and weld them into a National service comprising not only municipal schemes but also a maritime quarantine service.^{xxvi}

Gray's suggestion appeared exactly what Grant and his associates were doing, especially in the efforts of developing modern health bureaus in cities like Beijing, Tianjin, and Shanghai. When health bureaus were created in major cities during 1924-1931, former chief officers of the Beijing health station took up leadership positions as health commissioners in several municipal governments. When China's Ministry of Health was established in 1928, it incorporated municipal health bureaus and health stations as local health modernization institutions in the national structure of a health system.

Grant sought to educate Chinese officials about the importance of public health for a modern nation. He had a public health pamphlet printed for Chinese officials. In the pamphlet, Grant wrote: "Gladstone, the great English statesman, is responsible for the statement that 'the first duty of government is a safeguarding of the health of its citizens.' A study of the present important position of public health in any efficient government of the leading nations of the world shows an appreciation of this statement."^{xxvii} Grant detailed four major levels of governmental administration of public health – municipal, rural, provincial and national. Since China was a big agricultural country, Grant felt the urgent need to pay considerable attention to rural health.^{xxviii} When the Ministry of Health was being organized, Grant and his associates at PUMC worked behind the scenes with the League of Nations Health Organization (LNHO) to make sure that the Ministry of Health was to be led by people of professional expertise with American standards. Candidates for the position of health minister included prominent medical leaders of different factions, such as Liu Ruiheng and Yan Fuqing (American-trained), Wu Liande (British-trained), Hu Ding-an (German-trained) and Tang Erhe (Japanese-trained).^{xxix} Political forces of different warlords in China, such as Yan Xishan and Feng Yuxiang, and Nationalist politicians competed for the position as a reward for their protégés. The RF and the LNHO, in the name of offering international help, quietly maneuvered to make the leading candidate for the health ministry a politically neutral and professionally respected expert of

American training. Liu Ruiheng was eventually appointed the Vice Minister, the technical head of the health ministry, thus ensuring the professional dominance of American influence. Liu was trained at Harvard University and was director of PUMC at that time he was appointed health minister. Liu continued as the head of the Health Ministry and National Health Administration in the next decade (YIP, 1995).

Grant also helped shape state medicine as the frame for Chinese national health. He explained that China was a large agricultural society with the majority of people living in rural countryside and that it had low-level socioeconomic development and limited medical personnel and facilities. Given these specific conditions, state medicine would be the natural choice for China (GRANT, 1928). State medicine meant state responsibility for the health and medical service of all people with a central health system. Compared to state medicine, private medicine had two outstanding deficiencies: (1) rural areas would be insufficiently served and (2) urban cities would have *unjustified* concentration of hospitals and doctors for the rich. Grant made the call for state medicine at the annual conference of the Chinese National Medical Association on January 27, 1928, and published his speech on state medicine a month later in the *National Medical Journal of China*. His advocacy for state medicine set in motion an extensive discussion and debate among Chinese medical professionals. They wrote articles on state medicine in professional journals and popular magazines, and developed different understandings of the concept. Some focused on health and medical service for all people; while others emphasized the importance of a centralized health administration system. The meaning of state medicine shifted from the original health service for all to a bureaucratic structure of centralized medical system when Chinese health professionals searched for the delivery of state medicine in the process of establishing a national health administration (GAO, 2012). The original meaning of state medicine in Grant's view was medical service for all under the administration of a national health system.

The promotion of state responsibility for public health was an international trend in the 1920s-1940s, spearheaded by the League of Nations Health Organization. Grant had worked extensively with leaders of the LNHO, such as Ludwik Rajchman, Berislav Borcic, and Andrija Stampar who came to China to help build a national health system (BOROWY, 2009a). China was one of many countries in the inter-war years that the LNHO, upon request, helped with health reforms and establishing institutions of a national health system (BOROWY, 2009b).

