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**Mass Inoculation and Rural Rhythms:
Local Agents, Population Data, and Restructured Social Systems During the Cholera
Pandemic in China, 1962–1965**

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Abstract

This article examines the dynamics between the mass inoculation campaigns and restructured rural social systems during the cholera pandemic in 1962–1965, with a focus on the role of local agents and population data during the integration of the medical and administrative systems. This paper argues that inoculation campaigns not only harnessed local agents and household and accounting information provided by the broader social restructuring initiatives but also directly contributed back to these by compiling inoculation registers and certificates. These campaigns included the administrative and medical systems while combining social, production, and epidemiological data in this reciprocal process. The mass inoculation therefore functionalized social control, facilitated the formation and top-down imposition of a new, broad-reaching social structure, and contributed to the formation of a sedentary society. In this sense, these inoculation campaigns were a significant social and political exercise rather than a just pathological, medical, and health incident in China.

In 1961, the seventh global cholera pandemic (*Vibrio cholerae* El Tor) broke out on Sulawesi Island, Indonesia. The disease spread to Yangjiang County, Guangdong Province in June 1961 and then quickly became a pandemic that affected southeastern coastal China from July 1962 to 1965. During this pandemic, cholera incidence in Wenzhou Prefecture, Zhejiang Province, was the highest in China (Wenzhoushi weishengzhi bianweihui, 1998:131). Right after the outbreak of the cholera pandemic, mass inoculation 全民注射 was adopted in China as a crucial part of a large-scale but clandestine government campaign against this pandemic—it was believed that only when 80% of the total population were inoculated could a community achieve adequate immunity against cholera (the WHOWPRO, Apr. 1962: 11). As the key interventionist preventive measure, the success of mass inoculation in huge populations depended on “accurate biostatistics that provided scientific truths about the population and a reliable means of sharing those statistics” (Mason, 2016: 70), which should be provided by local administrative systems. Therefore, the relationships between medical and administrative systems played a crucial role in inoculation practices, which was illustrated in different sociopolitical settings in modern China and Asia.

In China, as part of the nation-building process, both government and nongovernment organizations developed some regional and experimental public health programs in rural areas from the early twentieth century onward. These included epidemic prevention in the GMD era and under the Rural Restructuration Movement (Barnes, 2018; Bu, 2017:7; Peckham, 2016: 303; Benedict, 1996: 164; Chen, 1989). Mass inoculation was a major part of these public health efforts, after having first been implemented by the North Manchurian Plague Prevention Service under leadership of Wu Liande (Lynteris, 2016; Summers, 2012; Wu, 1959, 1936). However, inoculation practices and other health initiatives were hampered by a serious problem: the lack of accurate population data and efficient coordination between medical professionals and local administrative systems. C.C. Chen’s solution involved

selecting health workers from among untrained villagers, who served local agents and verified population data in his Ding County Health Program in the 1930s (Chen, 1989). After 1949, the gradual establishment of a medical system that mapped onto the administrative system in rural areas facilitated the work of local agents and the gathering of population data. During this process, the barefoot doctor program (implemented after 1968) was claimed to be the practice that was most successful at improving medicine and health in rural China (Gross, 2018; Fang, 2012). In modern Asian history, colonial medicine was often used as a site of colonizing power, based on the integration of the colonizers' medical system and the local system of the colonized (Arnold, 1993). In the Phillipines, American public health bureaucrats controversially attempted a Filipinization of health service to solve the passive resistance of Filipinos to the new order of colonial hygiene (Anderson, 2006; Iletto, 1988). A similar public health intervention in Taiwan under Japanese rule was much more successful because headmen and local police served as local agents for Japanese sanitary police corps (Ku, 2009; Liu, 2009).

Likewise, the mass inoculation campaign during the cholera pandemic in southeast coastal China in 1962–1965 involved population data and local agents in the context of the gradual integration of medical and administrative systems that had been unfolding in rural China since 1949. More significantly, these campaigns occurred in a very specific sociopolitical context when the Communist government committed to social restructuring to overcome the political crisis and reconsolidate the legitimacy of its rule after the Great Chinese Famine (Zhongyang dangshi yanjiushi, 2011: 571–631; Thaxton, 2008; Yang, 1996). In rural areas, the government significantly restructured people's communes (Brown, 2012; Li, 2009, Wang, 2005), which facilitated the entry of the inoculation campaign into rural areas by providing local agents and obtaining household and accounting data. In turn, these campaigns adjusted, improved and ultimately strengthened the ongoing social restructuring

process by compiling inoculation registers and inoculation certificates. During this reciprocal process, the inoculation campaign included administrative and medical systems while combining social, production, and epidemiological data, in which local agents played indispensable roles. The mass inoculation campaign therefore became a significant social and political exercise rather than a just pathological, medical, and health incident. It functionalized social control, facilitated the formation and top-down imposition of a new, broad-reaching social structure, and contributed to the concurrent restructuring of the people's commune system.

Based on the study of Wenzhou Prefecture, this paper examines the dynamics between the mass inoculation campaigns and restructured rural social systems during the cholera pandemic in 1962–1965 with a focus on the role of local agents and population data during the integration of the medical and administrative systems. It first examines the history of the entry of inoculation into villages and the challenges this encountered in the 1950s. It further examines how the social restructuring process greatly facilitated state control over rural areas and theoretically provided efficient local agents and accurate population data for inoculation programs. It investigates how the mass inoculation emergency suffered due to poor coordination by local agents and chaotic information on inoculation subjects in the summer of 1962, and address how the 1963 and subsequent inoculation campaigns solved these problems. The paper further explores how these campaigns strengthened the recent social restructuring by compiling inoculation registers and certificates in this process. The paper ends by discussing why the cholera inoculation campaigns were a significant social and political exercise and how the argument and findings of this research contribute to China studies and the history of medicine.

The Entry of Inoculation into Villages: Local Agents and Population Information

Inoculations were not a complete novelty for villagers in the Wenzhou region and southeast coastal areas in the 1960s because smallpox variolation 种痘 had been used for around a century. In the mid-19th century, smallpox variolation was first applied via contact with a smallpox scab, which was ground into powder and puffed into noses of children (Andrews, 2014: 42). In 1874, this procedure advanced to the use of a human vaccine in which smallpox lymph 痘浆 from an infected child would be scratched into the arms of healthy children in order to cause a mild but protective infection and avoid the broader outbreak of smallpox over the whole body. Smallpox variolation gradually began to operate through a set of social relationships involving the parents of the two children (the infected child and the child to be variolated) and a smallpox variolator from the local community. The recipient children's parents would invite the smallpox-infected children's parents to have dinner, giving sweets as gifts to the children, and ultimately paying a fee to the inoculators after the first rice crop was harvested (Yueqingxian weishengju, 1995: 148).

