

Becoming Modern after SARS.

Battling the H1N1 Pandemic and the Politics of Backwardness in China's Pearl River Delta

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Abstract:

This article traces the early evolution of the H1N1 pandemic as it played out in China's Pearl River Delta in the spring and summer of 2009, as local public health professionals there tried to contain the virus when their American counterparts did not do so. My informants' difficulties in escaping their perceived status as a source, rather than a victim, of dangerous viruses; their use of disease control tactics that were portrayed abroad as excessive, unscientific, and unsophisticated; and their fatalism about reforming their local system of governance; all frustrated their ambitions to show off their pandemic preparedness prowess. At the same time, the gulf between their reactions to H1N1 and the reactions across the Pacific suggests the need for a more serious global debate about what local places in all parts of the globe should and should not be prepared to do in the name of pandemic preparedness.

Keywords: SARS; H1N1; pandemic; China; preparedness

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It is 9:00pm, and Huang Qing and I are in the eerily quiet H1N1 isolation ward of the main infectious disease hospital in the southeastern Chinese city of Tianmai. [1] We are here to meet the latest suspected H1N1 case, a foreign traveler that the city Quarantine Bureau has brought in from the Hong Kong border. Following Huang's instructions and what I can remember of the emergency training we all attended two months previously, I climb into my protective gear: first the biohazard suit, zipped up, then the N95 mask, surgical hat, and shoe coverings. It is hot and I instantly begin sweating and feeling short of breath – the mask limits the amount of oxygen I can take into my lungs.

The patient, perhaps 16 years old, has gently browned skin and a mess of dark curly hair, and is lying on a hospital bed, talking animatedly into his cell phone while nurses in biohazard suits take his blood pressure. The nurses report that he does not actually have a fever – his temperature is only 36.9 degrees. "I've been trying to tell them, it's just a headache!" the boy tells me as he puts down the phone. He says he attends a school in Hong Kong, and that he had gone on holiday to France – recently designated as an outbreak zone – but had returned a full two weeks earlier. He does not feel sick, he says.

Huang Qing, speaking in English, says, "Well, you might have to stay here a little while anyway." He asks how long, and she says a few hours or a few days. "A few days?? I really don't want to stay here a few days!" Huang Qing replies by paraphrasing the quarantine notice I had helped her to translate the day before, explaining that for the good of his own health and the health of others and according to international law and the law of the People's Republic of China, he might need to stay for "a while." He becomes quiet, and tells me that he is afraid. The nurse is trying to shoo us away so that she can take nasal samples. I don't know what to say, so I just pat him on the hand, tell him not to worry, and we rush out the door. "He obviously doesn't have the virus," Huang Qing says with a sigh, and she rips off her protective gear, throws it in the trash, and goes to the doctor's station to write her report.

In this article, I describe the attempts of local public health professionals in China's Pearl River Delta region to prevent the H1N1 pandemic influenza virus from spreading into Mainland China in the spring of 2009. [2] I argue that the origins of the controversial control tactics that my informants used can be located in a profound reconfiguration of public health in the Pearl River Delta region that took place in response to the 2003 SARS epidemic. Replacing a model of sanitation with model of preparedness, my informants were determined to prove to the world that they had shed the

[1] Tianmai is a pseudonym. All names, locations, and certain identifying details have been changed to protect the anonymity of my informants.

[2] All of the incidents I describe in this article occurred while I was conducting one year of ethnographic fieldwork at several local CDCs in the Pearl River Delta, from September 2008 through August 2009, as part of my doctoral dissertation project on public health reform in this part of China. I also conducted approximately 100 semi-structured, open-ended interviews and 10 life history interviews with members of city, district and community level public health institutions in two Pearl River Delta cities, as well as at city and national level institutions in Beijing. In addition, I visited a city public health institution in Hong Kong and two Hong Kong universities that collaborated with public health institutions in Tianmai. Preliminary research was conducted from June to August 2007, and follow-up research was conducted in August 2010.

backwardness associated with SARS and were deserving of a place in a “modern” global health community. What happened during the early days of the pandemic, however, instead revealed the ways in which their full admittance into this community remained elusive. My informants’ difficulties in escaping their perceived status as a source, rather than a victim, of dangerous viruses; their use of diseasecontrol tactics that were portrayed abroad as excessive, unscientific, and unsophisticated; and their fatalism about reforming a local system of governance that they viewed as irrational; all frustrated their ambitions to show off their pandemic preparedness prowess. At the same time, the gulf between their reactions to H1N1 and the reactions across the Pacific suggests the need for a more serious global debate about what local places in all parts of the globe should and should not be prepared to do in the name of pandemic preparedness.