Conclusion

The RF's activities in China reflected its global vision of building medical colleges and public health institutions as agents of change. The architects of RF's global vision were convinced of the power of medical science in improving people's lives by combatting diseases and reducing human sufferings. More importantly, they saw science as an effective means to solve health problems of humankind while enlightening people and transforming societies. The RF, especially the IHD, worked at the intersection of philanthropy, colonial powers, local and national governments to expand medical science and public health across the world, making the RF the most outreaching force to shape the global health system in the first half of the 20th century. The story of the RF has been told extensively, with studies ranging from high praise to harsh criticism (BROWN, 1979; FOSDICK, 1952; BULLOCK, 2011). The studies, however, often glossed over the complex relations within the RF, such as the tensions between medical and health specialists in the field work and the global strategists at the New York headquarters. Collaborations as well as tensions between the RF personnel and local governments, medical groups and social civic organizations in different countries were often lost in the narratives of philanthropy and imperialism. Recent studies of the RF in various Asian countries shed light that de-colonization movements made use of medical science and public health programs that the RF initially introduced to suit their needs and beliefs in the post-independent reconstruction of their countries into modern nations, a legacy that was far beyond the original intention and imagination of the RF officers.

The RF's success in China showcased the triumphant transfer of American medical science as the agency of modern transformation. The PUMC was the foundation and center of expertise to shape the ensuing programs and institutions such as the health stations and the municipal health bureaus. John Grant introduced the vital concepts of medical efficiency based on a combined practice of curative and preventive medicine and state medicine of government responsibility for people's healthcare. All of those programs, institutions and ideas of concepts were interlocking blocks in the ultimate building of a health edifice – the national health system in China. The International Health Division and the China Medical Board coordinated every aspect of the RF's enterprise, in cooperation and collaboration with Chinese health professionals, Chinese government, local officials and the LNHO. The RF's achievements in China would not have been possible without the capable hand of John Grant who worked tirelessly at every detail on the grounds with initiative ideas and schemes. When the national health system was created in the 1928, it incorporated John Grant's emphasis on state medicine and leadership of professional expertise. The PUMC-trained professionals occupied the

leadership in China's medical institutions and national health policies. Leaders of China's national health administration remained in the hands of medical professionals who were trained in the United States of America and belonged to the PUMC circle throughout the Nationalist era.

During and after World War II, the RF was involved in broader rural reconstruction programs in China and helped establish anti-malarial programs by setting up the first DDT field stations in Jiangning near Nanjing and in Chaozhou in Taiwan in 1946 (LITSIOS, 2005). After the People's Republic of China was established in 1949, PUMC remained and continues to be the top medical school in China today (LI & ZENG, 2014). Many PUMC trained health professionals and those who had worked with Grant, such as Chen Zhiqian, Yan Fuqing, Jin Baoshan, and Yang Chongrui, became leaders of important medical institutions. They were strong advocates of state medicine and public health. The ideas of state responsibility for public health and preventive medicine encountered an encouraging environment when those concepts were transformed into new practices for people's health in socialist China. Not only was preventive medicine emphasized as the first priority of national health policy and given an "adequate place in general education" (Grant's wish in the 1920s), medical service for all people also became a fundamental national policy as well. By the end of 1965, all 29 provinces had established "anti-epidemic disease stations with analogous structures for the railway, mining industry, and large enterprises" (BANGDIWALA et al., 2011, p. 208). Moreover, although traditional Chinese medicine was promoted and widely used, public health education emphasized the biomedical model on "epidemiology, school hygiene, occupational hygiene, food hygiene, environmental hygiene and radiation hygiene" (BANGDIWALA et al., 2011, p. 209).

The PRC government inherited from the Nationalist government the national health administrative structure, and built upon it to strengthen health institutions and expand basic healthcare services to every corner of Chinese society. Health centers and clinics were set up in vast rural towns and villages to benefit the peasant population under a socialist health system (BU, 2017; LUCAS, 1980). "Barefoot doctors" worked as paramedics in the countryside. They were a new medical force for people's health in rural China, but the prototype can be traced back to the rural health workers that Chen Zhiqian trained in Dingxian in the 1930s. Chen explained that the Chinese government "adapted the ideas developed at Dingxian to great advantage in building a nationwide rural health care system after 1958" (CHEN, 1989, p. 36). The barefoot doctors, like the rural health workers three decades earlier, originated from the village and served their fellow villagers after medical training. They not only used Chinese

traditional medicine but popularized the use of Western medicine as well (FANG, 2012). After attending short training programs that were often followed up with update workshops, they became the primary health force to provide basic medical services and health education to the peasants, mediating between the state medical system and rural health care.^{xxx} The free and low-cost healthcare system developed in the 1950s-1970s significantly applied preventive medicine in the efforts to achieve medical efficiency as well as the control and eradication of major epidemic diseases, such as smallpox, plague, cholera, typhus, typhoid, polio, kala-azar, filariasis, schistosomiasis, tuberculosis and malaria. China's low-cost healthcare of state medical system with emphasis on preventive medicine was hailed a great success model for many countries.