With the introduction of the smallpox vaccine 牛痘 in the Republic of China, the vaccination process gradually evolved into a medical and social event dominated by local medical practitioners known for their familiarity with local communities and access to smallpox vaccines. Wang Jingfu, the doctor in Li'ao Township of Rui'an County, Wenzhou Prefecture, studied Western medicine under his master in 1947. As he recounted, "before Liberation (i.e. 1949), I went with my master to count the number of children in each village and then purchase smallpox vaccine from pharmacies with the family's money. Right before the vaccination, villages would invite troupes to perform musical dramas 鼓词 to publicize the smallpox vaccination. We also collected money from the children's families." As Doctor Wang said, it was the rural medical practitioner's personal actions that drove the initiative.

There were a total of 20 villages in his township and he followed his master as they moved around to vaccinate children in each village in turn (Wang, 2017). Meanwhile, inoculation programs gradually became state public health initiatives in terms of how they operated and in the choice of vaccine types. However, these changes did not impact rural communities too much. In the late 1940s, smallpox and cholera were the only diseases targeted by the inoculations taking place in most counties in Zhejiang Province. Due to low vaccine production, few people were actually inoculated and these were all residents of county towns (Xu, 1991: 173).

After 1949, the process of community vaccination was no longer a medical-social event dominated by local medical practitioners. Instead, it came completely under the control of the state public health initiative—a system that quickly incorporated rural doctors. In the early 1950s, delivering mass smallpox vaccination was the first and immediate public health target for the Communist government. A provincial health department usually calculated the number of potential smallpox vaccination subjects in each county according to the required immunity rates, assigned vaccination tasks and then distributed vaccines, alcohol, needles, and vaccination registers to each county. Similarly, at the next level down, the county government arranged for vaccination work to be implemented using the district as the target unit. Doctors signed contracts to carry out work in each area. Subsidies were provided to medical practitioners by geographical area, in which the rate was highest for those sent to access difficult mountainous area and lowest to medical teams operating in the more easily accessible plains (Pingyangxian renmin zhengfu, Dec. 1954).

Throughout the 1950s, community-based medical practitioners were gradually incorporated into the rural medical system, and at the same time, the national government made great progress in the large-scale production of vaccines. From the early 1950s on, basic vaccines were soon available in sufficient supply for all inoculation efforts, such as for

smallpox in 1950 and cholera in 1952, and the types of available vaccines increased gradually thereafter. By the outbreak of the cholera pandemic in Guangdong in 1961, the Chinese public had been inoculated with vaccines against 11 diseases in various parts of China, including typhoid (paratyphoid), tuberculosis (BCG), and diphtheria (Huang and Lin, 1986: 291–343).

The transformation of rural inoculation programs from family behaviors mediated by local medical practitioners into national state-led initiatives presented a preliminary framework for a modern inoculation program in rural Chinese society. During this process, existing local medical practitioners played important and transitional roles in facilitating the entry of modern inoculation programs into villages by functioning as local agents who were familiar with the residents of rural communities. However, some local medical practitioners failed to comply with all aspects of the new work style, such as the requirement to submit work reports and statistical data on their activities. Meanwhile, some local medical practitioners fabricated inoculation figures and produced fake data to secure subsidies from the government (Pingyangxian fangyizhan, Dec. 1956).

During the 1950s, these nonprofessional behaviors of local practitioners were gradually contained and disciplined with the development of the state rural medical system and its corresponding medical institutionalization. However, the expansion of the inoculation program produced more daunting challenges. Different vaccines targeting different age groups entailed different dosages and contraindications 剂量与禁忌症. For example, dosages for the plague vaccine were divided into five age groups: children aged 2–6, 7–11, 12–16, adults aged 17–59, and those over 60. The inoculation technique used in this case was scarification, in which the skin was scratched in a specific pattern. For those aged 2–7, one scratch was to be made; for 8–15-year-olds, two scratches were made; and for those 16 years and above, three scratches were made. The plague vaccine would be dripped into each of the

breaks in the skin produced by these scratches. The combination of different dosages and scratch numbers therefore added an extra layer of complexity (Wenzhoushi weishengju, Apr. 1963). For the program to be effective, it was crucial for it to have access to detailed, accurate demographic data on prospective inoculation subjects. This data would be used to compile inoculation registers at the beginning of the process and verify inoculation records at the end.

Even if demographic information was available, the practice of inoculation registration 接种登记 was very important, but it was fully not implemented. In its circular on preventive inoculation work arrangements in 1961, Yongjia County People's Commission Health Division under the jurisdiction of Wenzhou Prefecture pointed out that some communes did not have preventive inoculation registration schemes. Because of this, inoculation times were not recorded clearly and so preventive vaccination was ineffective. The circular further instructed: "Each commune clinic should set up preventive inoculation card schemes 预防接种卡 to avoid repeated and missing inoculations 重注和漏注 to expand inoculation coverage and ensure all prospective subjects (children) are inoculated" (Rui'anxian renwei weishengke, Mar. 1961).

Another important challenge was how to implement inoculation programs in villages when the transport and communication conditions were still poor and underdeveloped. This involved a series of seemingly trivial but crucial steps, such as disseminating inoculation circulars, giving vaccinators directions on how to reach the households of prospective subjects, and recognizing and confirming the inoculation subjects. During this process, the cooperation of rural cadres, as local agents of the stage, was supposed to play a crucial part in the rural inoculation programs. However, some rural cadres were reluctant to cooperate. For example, the Rui'an County report of 1961 pointed out that some rural cadres still did not fully understand that inoculation was very important work. When medical staff asked for assistance from commune and brigade cadres to distribute preventive medicine, some claimed

they were making trouble and refused to help (Rui'anxian renwei weishengke, Mar. 1961). To some extent, this was because cadres had an interest in maintaining agricultural production and building their local economy, and inoculation work would distract from this.

In general, the practice of implementing a modern inoculation program in rural China from the early 1950s on was a process of gradual coordination between the medical system and the administrative system. This relatively short history of inoculation in villages meant that improved public health communication and local cadres' personalities both played important roles in the successful entry of inoculation into villages. The disease emergency in the summer of 1962 prompted this mass inoculation campaign.

Cholera first broke out in Rui'an County in Wenzhou Prefecture on July 5, 1962—this was the first cholera case in the Zhejiang Province. It then spread to other counties and cities under the jurisdiction of Wenzhou Prefecture before spreading northward along the rivers and roads of coastal Zhejiang Province. By 1962, there were 10,747 reported cases and 606 people had died in the Wenzhou area. The figures were much higher than those in Guangdong and Fujian provinces, in which there were 8,666 and 3,975 reported cases, respectively. The cholera cases in Wenzhou Prefecture accounted for 97% of the total within Zhejiang Province (Wenzhoushi weishengzhi bianweihui, 1998: 131).

Accordingly, on August 3, 1962, directives from the Zhejiang Provincial Party Committee and the People's Commission ruled that the entire population in each county of Wenzhou Prefecture had to be inoculated against before August 15. The only exceptions to this ruling were children under 3, adults over 60, and those with allergic reactions to the inoculation (ZJWST, Aug. 1962). In cholera-infected Rui'an County, Pingyang County, and Wenzhou City, the emergency inoculation 紧急注射 initiative meant a mass inoculation campaign in which local governments had to inoculate a total of 2.94 million people within 12 days (Wenzhou zhuanhu jingji weiyuanhui, Apr. 1963).