Preparedness and the Emerging Diseases Worldview

Historian Nicholas King argues that with the rise of HIV/ AIDS in the 1980s, the “emerging diseases worldview” – the idea that the greatest new threats to the health of the globe would come from new and seemingly exotic infectious diseases – became a dominant paradigm in global health, and indeed in a sense gave birth to the concept of “global health” itself (2002). The idea that diseases are by their very nature global – that we are all affected and all “in it together” – had to do with the realization that “international” and “tropical” diseases could come to “us” (the developed world), and therefore we, as citizens of developed countries, had to care about the spread of such diseases among “them” (the developing world). Priscilla Wald describes how the emerging diseases worldview holds that “microbial traffic” flows “from the primordial rainforests of the impoverished developing world to the metropolitan centers of commerce and capital. [...] An infection may be endemic to an impoverished area, but it emerges when it appears – or threatens to appear – in a metropolitan center of the North” (2008, 34). As Nobel Laureate Joshua Lederberg famously warned, “the microbe that felled one child in a distant continent yesterday can reach your child today and seed a global pandemic tomorrow” (CDC 1994).

It is in response to this scenario that pandemic preparedness began to take hold in the 1990s and 2000s as a model for organizing public health systems around the world (Lakoff 2008). As Lyle Fearnley (2005) has described, preparedness differed from prevention models of public health in that the focus was less on trying to improve overall health indicators through sanitary and other interventions, and more on preparing for a future catastrophic disease event (Lakoff 2008). With an

outbreak of the highly fatal H5N1 strain of avian influenza in Hong Kong in 1997, which killed six people and sickened 18, the focus of global preparedness began to turn to pandemic influenza, and to southeastern China's Pearl River Delta. This region had for decades been implicated as a global source of influenza viruses – but H5N1 was different. One local flu specialist told me in an interview, "That shook up the whole world. WHO sent U.S. CDC people [to the Pearl River Delta, including Hong Kong and Tianmai] especially to investigate. [...] At the time we had never done avian flu, we could barely do human flu. Afterwards we went to Hong Kong for two months, and had an exchange. And from that moment on, the central government started to emphasize flu." Money flowed into flu surveillance and control from international and federal coffers. According to this informant, it was when SARS appeared, however, that the real obsession with pandemic flu began.

In February 2003, a Pearl River Delta physician crossed into Hong Kong and spread the SARS virus to over a dozen hotel guests, who then carried it to Toronto, Singapore, and Hanoi. In an unprecedented move, WHO issued a global health alert and urged the cessation of all non-urgent travel to Mainland China and Hong Kong and later to Toronto and other cities. SARS went on to kill about 800 people worldwide and sicken 8,000.

After initially denying the scope of SARS within China, the central Chinese government admitted error on April 20, following a whistleblower's report. Chinese leaders discharged the Minister of Health and the mayor of Beijing, promised to cooperate with all international disease control efforts, and began aggressively instituting control measures. These measures included: involuntarily quarantining thousands of people, even sealing off entire hospitals, schools, and apartment buildings; rapidly building SARS facilities, including an entire SARS hospital in one week; closing down movie theaters, Internet cafes, and other public spaces; setting up neighborhood watch systems to root out potential carriers of the disease; and drowning thousands of civets – suspected reservoirs of the SARS virus – in disinfectant. WHO praised China's actions and credited them with the success of the global SARS containment effort (Kaufman 2008; Fidler 2004; Wynia 2007).

The city that I call Tianmai is a large city located near the border between Mainland China and Hong Kong in the Pearl River Delta. [3] With SARS, this border took on outsized significance as the site where frightening diseases were likely to pass from Mainland China to the rest of the world, and Tianmai's public health professionals soon found themselves on the front lines of the global pandemic preparedness apparatus (Kleinman/Watson 2006). After SARS, the budget for flu surveillance in Tianmai shot up by a factor of 10, the size of the flu control team doubled, and the rest of the public

[3] Hong Kong, a former British colony, rejoined the People's Republic of China in 1997 as a Special Administrative Region – but a border with passport control still separates it from Mainland China.

health system reorganized to focus on preparedness. Thus, by the time H1N1 appeared in April 2009, Tianmai's Center for Disease Control and Prevention (TM CDC) – where I was conducting ethnographic fieldwork – had been preparing for such an event for six years, and was determined to prove that it had absorbed the lessons of SARS and could keep another potentially deadly bug at bay.