References

ADDRESSES AND PAPERS. *Dedication ceremonies and medical conference, Peking Union Medical College*. September 15-22, 1921, Peking, China. Concord, New Hampshire: Rumford Press, 1922.

ALITTO, G. S. *The last confucian: Liang Shu-ming and the Chinese dilemma of Modernity*. Berkeley: University of California Press, 1979.

BANGDIWALA, S. I. et al. Public health education in India and China: history, opportunities, and challenges, *Public Health Reviews*, v. 33, n. 1, p. 204-224, 2011.

BOROWY, I. Thinking Big: League of Nations efforts towards a reformed national health system in China. In: BOROWY, I. (Ed.). *Uneasy encounters: the politics of medicine and health in China 1900-1937*. Frankfurt: Peter Lang, 2009a. p. 205-228.

BOROWY, I. *Coming to terms with world health*. Peter Lang GmbH, 2009b.

BOWERS, J. Z. *Western medicine in a chinese palace: Peking Union Medical College, 1917-1951*. Philadelphia: Josiah Macy, Jr. Foundation, 1972.

BROWN, E. R. *Rockefeller medicine men: medicine and capitalism in America*. Berkeley: University of California Press, 1979.

BU, L. Cultural communication in picturing health: W. W. Peter and the public health campaigns in China, 1912-1926. In: SERLIN, D. (Ed.). *Imagining illness: public health and visual culture*. University of Minnesota Press, 2010. p. 24-39.

BU, L.; STAPLETON, D. H.; YIP, K. (Eds.). *Science, public health and the State in Modern Asia*. London: Routledge, 2012a.

BU, L. Beijing First Health Station: innovative public health education and influence on China's health profession. In: BU, L.; STAPLETON, D. H.; YIP, K. (Eds.). *Science, public*

health and the State in Modern Asia. London: Routledge, 2012a. p. 129-143.

BU, L. From Public Health to State Medicine: John B. Grant and China's health profession. *Harvard Asia Quarterly*, v. 14, n. 4, p. 8-15, December 2012b.

BU, L. John B. Grant: public health and State medicine. In: ANDREWS, B.; BULLOCK, M. (Eds.). *Medical transitions in Twentieth-Century China*. Indiana University Press, 2014. p. 212-226.

BU, L. Public Health and Modernization: the first campaigns in China, 1915-1916, *Social History of Medicine*, v. 22, n. 2, p. 305-319, August 2009a.

BU, L. Social Darwinism, Public Health and Modernization in China, 1895-1925. In: BOROWY, I. (Ed.). *Uneasy encounters: the politics of medicine and health in China 1900-1937*. Frankfurt: Peter Lang, 2009b. p. 93-124.

BU, L. *Public health and the modernization of China, 1865-2015*. London: Routledge, 2017.

BULLOCK, M. B. *An american transplant: the Rockefeller Foundation and Peking Union Medical College*. Berkeley: University of California Press, 1980.

BULLOCK, M. B. *The Oil Prince's legacy: Rockefeller Philanthropy in China*. Stanford University Press, 2011.

CHEN, C. *Medicine in rural China: a personal account*. Berkeley: University of California Press, 1989.

CHEN, C. The development of systematic training in rural public health work in China. *Milbank Memorial Fund Quarterly Bulletin*, v. 14, p. 370-387, 1936.

CHINA MEDICAL COMMISSION of the Rockefeller Foundation. *Medicine in China*. New York: the Rockefeller Foundation, 1914.

EYLER, J. M. *Sir Arthur Newsholme and State medicine 1885-1935*. Cambridge: Cambridge University Press, 2009.

FANG, X. *Barefoot doctors and Western Medicine in China*. New York: University of Rochester Press, 2012.

FARLEY, J. *To cast out disease: a history of the International Health Division of the Rockefeller Foundation, 1913-1951*. New York: Oxford University Press, 2004.

FERGUSON, M. E. *China Medical Board and Peking Union Medical College: a chronicle of fruitful collaboration, 1915-1951*. New York: China Medical Board of New York, 1970.

FOSDICK, R. *The story of the Rockefeller Foundation*. New York: Harper, 1952.

GAMBLE, S. D. *Ting Hsien: a North China rural community*. Stanford: Stanford University Press, 1968.