This emergency posed a serious challenge for local governments in view of the very limited timeframe, the extent of their duties, and the serious shortage of medical personnel. At the heart of the problem lay the requirement to secure accurate population information and coordinate the professional medical system and the local administrative system. Reliable population information were crucial for both the preparation of inoculation registers and the compilation of inoculation statistics. This data would be used for not only providing cholera vaccines for the immediate inoculation campaign but also for manufacturing vaccines for the current year and planning vaccine production for subsequent years. An even more sophisticated level of data was required to identify villagers with contraindications and those in fragile health, who would not be inoculated and would instead be issued an immediate waiver. The fastest way to secure this information was to rely on local cadres, whose coordination and support would be crucial to achieving inoculation goals. As we will see below, local governments were tasked with addressing the problem of the inoculation emergency when their communities were undergoing significant social restructuring. These changes were reshaping the roles of rural cadres, the rhythms of agricultural production, and the quality of information available about villagers.

Rural Cadres, Household/Accounting Registers, and Rural Rhythms

Between the Communist victory in 1949 and the early 1960s, China's rural sociopolitical systems underwent major transformations. By the mid-1950s, county governments were responsible for a set of districts, townships, and administrative villages (also called advanced agricultural cooperatives). With the initiation of the People's Commune Campaign after September 1958, all districts were renamed People's Communes, townships were renamed production brigades, and advanced agricultural cooperatives became known as

production teams. In Wenzhou Prefecture, the first People's Commune was formed on September 9, 1958, in Rui'an County. Within less than 20 days, more than 90% of households had joined People's Communes, and Wenzhou Prefecture basically implemented rural communization. On average, each commune had between 9,000 and 10,945 households (Li, Sep. 1959). The largest commune was even comprised of 24,777 households (Wenzhou shiwei dangshi yanjiushi, 2016: 361). It is obvious that this People's Commune system was too large to be a useful basic accounting unit for efficient management (Li, 2009: 96–99).

As a result, official efforts to “downsize People's Communes” and reduce the size of accounting units became a major theme in the sociopolitical restructuring process, even though its implementation was plagued with setbacks. By February 1962, the People's Commune system of “three-ownerships (communes, production brigades, and production teams) based on production teams” had been finalized and would last until the end of the Mao period. Meanwhile, the People's Communes were downsized (Dangdai zhongguo de zhejiang bianji weiyuanhui, 2009: 57, 64; Zweig, 1989: 5). This meant that the sizes of People's Communes in Wenzhou Prefecture had plummeted to 1,518 households per People's Commune, 126 per production brigade, and 16 per production team, respectively, by November 1961 (Wenzhou zhuanhu bangongshi, 1962: 7). The figures for Zhejiang Province were 1913, 133, and 18 households per commune, brigade, and production team, respectively (Zhejiangsheng nongyezhi bianzhuan weiyuanhui, 2005: 323).

After restructuring, each production team was responsible for organizing production as basic accounting units of the three-tier ownership of the People's Commune system (Huang, 1990: 175–80; Xue, Jan. 14, 1962; Potter and Potter, 1990: 80). The production team cadres included team directors, accountants, grain keepers, cashiers, and work point recorders. All these roles were part-time positions, meaning these people were supposed to participate in agricultural production as well as administrative work. Under this system, the capacity of

production team cadres were crucial to the welfare of all the team members because grain and cash distribution at the end of each year depended entirely on the precise and appropriate management of agricultural production and the division of labor throughout the year (Huang, 1990: 180–85). Accordingly, in spring 1962, the Zhejiang Provincial Party Committee required each locale to train key cadres at the commune, production brigade, and production team levels, which the district and commune Party committees did at night (Zhonggong Zhejiang shengwei, Nov. 1961).

The introduction of new payment schemes to reward individual peasants was another crucial factor in the restructured People's Commune system as they directly determined the productivity of commune members. Following the principles of “distribution based on contribution” and “more work, more income,” People's Communes implemented a new payment scheme called “fixed work points, flexible recording” 死分活值, which used fixed labor points as a standard, and recorded work points for commune members according to the actual quantity and quality of their work (Wen, June 13, 1962).

Accountancy therefore became a core aspect of production team leaders' work, one that was very detailed and complicated. Production teams' accounting books 会计账册 contained work point registers 工分册 and commune member booklets 社员册. In the work point registers, the work points earned by each commune member for their participation in agricultural production were itemized. Commune member booklets were comprehensive documents on each commune member. They contained assessment of an individual's work quality, their work points, sales of pig or cow manure, financial investments, and receipt of advanced payment or materials (Zhejiangsheng nongyeting, 1963: 1–58, 75–76.). For these two dossiers, household registration information was crucial as it would provide information about the available labor within each household. For this, Wenzhou Prefecture required cadres at each level to have basic information about each production brigade and to establish

complete household archiving systems (Zhonggong wenzhou shiwei dangshi yanjiushi, 2016: 426). The accounting taking place therefore contained detailed and accurate information about the agricultural production of each commune member and their entire household. In this sense, when the cholera pandemic affected China in the summer of 1962, production teams were the most basic grassroots social units in this cellular sociopolitical structure. The new accounting registers micromanaged people's lives, in which rural cadres' capacities and accurate social and production information were the most crucial factors.

This new power given to rural cadres and the implementation of new accounting systems led to new rhythms in agricultural production among rural people. With these new production rhythms, new sociopolitical structures shaped the daily lives of peasants and new social interactions that centered specifically in the village space emerged. Usually each production team had its own storehouse that served as their headquarters but also performed functions such as storing grain as well as convening team leader meetings and commune member meetings. The building also housed the desks for team accountants who recorded the work points for each commune member. Late each night, commune members returned to the storehouse to report to the team leaders, while work point recorders noted their work points for the day's work in their registers. At the same time, team leaders assigned the next day's work to every commune member so that they would know where to go and what to do the following morning. Each morning, once out of bed, commune members would go directly to their allocated fields. In this way, production team leaders kept a close watch on each member's allocated task and location. Production team storehouses also served social and leisure functions for local communities: people congregated there to chat after a day's work, children played games in the playground, and county cinema teams organized film screenings there. Everyone congregated in the same space for all activities, amplifying the social, economic and political importance of villages. There were only a few exceptions, when

people had to work outside of the reach of village space, but even these exceptions were usually arranged by production teams.

In terms of a villager's daily life, peasants would still follow the traditional agricultural patterns in which they rose at sunrise and rested at sunset. In contrast to the lives of their ancestors, the introduction of new communication technologies impacted on the lives of villagers in the 1950s. From 1956, a rural broadcasting system was gradually rolled out in each county of Wenzhou Prefecture. Speakers 小喇叭 were installed inside rural households and became a key component of the propaganda system led by the County Party Committee's Propaganda Department. Each production brigade also installed a minimum of one loudspeaker inside the village, which was connected to the county broadcasting station system. (Wenzhoushi jihua jingji weiyuanhui, 1961: 86).