To the surprise of most flu specialists, however, the new H1N1 virus first appeared in North America, not the Pearl River Delta. "You know, we did all this stuff on H5N1 [avian influenza] as the next pandemic, and here we are and it's from North America [...] it's not what we thought," one U.S. CDC official told me. An important reason that this was so surprising was that North America was not supposed to have the conditions that fostered the emergence of new flu-like viruses. Although the origins of the SARS virus to this day have never been determined (Janies et al. 2009), scientists immediately implicated "wet markets" – markets selling fresh produce, meat, and live animals common in the Pearl River Delta. They attributed the virus first to civets (a raccoon-like mammal) and then to bats, both "traditional" animals sold in some wet markets for consumption (Kan et al. 2005; Lau et al. 2005; Li et al. 2005; Tu et al. 2004). [4] By eating these wild animals, city residents in this part of China were portrayed as transgressing the line between nature and culture, and thus launching SARS (Shortridge 2005; Goudsmit 2004; Brookes 2005; Zhan 2005). As Mei Zhan argues in her analysis of SARS, "the story of 'zoonotic origin' did not blame nature itself for the SARS outbreak; what went wrong was the Chinese people's uncanny affinity with the nonhuman and the wild" (37).

Western media and Western scholars also pointed to the juxtaposition of China's many "backyard farms" with modern cityscapes as presenting another kind of viral danger (Bingham/Hinchcliffe 2008; Kaufman 2008; Lockerbie/Herring 2009). Backyard farms – small-scale family holdings of animals – were ubiquitous throughout Asia, and observers commonly described them in derisive terms familiar to any historian of epidemics (c.f. Shah 2001; Markel 1997). They were portrayed as filthy, backwards, and uncontrollable; they allowed for an unholy mixing of animals, humans, and waste; they were contrary to modern agricultural techniques; and they were inevitable breeders of disease (Bingham/Hinchcliffe 2008; Douglas 2002). Having been blamed for repeated outbreaks of H5N1 avian influenza since 1997, backyard farms joined wet markets as emblematic symbols of China's backwardness. Of particular significance was that the "farm-to-fork chain may be as short as a few meters" (WHO 2004) – implying an anti-modern failure to separate the meat one eats from the live animal from which it derives – or to separate nature (live animal) from culture (human food) (Douglas 2002; Levi-Strauss 1969). As with SARS, such backward transgressions were seen as dangerously

[4] The index case was said to have had contact with civets in a wet market prior to getting ill. Civets were later shown to be victims rather than perpetrators; apparently the virus passed from humans to civets rather than vice versa (Janies et al. 2008).

intermingling with the modern world in Chinese cities. According to Wald, "The 'primitive farms' of [the Pearl River Delta], like the 'primordial' spaces of African rainforests, temporalize the threat of emerging infections, proclaiming the danger of putting the past in (geographical) proximity to the present" (2008, 7–8).

Johannes Fabian has argued that "denial of coevalness is a political act, not just a discursive fact. The absence of the Other from our Time has been his mode of presence in our discourse" (1983, 153–54). Though other discourses about the origins of avian flu existed – some scientists eventually began to blame factory farms, for example (Otte et al. 2006) – Tianmai's public health professionals interpreted the ubiquity of the backwardness discourse as a political challenge. The desire to transition from backward to modern and join the ranks of powerful nations had been an overarching goal for China's leadership since the early days of Communist rule (Greenhalgh 2008), and locating the source of backward diseases outside of China's borders had been a key part of this project since the time of the Patriotic Health Campaigns in the 1950s (Rogaski 2004). For my informants, the arrival of H1N1 in 2009 proved that this mission, at least in Tianmai, was finally complete: the Pearl River Delta was no longer the source of backward diseases, it was a modern destination.