GAO, X. Between the State and the private sphere: Chinese state medicine movement, 1930-1949. In: BU, L.; STAPLETON, D. H.; YIP, K. (Eds.). *Science, public health and the State in Modern Asia*. London: Routledge, 2012. p. 144-160.

GRANT, J. B. State medicine: a logical policy for China. *National Medical Journal of China*, v. 14, p. 65-80, February 1928.

GRANT, J. B.; PENG, T. M. Survey of urban public health practice in China. *The Chinese Medical Journal*, v. 48, p. 1075-1078, October 1934.

HAYFORD, Charles W. *To the people: James Yen and Village China*. New York: Columbia University Press, 1990.

HEWA, S. The Alma-Ata Declaration, Rockefeller Foundation and the development of primary health care in Sri Lanka: a model for health promotion. In: BU, L.; STAPLETON, D. H.; YIP, K. (Eds.). *Science, public health and the State in Modern Asia*. London: Routledge, 2012, p. 71-92.

HEWA, S. *Colonialism, tropical disease and imperial medicine: Rockefeller Philanthropy in Sri Lanka*. Lanham: University Press of America, 1995.

JOHNSON, T. P. *Childbirth in Republican China: Delivering Modernity*. Lanham: Lexington Books, 2011.

LI, L.; ZENG, Y. *Selections from PUMC Medical Education Research*. China: Peking Union Medical University Press, 2014.

LI, T. A. Summary report on rural public health practice in China. *The Chinese Medical Journal*, v. 48, p. 1086-1090, October 1934.

LITSIOS, S. Selskar Gunn and China: The Rockefeller Foundation's 'other' approach to public health. *Bulletin of the History of Medicine*, v. 79, n. 2, p. 295-318, Summer 2005.

LUCAS, A. Changing medical models in China: organizational options or obstacles? *The China Quarterly*, v. 83, p. 461-489, Sept. 1980.

MA, Q. *To change China: The Rockefeller Foundation's Century-Long journey in China*. China: Guangxi Normal University Press, 2013.

NEWSHOLME, A. On the study of hygiene in elementary schools. *Public Health*, v. 3, p. 134-136, 1980.

PETER, W. W. The field and methods of public health work in the field of missionary enterprise. *The China Medical Journal*, v. 40, p. 226-230, March 1926.

POLS, H. *Nurturing Indonesia: medicine and decolonisation in the Dutch East Indies*. Cambridge: Cambridge University Press, 2018.

STEIN, E. A. Hygiene and decolonization: The Rockefeller Foundation and Indonesian Nationalism, 1933-1958. In: BU, L.; STAPLETON, D. H.; YIP, K. (Eds.). *Science, public*

health and the State in Modern Asia. London: Routledge, 2012, p. 51-70.

THE CHINA MEDICAL JOURNAL, v. 38, n. 5, May 1924.

THE NATIONAL MEDICAL JOURNAL, v. 5, n. 4, 1919.

THE ROCKEFELLER FOUNDATION Annual Report, 1923.

YIP, K. *Health and national reconstruction in Nationalist China: the development of modern health services, 1928-1937*. Ann Arbor: Association for Asian Studies, Inc., 1995.

ZHANG, D. *A social history of diseases in Modern China, 1912-1937*. China: Shandong jiaoyu chubanshe, 2006.

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ⁱ Note on the spelling of Chinese personal names: pinyin (old style spelling in English).

ⁱⁱ <https://rockfound.rockarch.org/international-health-division>; accessed February 19, 2021.

ⁱⁱⁱ Beyond the United States of America and Canada, the staff of the International Health Division had worked in “25 nations in Europe, 15 in the Caribbean, every country in South and Central America, 19 in the Far East, and several in Africa and the Middle East” (FARLEY, 2004, p. 2).

^{iv} The college was originally founded by the London Missionary Society in 1906 and then joined by five other British and American missions. It enjoyed the patronage and financial support of Empress Dowager Cixi (1835-1908) and many leading Chinese officials. Teaching was conducted in Chinese language and the first class graduated in 1911 with diploma recognized by the Chinese government.

^v Welch, Diary # 1, 83, quoted in: Bullock (1980, p. 41).

^{vi} HODGES, Paul C. to L. C. Goodrich, September 11, 1922, attachment to letter of GOODRICH, L. C. to R. S. Greene, September 13, 1922. Folder 968, Box 134, CMB, Inc. RF, Rockefeller Archive Center (all archival documents are from RAC unless otherwise noted).