The network broadcast three sessions a day to disseminate national and local political news and play music and entertainment programs. The prelude music, the timing of particular news programs, and the end of the broadcasting sessions produced regular routines among villagers. The village loudspeaker also ensured instant local news announcements reached every corner of villages, including calls to commune meetings, advertisements for upcoming movies, and even people asking for help looking for missing cows and so on. In this way, this broadcasting system greatly enhanced the sense of social routine for villagers and bound their activities together with the natural rhythms of sunrise and sunset. All in all, these new systems of organizing the rural population and their agricultural activities led to the emergence of a new administrative structure. This facilitated cholera inoculation and control measures, reshaping village life and reducing mobility. The government was better able to control everyday life, while anticholera measures added to the new boundaries erected around rural lives.

The Challenges of Emergency Inoculation: Entry and Coordination

When the cholera pandemic broke out in the summer of 1962, rural Wenzhou was in the process of adapting to the new sociopolitical structure and the specific rhythms of the new forms of agricultural production. When cholera began to spread, the government reacted promptly in terms of the organization, mobilization, and maneuvering of medical personnel and materials. Within two days of the confirmation of the first cholera patient in Rui'an County, the deputy director of the Zhejiang Provincial Health Department led 24 epidemic prevention cadres and experts to Wenzhou Prefecture and started directing the cholera prevention and treatment work. On July 28, Zhejiang Province and Wenzhou Prefecture deployed more than 400 medical staff to three affected areas—Rui'an and Pingyang counties and Wenzhou City. Those who actually arrived came from medical units in Jiangsu Province, Hangzhou, Jiaxing, Huzhou and Jinhua prefectures in Zhejiang Province, and from Wenzhou Prefecture itself. On July 30, the provincial government assigned 700 additional school of health graduates to cholera-affected counties in Wenzhou Prefecture (Rui'an shi weishengzhi bianzhuang weiyuanhui, 1999: 3). These students therefore accounted for the majority of medical forces deployed to combat cholera during the summer of 1962 (Zhejiangsheng Wenzhou weisheng xuexiao, Dec. 1962). As almost all these medical staff were nonlocals, hosting them and finding them accommodation were important for the inoculation emergency. Right after dispatching medical teams, the Zhejiang Provincial Health and Finance Departments made a very detailed subsidy scheme for epidemic prevention staff and instructed the Wenzhou Prefectural Government to implement it (Zhejiangsheng caizhengting, July 1962).

Despite these efforts, the number of medical workers was far lower than needed for epidemic prevention work, particularly the speedy, simultaneous inoculation of people in

both infected and uninfected areas in view of the huge number of inoculation subjects. In Rui'an and Pingyang counties, a total of 240 medical staff from the provincial and prefectural Cholera Prevention and Treatment Teams participated in cholera prevention and treatment, in addition to medical staff at county hospitals and sanitation and epidemic prevention centers, district health clinics, and township union clinics, as well as various independent medical practitioners (Rui'anxian fangyizhan, 1962; Pingyangxian weisheng fangyizhan, Nov. 1962). Therefore, the urban medical system was grafted onto the rural medical system and formed a pyramid-shaped whole, in which epidemiological experts analyzed cholera strains, urban medical doctors treated cholera patients, school of health students worked as assistants, while rural medical practitioners mainly performed inoculation work and nursed cholera patients. Within this system, each medical practitioner and staff group was designated to specialize in one particular area of technical work according to their proficiency levels.

The reshuffling of the medical system resulting from this emergency inoculation program meant that coordination between the medical and administrative schemes was crucial for its success. For this, each county and city Party committee organized epidemic prevention and the treatment headquarters, setting up a specific office to process daily work. The Party committee and the governments at each level set up core leadership organizations, which were headed by the Party secretary or deputy secretary and coordinated the division of labor. For instance, each of the five major cholera-affected districts in Rui'an County transferred one-third of its cadres to assist with epidemic prevention and treatment work (Rui'anxian renmin weiyuanhui weishengke, Oct. 1962). Based on the district as a unit, district health clinics organized inoculation teams. In Xianjiang District, the district health clinic organized the inoculation team, which was made up of 42 staff, the majority of whom were students at Wenzhou School of Health. The team was further divided into two groups, each of which was led by a supervisor or one to two medical doctors. Each group was then

divided into four large teams and eight small teams, each of which was made up of two to three people operating in independent work units. Once these administrative and medical arrangements had been made, the Party committees convened meetings to designate production brigade directors and accountants to assist with guiding the teams around the areas where they were to carry out their work, publicizing the programs, and registering their population (Rui'anxian Xianjiangqu, Dec. 1962).

Preparation for emergency inoculation in rural areas entailed intense, efficient division of labor between the urban and rural medical systems and the coordination of the medical and administrative systems. A key problem was that the emergency inoculation started amidst the busiest agricultural production season, the time known in the region as the “great heat,” 大暑 or July 23 when peasants harvested the first rice crop while also aiming to plow the fields and plant the seedlings for the next rice crop before the beginning of autumn 立秋, or August 8. The timing of this agricultural production work usually determined the whole community's grain output for the year. That year, 1962, was also very significant for Wenzhou Prefecture because the region was still recovering from the effects of the previous years' famine (Wenzhou diwei gongzuo zu, June 1961). To add to this pressure, local cadres were not only busy harvesting the first rice crop, they were also fully occupied with intense preparation for the predicted upcoming war and the typhoon season. Even local cadres with the best of intentions could not commit entirely to inoculation work, and the problem of noncooperative cadres dragging their heels also remained. The Rui'an County Health Bureau criticized some district and commune cadres, particularly those of production brigades, for their failure to fully understand the importance of containing the epidemic's spread. They pointed out that when no-one took charge of the work even the best measures could not be implemented (Rui'anxian renwei weisheng ke, 1962). Time management and persuading busy

cadres became the first and foremost challenge as inoculation teams were not always able to gather sufficient staff to conduct epidemic prevention work.

The lack of close cooperation between production brigade and production team cadres caused a number of fundamental problems. The failure to prepare rosters of the names of people to be inoculated became a source of particular contention. In areas where cholera broke out very early, many cadres did not prepare these, partly because they did not have time to do so. As mentioned earlier, a large number of medical staff came from other areas, the majority of which were urban, and so they did not know the villagers they were inoculating personally (Rui'anxian renmin weishengke, Oct. 1962). They simply inoculated whoever they were able to and remained unaware of the progress being made across the village population as a whole. As the inoculation program expanded, teams did not know which villagers had yet to be inoculated, so some people missed out and others received repeat doses (ZJWST, May 1963).

The Wenzhou School of Health team working in Taoshan District in Rui'an County was emblematic of these problems. In the beginning, the medical team inoculated whichever villagers they could access and had no way of knowing the overall status of the entire target population. After the first round of inoculation, the teams returned for a second round, but in the absence of proper records, some villagers who had not actually been inoculated claimed that they had been and refused to cooperate. The medical staff were unable to verify their claims. They gradually realized that if they wanted to inoculate the entire village population, they had to have complete demographic data for each commune, production brigade, household, and household member. They then started surveying the population in earnest and making formal inoculation registers. These registers provided them with information on the number of villagers who either required preventive inoculation or were exempt because of contraindications. Based on this information, medical teams were then able to determine the

number of medical personnel required and to arrange a rational work schedule. Based on these registers, medical teams moved from household to household and provided inoculated villagers with certificates, which improved processes and made inoculation work more convenient and effective (Wenzhou weisheng xuexiao, Nov. 1962).