From my Tianmai informants' point of view, the next move, then, should have been clear. This time, rather than the Pearl River Delta, it was the U.S. and Mexico that were charged with containing the virus and preventing it from spreading beyond their borders. WHO and U.S. preparedness plans drafted in the mid-2000s stated that at phase 5 (declared on April 29), exit screening and other strict containment measures inside affected countries should be taken to stem the spread of the virus to other countries and delay the onset of a pandemic (WHO 2005a; U.S. HSC 2006). [5] The WHO plan suggested that at phase 5 affected countries should attempt to "exclude spread to other countries/regions" and "make massive efforts to contain or delay human-to-human transmission and the onset of a pandemic" (WHO 2005a, 32). My informants took these plans extremely seriously. As one Hong Kong flu specialist told me, "WHO is only a platform for communication. But on this side, in China, Hong Kong, Taiwan, they treat the WHO's suggestion as gold. And this is what WHO said."

But what the WHO plan said and what the organization did turned out not to be quite the same thing. By the time H1N1 was identified, the U.S. CDC declared that it was already too late to contain it (McNeil 2009). WHO concurred: although it did not declare a pandemic until June 11, the agency decided almost immediately in April that "geographical containment was not feasible, leading the [WHO] to call for mitigation" (Gostin 2009, 2376). The virus rapidly spread beyond North America,

[5] An updated WHO plan published in April 2009, at the same time that the H1N1 outbreak was occurring, changed the meaning of phase 5 to be essentially the same as the pandemic phase, and removed the recommendation for efforts to delay transmission during this phase, though it retained recommendations for exit and entry screening (see below, WHO 2009). My informants did not seem to be familiar with this new plan.

and on May 1, the first case of H1N1 was confirmed in Hong Kong. And with that, Tianmai's post-SARS preparedness apparatus kicked into gear.

Creating a Public Health System of Preparedness

By 2003, the nationwide disease control apparatus that Mao had built during the height of Chinese Communism – a low-cost, prevention-based system credited with rapid, radical improvements in the health of Chinese – had been disintegrating quietly for years, a result of economic reforms that discouraged government investment in public health (Hsiao 1995; Liu et al. 1995; Liu/ Mills 2002; Wang 2004). From the time of Mao's death in 1976 until the appearance of SARS, Mao's system of Anti-Epidemic Stations (AES), had been morphing into semi-private enterprises that supported themselves through paid sanitation inspections of restaurants, hotels, and factories. With the arrival of SARS, the AESs were given a new purpose, as a retooled national network of Centers for Disease Control and Prevention (CDCs).

SARS did not, technically, create the Chinese CDC system. But it did, largely as an accident of timing, co-evolve with it – or, as Jasanoff has put it, SARS and the CDC system were “co-produced” (Jasanoff 2004). When SARS appeared in 2003, the country was in the midst of undergoing a transition from a “Soviet system” to an “American system” (Peng et al. 2003; Lu/ Li 2007). This process involved splitting each AES into a “Health Inspection Institute” (weisheng jian dusuo) and a “Center for Disease Control and Prevention” (jibing yufang kongzhi zhongxin) (CDC) (Lu/ Li 2006). In Tianmai, this split took place during the height of the SARS outbreak, with the new Tianmai CDC opening its doors in May 2003. The health inspection institutes were charged with taking over the bulk of the sanitation inspections. The CDCs, on the other hand, were to focus on laboratory and field research, disease prevention and surveillance, and epidemiological investigations.

Prior to 2003, money for the high-tech labs, surveillance systems, and well-trained personnel that local public health professionals hoped to build into this system was lacking. The SARS response provided all of these things, but it also provided a very particular way of doing public health: the paradigm of pandemic preparedness as a model for public health praxis was built directly into the fundamental mandate of the CDC system. This emphasis was felt especially acutely in the Pearl River Delta. One senior TM CDC member explained:

“At the time, to tell the truth, people thought the CDC’s job was giving out vaccines, and disinfection, that’s all. [6] The whole society knew the CDC [after SARS], knew that we were primarily here for disease control, for acute infectious disease, we have this important position. [...] After SARS, that made clear what the goal of the TM CDC is. What are the goals of the CDC? What kind of work do we do? This is where the fundamental change came in. [...] Now primarily what we do is [...] gradually building preparations, contingency for sudden public health incidents, as well as some infectious disease response.” [7]