^{vii} THE ROCKEFELLER FOUNDATION Annual Report, 1923, p. 262.

^{viii} THE CHINA MEDICAL JOURNAL, v. XXXVIII, n. 5, p. 433, May 1924.

^{ix} THE NATIONAL MEDICAL JOURNAL, v. 5, n. 4, p. 225, 1919.

^x THE ROCKEFELLER FOUNDATION ANNUAL REPORT, 1923, p. 263.

^{xi} PEARCE, Richard M. March 7, 1921, folder 1802, box 78, series 1, RG 4, RF.

^{xii} Ibid.

^{xiii} Memo. *The purpose of the founding of the chair of hygiene*. Folder 525, Box 75, Series 2B9, RG IV, CMB Inc., Sept. 26, 1921.

^{xiv} The department was renamed Department of Public Health and Preventive Medicine, and then Department of Public Health.

^{xv} Grant, John. B. *A Proposal for a Department of Hygiene for Peking Union Medical College*. Folder 531, Box 75, Series 2B9, RG IV CMB Inc., 1923, p. 42.

^{xvi} It was ironic that preventive and curative medicine completely diverged in America, while in China the government made prevention the first priority of medical policy during the 1950s-1980s.

^{xvii} Public health education at the Johns Hopkins University later incorporated community work in the training of public health professionals.

^{xviii} After the station showed satisfactory results, the word “experimental” was dropped in 1926 and the station was called Public Health Station, Metropolitan Police Department, Peking. In 1928 as the city’s name was changed to Beiping and city districts were re-organized, the station’s name was changed to Health Station of the First Health Area, Special Municipality of Beiping. In 1930, Beiping Municipal Department of Public Health merged with the Police Department to reduce municipal expenditure and the station became Health Station, First Health Area,

Department of Public Safety, Beiping (LI, Ting-an, Director. *The health station of the first health area, Beiping*. Folder 366, Box 44, Series 601, RG1, RF, RAC, 1930, p. 2-5).

^{xix} LETTER, GRANT to Heiser. *Proposal for midwifery school*. Folder 669, Box 94, RG IV 2B9, CMB Inc., September 20, 1926, p. 1-2.

^{xx} CHEN, C. C. *China-Health, training of personnel*: first semi-annual report for 1945. Box 218, Series 3, IHB/D, RG 5, 1945.

^{xxi} *The Binying Weekly* promoted awareness of public health and the role of medicine in national strength, calling for the responsibility of the state to take care of the health of the people.

^{xxii} In the 1920s, individual behavior was a prominent topic of public health discussion. Grant was a believer in changing people's health behavior through education, and its role in preventive medicine. He was influenced by the ideas of the British public health officer, Arthur Newsholme, who was a strong advocate of incorporating hygiene into elementary school curriculum. See Newsholme (1980) and Eyler (2009).

^{xxiii} FIRST QUARTERLY REPORT Ending September 30, 1929, Rural Health Demonstration, Kao-Chiao, the Municipality of Greater Shanghai, China. p. 1-3, Folder 2742, Box 220, series 3, RG 5, RF, 1929.

^{xxiv} LETTER FROM C. C. Williamson [director of information service of RF] to Grant. Folder 1805, Box 78, Series 1, RG 4, RF. March 20, 1923.

^{xxv} MEMO TO GREENE. Folder 466, Box 66, RG IV 2B9, CMB Inc., July 27, 1927

^{xxvi} GRAY, G. D. to Huang (Zifang). Folder 366, Box 44, Series 601, RG1, RF, RAC, 22 August 1927.

^{xxvii} "Public Health in Peking," 2, attachment to Grant, *Plans for public health work in China 1925*. Folder 532, Box 76, RG IV 2B9, CMB Inc., 1925. Chinese medical scientists such as Jing Baoshan and Huang Zifang frequently cited this alleged Gladstone's statement in their advocacy of state responsibility for public health.

^{xxviii} "Rural Public Health," 1, attachment to Grant, *Plans for Public Health Work in China 1925*, 1925.

^{xxix} At one point when Grant heard that Tang Erhe was offered the position of minister of health, he asked Yan Fuqing to look into it. MEMO TO GREENE. Folder 466, Box 66, RG IV 2B9, CMB Inc., July 27, 1927.

^{xxx} The training time for barefoot doctors varied from region to region, but mostly from 3 to 6 months, and some from a few weeks up to a year according to local arrangements. Re-training to update their knowledge and skills continued over the following years as part of the program.