Inoculation teams also encountered problems in fitting their work around agricultural production and the rhythms of village life. Some inoculation teams from urban areas did not understand the intensity of the “quick harvesting and quick planting” season 抢收抢种. In Fenghe Commune in Rui’an County, the inoculation team copied the list of commune members from the accounting books. On the morning of August 4, 1962, they started their inoculation work in Zhengzhai brigade by visiting households according to the details provided in the accounting registers. The plan was to vaccinate those people who were out working in the fields when they returned home at noon or night. By 9 o’clock that night, however, the total number of people inoculated had only reached 475. The medical team soon discovered that trying to vaccinate at night was inefficient because the lack of light made the task difficult. Moreover, during this busy agricultural season, laborers were exhausted at the end of the day, making it easy for them to hide from inoculation staff. If a medical team member knocked on one door, other nearby households would close their doors to avoid being disturbed. Sometimes when staff entered a household, its residents were already fast asleep. Problems of this sort meant that many young adults, the core of the agricultural labor force, missed out on the inoculation (Rui’anxian Taoshanqu fenghe gongshe baojianzhan, Nov. 1962).

Unsurprisingly, student team members from the school of health did not really have any experience of rural life and work. The summary work report admitted quite frankly that they were naïve in the way they planned their work, expecting they would be able to finish it in just over a day. Once they started, however, they found they could not locate even formal

laborers in villages (Zhejiangsheng Wenzhou weisheng xuexiao, Dec. 1962). Inoculation programs in mountainous areas introduced them to conditions that were beyond anything these urbanites could have imagined: peasants in these parts usually labored on the mountains throughout the day, so medical teams found villages that were empty of people during the day. Even children living in mountain regions would be out grazing their cattle in daylight. Intensive inoculation at night seemed to be the only option. However, the distances between each of the rural households were significant and the mountain roads rugged. The majority of the medical secondary school students had been born and grown up in urban areas and had never climbed mountains, let alone walked winding, rugged mountain roads at night (Wenzhou weisheng xuexiao, Nov. 1962).

The emergency inoculation initiative in the summer of 1962 revealed serious deficiencies in coordination between the medical and administrative systems. These problems included the absence of active coordination and participation of rural cadres, the absence of population data for compiling inoculation registers, and the failure to accommodate inoculation programs with agricultural production schedules and diverse rural life rhythms. In other words, although the broader social restructuring in rural areas that had occurred between 1961 and 1962 had theoretically provided local agents and basic population information, the implementation of the inoculation emergency was still problematic because agents and information were not fully optimized. This resulted in slow, uneven inoculation progress through 1962. For instance, although cholera broke out on July 11, 1962, in Pingyang County, only about 51% of the total population had been inoculated by August 23. In some areas like Fanshan District, the inoculation rate only reached 10% in rural areas and around 30% in towns (Pingyangxian fangyi zhihuibu, Aug. 1962). It took medical teams more than three months, late July to early October, to finish inoculation work in Wenzhou Prefecture. This patchy result in the region that was the epicenter of the cholera epidemic in

both Zhejiang and China, despite receiving huge medical resources and assistance from the central government, reveals the extent of the challenges China faced. For other areas that were not seriously affected by cholera, inoculation made even slower progress. In Zhejiang Province as a whole, only 42.28 % of the total population was inoculated by October 4, 1962 (Zhejiangsheng fangyi zhihuibu, Sep. 1962).

The Concerted Mass Inoculation Campaigns

The emergency inoculation program of 1962 obviously did not meet its original targets. By mid-October, the cholera pandemic receded with the drop in temperatures as winter approached and only sporadic cases were reported. Following instructions issued by the Zhejiang Provincial Party Committee, local governments in Wenzhou Prefecture started to review the program and prepare for the following year. The Rui'an County government pointed out: "A major problem lay in the coordination between the epidemic prevention workers and rural administrative systems. Preventive inoculation work depended entirely on the coordination of a wide variety of actors in the government and medical systems. In order to achieve their goals, health workers depended on commune cadres to publicize the program and coordinate villages so that they could inoculate villagers systematically" (Rui'anxian Xianjiangqu, Dec. 1962). The report written by Yongjia County Sanitation and Epidemic Prevention Station further highlighted the division of labor between medical epidemic prevention and administrative systems in the inoculation programs. In view of this problem, county sanitation and epidemic prevention stations and district and commune healthcare stations (i.e. union clinics) were asked to reorganize their inoculation teams in 1963. Each team would be composed of three to five members, including a brigade cadre, an accountant, a medical worker, and a rural healthcare worker (Yongjiaxian weisheng fangyizhan, June

1963). Within this structure, each person was designated a specific task. The accountant collaborated with healthcare stations to compile inoculation registers, cadres took the inoculation teams to each locality, medical doctors performed the actual inoculations, and healthcare workers assisted the medical staff (Rui'anxian fangyi zhihuibu, Mar. 1963).

The work report summaries from Zhejiang Provincial Health Department also pointed out that the emergency inoculation of 1962 suffered because epidemic prevention work was not appropriately integrated with the agricultural production calendar. The report pointed out: "Sanitation and epidemic prevention work should be understood as being a priority aspect of the agricultural production cycle as good health will ultimately enhance agricultural production. Inoculation teams should pay particular attention to the agricultural work timetables that set the rhythms of life in rural areas and ensure that in subsequent years inoculation programs are rolled out during the quiet seasons before the peak summer cholera season." In view of the fact that the immunity provided by the cholera vaccine in the 1960s only lasted for four months, the reports advised that inoculation should be conducted twice in order to ensure sufficient levels of immunity. The first total cholera inoculation campaign should target all eligible subjects and should take place before spring plowing (in March and April). The second campaign should be conducted between the spring harvest and the summer harvest and planting work (June) but should only target vulnerable population groups such as fishermen, cleaners, kitchen staff, and people living along transport lines. This was known as "reinforcement inoculation 加强注射." The report claimed that it would not affect agricultural production but would instead benefit commune members because they could develop immunity against cholera before the time of year when they went to work intensively in the rice paddies (Rui'anxian Xianjiangqu, Dec. 1962). The report further required that inoculation programs should adopt a rapid campaign format that entailed teams spending only two to four days in each locality. Three to five days after the inoculation campaign, a round

of supplementary injections 补注 should be arranged for those who had missed inoculation (ZJWST, May 1963).