The name “CDC,” an explicit reference to the U.S. CDC in Atlanta, was meant to evoke the kind of highly modern, scientific ethos that Susan Greenhalgh (2008) has described in the context of Chinese reproductive policy. Indeed Chinese public health professionals from the local to the national level displayed an admiration for the U.S. CDC that bordered on worshipful. Numerous informants cited the American institution’s “technology,” “hardware,” “speed,” and skill in responding to outbreaks, as models for what they hoped to become. Visits to or from the U.S. CDC became instant status symbols that far exceeded the prestige of a similar visit to or from the national-level Chinese CDC. TM CDC workers clamored for collaborations with the U.S. CDC, which were most easily obtained for projects relating to influenza or to HIV/AIDS. Finally, almost everyone I talked with told me that their greatest public health hero was a U.S. CDC scientist in Beijing who ran a program called the Field Epidemiology Training Program (FETP), which has since 2003 trained hundreds of Chinese public health professionals in outbreak response. Those in the TM CDC who graduated from the program were promoted to top posts.

It is no accident that my informants looked to the U.S. CDC for guidance – the American organization had taken an active role in developing China’s preparedness and disease control capacities. Aside from the FETP program, dozens of U.S. CDC representatives reside in China and run a variety of programs including the China-U.S. Collaborative Program on Emerging and Re-emerging Infectious Diseases, the Global AIDS Program, as well as influenza surveillance and laboratory safety training programs. U.S. CDC employees living in China whom I interviewed embraced their positions as role models for the new Chinese public health system. One told me, “They do admire the [U.S.] CDC but really it’s rightfully so, because it really is the best in technology, best in personnel too. And [we] are the first ones on top of all the disease outbreaks, including AIDS, SARS, swine flu – right from the beginning, we are always doing the best work and the best investigations.”

[6] These were the primary tasks of the AES in Tianmai at the time that the CDCs opened.

[7] A separate Center for Chronic Disease Prevention and Control (CCDC) dealt with chronic disease response in Tianmai. The CCDC received less attention, less funding, and provided less status to its leaders and workers than the CDC, due to the greater perceived importance of infectious disease control.

My informants lacked any similar reverence for their own national-level CDC. The TM CDC was officially supposed to receive “direction” from the CDCs above it at the provincial and central levels, but such direction was rarely sought due to a general understanding among all parties that the technical capacities and strength of the TM CDC’s personnel exceeded that of the Guangdong provincial CDC and to some extent the central CDC as well. One Guangdong CDC department head, for example, told me that his Tianmai counterparts had many times the funding that he had, and “to be honest, they are better equipped and more highly trained – we couldn’t oversee them if we wanted to.” One TM CDC informant told me more diplomatically, “The provincial CDC, it’s not that we are very proud or look down on them. But [...] actually the quality of the personnel at TM CDC, and the extent to which we understand Tianmai’s situation, is deeper than theirs.” Even WHO had a particularly high regard for the quality of the work produced by the CDC in Tianmai, partly due to its positioning near Hong Kong. One WHO informant told me that it was the desire of Tianmai’s leaders to appear “international” which made Tianmai – along with other Pearl River Delta cities – a particularly strong site for international cooperation. She told me that due to the commitment of Tianmai’s leaders, several WHO projects had been piloted there.

Further strengthening the relative independence of the TM CDC was the fact that the national-level CDC had no codified power to enforce public health directives at the lower levels. Rather, at each administrative level in China (national, provincial, city, district, community), the Bureau of Health associated with that level exercised control over the corresponding level of CDC (a “kuai-kuai” horizontal structure – see Lieberthal 1995; Zhong 2003). At the same time, the CDCs had a “tiao-tiao” (vertical) structure of “technical direction” that was supposed to flow downward. The Bureaus of Health (BOH) also had a tiao-tiao structure of more formalized power that flowed from the Ministry of Health downwards. The TM CDC itself, meanwhile, was at the nexus of a citywide system of district- and “street”-level CDCs, each of which was under the jurisdiction of the corresponding BOH. Because the TM CDC was one of perhaps a dozen city institutions with public health-related functions, some of them under the jurisdiction of the BOH, some under other city Bureaus, and some under central or provincial control, it also had ad hoc “cooperation” (hezuo) relationships with these other institutions on a project-by-project basis. This limited the power of both the BOH and the TM CDC, as most projects required the cooperation of institutions not under the jurisdiction of the BOH.