Meanwhile, ensuring steady supplies of cholera vaccines was addressed at the national level. In view of the insufficient vaccine supplies that delayed the roll-out of the emergency inoculation in some areas in the summer of 1962, the Ministry of Health ordered that timely production of cholera vaccines must be guaranteed into the future and the quality of these improved. The ministry placed the budget for epidemic prevention in a special category at the national, provincial, and city levels according to the principles of “specific budget, specific allocation, and specific usage,” in order to guarantee reliable vaccine production (Weishengbu dangzu, Dec. 1962). Accordingly, nationwide cholera vaccine production in 1963 was 27 times higher than in 1961 (Wang, Sep. 1962). More significantly, as a result of medical teams’ experiences regarding the impact of vaccine quality on different population cohorts, dosages for different age groups were further refined. The various contraindications were also refined and expanded to include acute infectious diseases and other febrile illnesses; tuberculosis, acute hepatitis, and hepatic cirrhosis patients; heart disease, and high blood pressure. In addition, people with allergies, pregnant women less than eight months’ pregnant; women with a history of miscarriage and those breastfeeding babies of less than one year old were all included in the exempt category (Yunhexian aiguo weisheng yundong weiyuanhui, Mar. 1963).

The new, more specific dosages and noneligible groups required extremely delicate and efficient coordination between medical professionals and grassroots village communities. Consequently, the role of rural cadres and the accuracy of registers during this new round of inoculation campaigns in 1963 would be even more significant than before. As local agents and keepers of information, rural cadres were effectively village gatekeepers, while village accountants maintained basic demographic data. In 1963, not only were they instructed to

host inoculation teams and guide medical staff around their localities, they also had to help compile inoculation registers based on brigade household registers and team accounting books. Together these processes now directly determined the reliability and accuracy of the inoculation program.

Learning from the problems caused by disorganized and missing household data during the emergency inoculation of summer 1962, local governments in Wenzhou Prefecture called for household inoculation registers to be compiled. As early as December 1962, each county had already started preparing to print household registration books for the 1963 inoculation cycle. The Zhejiang Provincial Health Department required that these new inoculation registers should not copy the household registers used by some production brigades because the latter were derived from production team data, which was organized by labor rather than by household. This did not suit inoculation work. Instead, health departments were instructed to compile inoculation registers by identifying household population, visiting each household to check this data, cross-checking these registers against grain distribution books, and only once these steps had been completed should they finalize inoculation targets in each area (Yongjiaxian weisheng fangyizhan, June 1963). Production brigade inoculation registers would then be arranged systematically and used to break down the population of the entire commune for inoculation work. This method avoided the inconvenience of constantly “turning the pages of whole registration books to find [all the members of] one household.” This approach speeded up inoculation considerably (Rui’anxian Tangxiaqu weishengsuo, Dec. 1963).

Meanwhile, local healthcare workers were mobilized through an incentive payment scheme from 1963 onwards. Healthcare workers, who had been trained on a large scale during the Great Leap Forward, were supposed to have been readily available for assisting with the inoculation program of 1962. As special local agents, their familiarity with the

villages was supposed to facilitate the entry of inoculation teams and help verify inoculation subjects. However, the post-Great Leap economic readjustment policies had a negative impact on healthcare workers because it devalued their roles. In January 1961, the policy of taking “agriculture as the foundation of the economy and industry as the leading sector” was formally adopted, causing many production brigades to ban medical and healthcare work. Local cadres suggested that it would be better if healthcare workers instead devoted themselves to agricultural tasks, which resulted in significant reductions in their numbers. By the outbreak of the cholera pandemic, only a nominal form of healthcare organization existed in some areas (Fang, 2014: 754–790).

In view of this lesson, the healthcare worker scheme was soon resumed in Wenzhou Prefecture and other areas in Zhejiang Province. For example, Rui'an County started providing healthcare workers with partial subsidies drawn from the epidemic prevention budget, in which county health bureau and inoculation teams distributed a 2.6-cent subsidy for each injection to the worker performing the injections. In Wenzhou Prefecture in 1963, annual per capita income was 100 yuan or less in 98% of total production teams, so most rural laborers' daily income was around 27 cents, equivalent to the fee for giving ten cholera inoculations (Wenzhou zhuanhu jihua jingji weiyuanhui, Apr. 1964: 23). Consequently, the new payment system was very attractive: as the summary documents for inoculation work pointed out, “because of the implementation of a proper payment system, the majority of healthcare workers' were very enthusiastic” (Rui'anxian Xinchengqu weishengyuan, Mar. 1964). In the inoculation campaigns of the following years, local healthcare workers accounted for the majority of inoculation team personnel. This feature was especially evident in other areas of Zhejiang Province, where cholera incidence was not serious. In these areas, there were relatively few urban medical teams to support the inoculation program, which was basically conducted by healthcare workers, who made up the majority of those involved,

along with local public and private medical staff from county hospitals, district/commune health care stations, and independent medical practitioners (Fang, 2014: 754–790).

From 1963 onwards, the mass inoculation campaigns were therefore quickly coordinated by joint work on the part of the medical and administrative systems through the division of labor among local cadres, accountants, medical staff, and healthcare workers. These campaigns were organized around the rhythms of the agricultural calendar. For example, Rui'an County divided cholera inoculation work into three stages in 1963. In the first stage, from mid-February to March 1, the work mainly aimed to survey the general situation and prepare for inoculation. Based on the district as a unit, the county sanitation and epidemic prevention station trained healthcare workers. Each district and commune compiled inoculation registers and obtained demographic information. After readying personnel and materials, each district selected one to two pilot communes where inoculation workers could gain experience. During the second stage, the work focused fully mobilizing medical forces and initiating the inoculation campaign. Following official instructions, local cadres were in charge of mobilization and organization while health professionals were responsible for the inoculation itself. During the third stage, inoculation teams conducted sample surveys to guarantee efficacy and inoculate any people who had been overlooked or left out (Rui'anxian fangyizhan, 1963).

Within the overall rhythm of the inoculation campaign, inoculation work in villages fitted around the rhythms of agricultural production and rural lives. Meanwhile, the mobilization of local healthcare workers not only increased the number of inoculation personnel but also extended medical and administrative assistance to inoculation teams and brigade cadres, respectively, strengthening the verification of inoculation registers. In this sense, healthcare workers acted as local agents and checked inoculation subjects. Ample

supplies of cholera vaccines also helped guarantee that large-scale inoculation campaigns in coastal areas ran smoothly.

These improvements greatly increased the speed of inoculation campaigns in 1963 and beyond. As mentioned earlier, from 1963 on, inoculation work was conducted twice each year with the first round aiming at mass inoculation, and the second one targeting specifically areas and population groups. In Rui'an County, where cholera first broke out in 1962, the inoculation rates for 1962 and the first round of inoculations in 1963 were 79.67% and 76.78%, respectively. In other words, slightly fewer people were inoculated in 1963 than in 1962. However, the 1963 program was much faster, taking only 15 days (the first round) and 10 days (the second) in contrast to 90 days in 1962 (Rui'anxian fangyizhan, 1964). The 1963 figures for Pingyang County were similar, reaching 83.3% of the population in just 15 days (Pingyang weisheng fangyizhanzhi bianzhuan weiyuanhui, 2001: 20). Inoculation campaigns became even more efficient by 1964, when the first round of inoculation in cholera-affected districts in Rui'an County reached between 76% and 83% of the population in 10 days. Tangxia district was particularly fast: 123,679 people were vaccinated in just four days (Rui'anxian Tangxiaqu weishengsuo, Apr. 1964). In this way, the mass inoculation campaigns in 1963 and subsequent years effectively coordinated the administrative and medical systems and met the emergency inoculation targets of the cholera pandemic. As the following discussion will show, inoculation information became a crucial nexus between the efforts of the two systems.

Inoculation Registers, Certificates, and Sociopolitical Units

The key issues that had hampered the inoculation programs of 1962 were solved by the reduction in size of the production teams, which were the basic social and accounting units,

together with the roles assigned to rural agents and the compilations of reliable inoculation registers. Importantly, the inoculation campaign of 1963 and subsequent campaigns impacted on the basic sociopolitical units—rural production teams—in that different types of data contributed to further strengthening the ongoing social restructuring prompted by the failure of the large communes and of the Great Leap Forward. In this process, the three different registers being used in rural areas, that is, the household, accounting, and inoculation registers, became intertwined. As mentioned above, inoculation registers were not compiled by copying production brigade household registers but were instead re-edited household registers based on whole household and location rather than labor. Their accuracy was verified against production team accounting registers, such as work point registers and commune member booklets. In this sense, the compilation of inoculation registers improved household and accounting registers and strengthened their capacity as sources of social and production data.

Meanwhile, the inoculation process also generated a new social record—inoculation certificates, which contained the names and ages of inoculated subjects, vaccine dosages, contraindications, and health status, etc. One certificate was to be issued for each subject. To prevent people from borrowing, purchasing, or selling inoculation certificates and to facilitate the checking of those certificates, Zhejiang Province printed a set of identical certificates that only varied by series number. This established a regulated, uniform format for medical workers to fill in and stamp the documents with their officially allocated seals (ZJWST, May 1963). Both inoculation registers and certificates contributed to the creation of a new set of archival records for whole populations—epidemiological data, which were later used during both the cholera pandemic and outbreaks of other infectious diseases.

Following inoculation, the county sanitation and epidemic prevention staff organized supplementary inoculation teams which were composed of local administrative leaders,

medical staff, and the masses. Production brigades were designated as basic units for checking and verifying data. Wang Jingfu, the doctor discussed earlier who followed his master to conduct smallpox inoculations in the early 1950s, recalled: “In cholera-infected areas, the inoculation rate had to reach 95%. If people did not show up for inoculation, we went to their home when they were sleeping. They were afraid of this because the higher-ups would come and investigate. We did not dare to make inoculation figures up because leaders would do a survey in a given village and check five to ten households in order to establish a sample inoculation rates” (Wang, 2017). According to official instructions, the inoculation verification process was to consist of “four checks 四查”: a check of the inoculation registers against household and accounting registers, a check of inoculation certificates to ensure the correct number of people had been inoculated, a check of the vaccine dosage for each relevant age, and a check of the number of inoculation waivers with reference to the number of total inoculated subjects. These checks were recorded on forms that were submitted to the commune, which would collate them and prepare two copies, one for the county and one for the district. As long as they met the required standards, each commune would be issued a “certificate of quality” (Pingyangxian fangyi zhihui bu, Mar. 1963). In this sense, the follow-up process verified and cross-checked population information through inoculation registers, certificates, household and accounting registers. This process was very significant for the concurrent restructuring of the People’s Commune system as social, production and epidemiological data were more accurate and reliable through repeated verification.

Compared with the delicate dynamics of inoculation in rural areas, inoculation campaigns in urban areas were more straightforward. The comparative ease of delivery was due partly to the nature of the basic urban social units and partly to the relatively complete population information available and the corresponding social monitoring schemes that had already been established by the time of the cholera outbreak. Urban residents belonged to

either residential committees or collective work units, which managed resident information, social mobility, political surveillance, wages, and welfare packages strictly and efficiently. These factors contributed to the comparatively quick implementation of inoculation among urban residents during the cholera emergency. During the first mass inoculation campaign conducted in Wenzhou City in March 1963, local governments were so confident of their existing population registration systems that the compilation of inoculation registers started only three days before the inoculation campaign was to take place. Residential committees drew up inoculation registers based on the actual population that was resident at the time, including any people staying in the area without official local household registration data. The registers divided people into groups and assigned where they would be vaccinated—locations included classrooms, workshops, and administrative offices.

One day before the vaccines were to be administered, each epidemic prevention subquarter of the city compiled a detailed inoculation program based on the principle of “collectives first and scattered populations second.” Each work unit was informed of their responsibilities and underwent mass inoculation in turn. The government stipulated that the payment of March salaries would only be made on presentation of preventive inoculation certificates at all collective units, including government agencies, factories, shops, hospitals, and schools. The grain department was only able to issue residents grain purchasing certificates once they had seen these same inoculation certificates, which were stamped with an official seal. This coercive method was effective in promoting compliance with the inoculation campaign and it could be applied to almost all urban residents. Similar methods could not be enforced in rural production brigades because of the way rural work was organized. The differences in rural and urban inoculation procedures also illustrates the significance of the organizational structure of basic social units for a successful response to an emergency inoculation.

Regardless of these differences, the inoculation campaigns of 1963 and subsequent campaigns functioned as sociopolitical exercises for the two basic social units, production teams and work units, by integrating and verifying different types of data and implementing corresponding monitoring schemes. During this process, inoculation certificates played a specific role. The regulations of the time stipulated that people had to carry their inoculation certificates whenever they went outside their production brigades and work units. Inoculation certificates then quickly became key identification documents like passports for daily life (Zhoushanshi putuoqu weishengzhi bianzhuan weiyuanhui, 2012: 426).

The issuance of inoculation certificates combined with limitations on population movements to further restrict the population mobility of production teams and work units, the creation of which had themselves already reduced population mobility and contributed to the formation of a sedentary society. These reciprocal interactions between the effects of inoculation certificates and social structure and restrictions were reflected in the low absenteeism of villagers from their places of residence during the years when pandemics occurred. Long-term absentee 长期外出 villagers accounted for only 2.07% of the total population during the cholera inoculation campaign in selected rural areas, county towns, counties, and cities in Wenzhou Prefecture in 1963–1964. Peasants were also the least mobile of all occupations. For example, in the rural and urban areas of Wenzhou City, there were a total of 1,458 residents who were absent during the cholera inoculations in 1964. According to statistical data on occupational distributions, the highest number of absentees were among urban residents (33.8%) and workers (11.6%), but not among peasants (Wenzhoushi weishengju, June 1964). The number of absences was one factor that accounted for the numbers of people not receiving inoculations. Other explanations included contraindications, refusals, and simply not showing up for inoculation. For example, in the first mass inoculation campaign in Tangxia District, Rui'an County in 1964, 7.1% of the total subjects

who were targeted to receive inoculation did not do so for one of these three reasons. In terms of distribution, contraindications, refusals, and absence accounted for 51%, 28.8%, and 21.2% of the total subjects who missed inoculation, respectively (Rui'anxian Tangxiaqu weishengsuo, Apr. 1964). In this sense, the inoculation campaign and the immobility caused by the compartmentalization of rural society, based as it was on production teams, strengthened each other during this period.