Hong Kong also acted as an important partner. After SARS, Hong Kong’s Centre for Health Protection established official relations with the Guangdong provincial BOH, which involved meeting

monthly, agreeing to report outbreaks to each other without having to go through Beijing first, and establishing a 24-hour phone connection. The CHP also developed closer relations with the provincial and city CDCs in Guangdong province, but these connections remained informal. As a courtesy, the CHP notified the TM CDC about any changes in its emergency response policies that it made, "because this affects them, if we stop quarantining people, for example," one CHP official told me. In the early days of H1N1 it sent faxes to the TM CDC whenever a suspected case or contact crossed the border. Still, as the CHP official explained, "Often Guangdong might want to follow us, but they have to wait for Beijing, they still have to do what Beijing says, so that's frustrating for them." TM CDC leaders were most responsible of all, however, to local government officials. TM CDC employees, meanwhile, answered only to their TM CDC leaders.

What all of this means for our discussion of H1N1 is that even in the case of a national pandemic control campaign like that launched to address H1N1, disease containment efforts were highly localized. The Ministry of Health put out general directives, but provincial and city leaders tended to make their own decisions about how to respond to those directives. The success of any national effort was ultimately reliant upon the cooperation of the local CDCs, and the leaders of those CDCs had a considerable amount of latitude as to how they wished to carry out any particular project. One Beijing-based WHO representative told me, "The guidelines [the national level] gives are the minimal to do. But that doesn't mean the provinces and cities can't do more."

By displaying powerful pandemic preparedness capabilities that exceeded the demands of Beijing, my informants thought that they would show the world that the TM CDC was deserving of the CDC name. They would live up to the reputation they had built as one of the most advanced public health systems in China, on par with the best in the world. They would succeed where even the U.S. CDC had failed. They would stop a pandemic in its tracks.

A Foreign Pandemic Arrives

In late April 2009, small sidebars began appearing in local Tianmai newspapers reporting that a new flu had been identified among sick children in California. By the time the cases in California had been traced to a larger outbreak in Mexico, assistants to the TM CDC directors had begun flitting breathlessly around the center, delivering notices to all department heads alerting them that "lingdao gaodu zhongshi zhu liugan" or "the leaders have made swine flu a top priority." Local newspapers and television stations reported that President Hu Jintao himself had declared the prevention of swine flu

to be of vital importance. On the day the first Hong Kong case – in a Mexican tourist – was confirmed, flights were halted between Mexico and China, and the Health Minister gave directives for every level of CDC to track down and quarantine passengers who were on the same flight with the patient, to report and isolate all people with symptoms who had recently returned from Mexico or the U.S., and to quarantine all contacts of such people for seven days – all with the goal of preventing or at least slowing the virus from entering China (c.f. Cankao Xiaoxi 2009). As one Chinese national CDC official later told me, “Once [WHO] raised the [preparedness] level from 3 to 5, China immediately change[d] H1N1 flu from category B to A. That means they are more restrictive, you have to quarantine all the patients and also all the contacts.”

In Tianmai, the BOH issued a notice declaring that the city CDC, in conjunction with the city’s Quarantine Inspection and Control Bureau, had the responsibility of keeping the virus from crossing the border between Tianmai and Hong Kong – that is, of “defending the first line (dì’yī xiàn).” TM CDC leaders in turn issued a notice to all departments declaring that swine flu prevention and containment was now the center’s greatest priority, and called a rare center-wide meeting to review the initial steps to be taken. “Whether it’s bird flu or swine flu, the same principles apply,” the director of the center said at this meeting. He made it clear that this response was to be the culmination of the TM CDC’s many years of preparation, that everything they were going to do was entirely in keeping with “international regulations” – especially WHO pandemic preparedness schemes – and that the continued good name of the TM CDC and its members depended on success in preventing swine flu from taking hold in Tianmai.

The Tianmai media took up the cause, referring constantly to the SARS experience in doing so. Interviews with SARS hero Zhong Nanshan, a Pearl River Delta native and perhaps the most famous doctor in China, rehearsed stories from Zhong’s heroics in identifying and stopping SARS, and offered up lessons for H1N1. A spread on the H1N1 threat in a local magazine declared, “From this H1N1 that was brought by North Americans, we can easily think back to the SARS panic six years ago. Actually today Chinese people remain in combative readiness for H1N1, and benefited from the life and death practice of six years ago” (Hong 2009, 35).

As initial measures, TM CDC leaders barred all those assigned to the emergency response team from leaving Tianmai until further notice. A 24-hour hotline was established to answer questions from concerned citizens. Disinfection equipment was prepared. The flu surveillance mechanisms that had been put in place after SARS were tightened, and lower level CDCs were told to report any suspected

cases immediately – though my informants complained that even in this instance assuring cooperation from lower level CDCs was difficult, as no district or community wanted to be the first one to report a case.