Conclusion

During the cholera pandemic that affected southeast coastal China from 1962 to 1965, there was a reciprocal dynamic between the mass inoculation campaigns and restructuring of social systems. The recent social restructuring facilitated the entry of inoculation into villages. Local agents, including rural cadres and health workers, took on the role of gatekeepers for inoculation campaigns and coordinated the operations of the medical and administrative systems. The household and accounting registers provided accurate demographic information for inoculation registers. Although the 1962 emergency inoculation encountered serious challenges, the subsequent campaigns of 1963 and beyond were rectified to ensure that their schedules better integrated with agricultural production and rural rhythms brought by social restructuring.

In turn, these inoculation campaigns enhanced the Party's control over local agents, particularly those rural cadres who had recently been through an administrative restructuring process. The government was able to mobilize these cadres for epidemic inoculation work while also improving their administrative capacity as key local agents for the state. Inoculation registers and certificates created a new set of archival records for whole populations' epidemiological data, while inoculation certificates also became key identity

documents. This compilation process repeatedly verified social and production data, i.e. household and accounting registers. In this way, these inoculation campaigns incorporated the medical and administrative systems while combining social, production, and epidemiological data to encompass the whole of society, in which local agents played crucial roles.

In this sense, the reciprocal interaction between mass inoculation and social restructuring was significant in the broader sociopolitical contexts of the early 1960s when the Communist government committed to overcoming the political crisis and reconsolidating the legitimacy of its rule. During this period, the government reformed and restrengthened schemes for controlling population mobility (the household registration), creating organizational units (the work unit and the People's Commune), undertaking social surveillance, conducting political indoctrination, implementing new economic strategies and policies, and further consolidating the strict division of Chinese society into rural and urban areas. The reinforced role of local agents and the combination of a comprehensive set of population data which resulted from the integration of the medical and administrative systems during the inoculation campaigns functionalized social control and contributed to the formation of a sedentary society.

The roles of local agents and population data in mass inoculation campaigns in the early 1960s were also illustrated by a situation that occurred in China in the early 21st century. As Mason (2016) observed in Tianmai (her pseudonym for a large, cosmopolitan city), the lack of information on migrant workers and the absence of mechanisms for health officials to engage with their communities posed serious ongoing challenges to disease control and inoculation schemes in metropolitan cities. Medical professionals from the Center for Disease Control still needed to rely on traditional *guanxi* 关系 to work with district- and street-level public health institutions and connect them indirectly to factory bosses and village leaders,

who had some communication channels with migrant workers (Mason 2016: 43–46).

Notwithstanding, the top-down medical and administrative systems are still crucial because these systems firmly control grassroots medical professionals, factory owners and village heads, who in turn function as local agents and provide migrant population data. Once traditional *guanxi* has set up connections within and between the medical and administrative systems, the disease control scheme can operate under governmental surveillance. The case in Tianmai further indicates the continuity of the key characteristics of disease prevention and control schemes in the changing sociopolitical contexts that have existed in China since the 1960s.

Ironically, when the mass inoculation campaign was being implemented in Wenzhou and areas of southeast coastal China in 1962 and afterward, international medical communities were questioning the relative effectiveness of the cholera vaccine. These medical groups argued that there was no evidence to suggest that there was a significant difference in the fatality rates between the inoculated and unvaccinated populations. Cholera inoculation could reduce morbidity but did not have much effect on mortality among those suffering severe clinical cholera (the WHOWPRO, Apr. 1962: 10).

Concurring with this international view, Wenzhou City's internal report admitted in 1963 that although general inoculations could enhance the immunity of the masses, it was not as effective as the smallpox vaccination. Epidemic reports from each locale indicated there were still many outbreaks of cholera after the inoculation program. This result meant that even with a comprehensive inoculation program, cholera outbreaks could not be prevented (Wenzhoushi Chengdong fangyi zhihui fenbu, Oct. 1963). In December 1963, the Ministry of Health convened a cholera epidemiological expert symposium to discuss key practices in the anticholera campaign over the previous two years. Su Delong, who was a professor of epidemiology at Shanghai Medical University, frankly pointed out the shortcomings of the

“Preliminary Report on Epidemiological Efficacy Observations on the Cholera Vaccine and El Tor Cholera Vaccines,” a version of which was compiled by each Institute of Biological Products across China. Su argued that “the data we collected on the ground provided no evidence that preventive inoculation was effective in preventing cholera.” The author of the abovementioned report, Wei Xihua, the deputy director of the Shanghai Institute of Biological Products, responded: “Our report truthfully reflected the results. The vaccine is generally effective. The cholera vaccine is definitively effective, but not strong.” There were supporters for both sides of the argument (Weishengbu, Jan. 1964).

Notwithstanding, mass inoculation campaigns were still implemented during the following two decades according to the schedules and rhythms established in 1963. Although Chinese medical scientists had made efforts to invent new types of cholera vaccines, their results were unsatisfactory (Dangdai zhongguo de weisheng shiye bianji weiyuanhui, 2009: 272–73). As a result, preventive inoculations against cholera were phased out in the late 1970s. Starting in 1980, Zhejiang Province no longer assigned mass inoculation tasks to local governments (Zhejiangsheng weisheng fangyizhan, 1982: 18), and the inoculations that were implemented mainly targeted specific groups, including fishermen, kitchen staff, cleaners, and medical staff (Zhejiangsheng weisheng fangyizhan, Apr. 1980). Mass inoculation officially stopped in Pingyang County in 1981 (Pingyang weisheng fangyizhanzhi bianzhuan weiyuanhui, 2001: 41). In Zhoushan Prefecture in eastern coastal Zhejiang Province, the local health gazetteer openly admitted in 2002 that “inoculation has been applied as the major method for preventing cholera since 1962. Each year, the government has inoculated thousands of people. However, ultimately this proved not to be very effective. It [the program] could not prevent the spread of cholera. After 1983, cholera inoculation work ceased” (Zhoushanshi weishengzhi bianzhuan weiyuanhui, 2002: 79).

In this sense, the cholera inoculation campaigns in the early 1960s and afterwards were a significant social and political exercise rather than a just pathological, medical, and health incident in China. This paper is therefore significant for China studies and the history of medicine. Based on my research of the interventionist prevention scheme to control the pandemic, this paper presents a previously unexplored aspect of socialist China that unfolded between the three most radical political events of the 1960s: the Great Leap Forward, the Great Famine and the Cultural Revolution. Shifting from high politics to local politics, this article shows the dramatic socio-political changes experienced by grassroots society during the early 1960s. It sheds new light on Chinese Communist Party governance and social control/organization, which contributes to current scholarship in the fields of the socio-political history of China and Mao's China. From a medical history perspective, this paper elaborates on the rise of health governance and the formation of a health emergency scheme in China in the 1960s, which contributes to a growing literature about the role of disease in constituting social and political structures in the field of the history of medicine. More significantly and controversially, the reciprocal interaction pattern between disease and politics that is explored in this paper has also extended to responses to major social events and natural disasters even into the twenty-first century.

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