One of the first measures that the CDC and Quarantine Bureau jointly implemented was to require each person who crossed the border from Hong Kong to Tianmai to complete a health report attesting to his lack of flu symptoms and reporting where else he had traveled during the previous seven days. The Quarantine Bureau reassigned much of its personnel to man flu prevention booths, where they examined health reports, pulled aside suspect travelers for interviews or exams, and pointed laser thermometers shaped like guns at the foreheads of anyone who had transited through Hong Kong from an “epidemic region” – at first defined as Texas, California, or Mexico, and later Japan, the rest of the U.S., Canada, and Hong Kong itself. In keeping with Tianmai BOH guidelines, anyone reporting recent travel to an epidemic region and showing a fever of at least 37.5 degrees or any other flu-like symptoms would be taken to the designated swine flu hospital – an infectious disease hospital that was also the receiving hospital for SARS patients – to be evaluated by TM CDC workers. Anyone still exhibiting symptoms at that point would be isolated until swine flu was ruled out through laboratory tests, or for seven days after cessation of flu symptoms. In addition, TM CDC workers detained anyone reporting contact with a swine flu patient, or seated on an airplane with a suspected case, in a quarantine facility on the outskirts of Tianmai, where they were monitored and treated with Tamiflu and Traditional Chinese Medicine for seven days. [8]

In the early days of the pandemic, the TM CDC sent investigators to the hospital whenever a suspected case was brought in. Later it sent workers to stay in dormitories at the hospital for two-week shifts, where they were on call 24 hours a day. The vast majority of the educated young people hired since SARS to build up the TM CDC’s technical capabilities were pulled from their positions in other departments and assigned to carry out these tasks. All other programs, including surveillance for other infectious diseases common in the spring and summer, were effectively put on hold. Similar steps were taken across China, as well as in Hong Kong.

At the beginning of this campaign, a wave of excitement rushed through the TM CDC. Midnight calls to don full-body biohazard suits in the searing heat and investigate the steady stream of suspected cases were met with enthusiasm. Eager young workers who had spent their entire short careers training for a moment like this volunteered to take up residence in the quarantine camp. Quarantine notices were issued with a sense of importance, and incensed foreign travelers were calmed with

[8] This rule was later softened to include only passengers seated within three rows of affected passengers, and, as we shall see later, was eventually dropped entirely at the end of the summer. I was never allowed to visit the quarantine facility.

appeals to a moral high ground based in, as was explained to me, “the laws of our country and of the international community, internationally accepted regulations, and a responsibility to society and the world.” When moral appeals did not work, promises of laptop computers, free mobile phones, and Western-style meals helped to soothe unsteady nerves. The whole TM CDC bustled with excitement, a sense of purpose, and a feeling of pride that the people there were carrying out a rigorous response worthy of the CDC name. The media reinforced an aura of heroism. The front pages of newspapers and magazines throughout the month of May were splashed with photographs of public health professionals in biohazard suits and grateful patients, and articles recounted dramatic quarantine efforts all over China.

But within a couple of weeks, the tone at the TM CDC quickly soured. During the SARS epidemic, China’s leaders and public health professionals were internationally praised for implementing harsh but apparently successful control measures (Kaufman 2006; Saich 2006). But when they began to institute similar measures in response to swine flu – this time focusing on foreign travelers in an effort to contain the virus outside rather than inside China’s borders – the same organizations that had praised China six years earlier instead either offered only tepid support or even criticism, calling the response an overreaction. Meanwhile, Western news outlets flung accusations of xenophobia, and published harrowing accounts of tourists’ quarantine experiences in backward conditions at the hands of a draconian state (Metzl 2009; Stolberg/Robinson 2009). The Mexican government evacuated its citizens from China, accusing the public health establishment of human rights abuses after Mexicans in many cities, including Tianmai, were quarantined and subjected to medical tests without reason to suspect that they were infected (Singer 2009; Telegraph Online 2009). Scientists even began deflecting blame for the virus’ emergence away from North America, suggesting that some key components of H1N1 DNA had actually originated in East Asia (Trifonov et al. 2009). This move infuriated my informants: one young CDC worker confronted me and demanded an explanation for why the U.S. media was spreading lies that the virus was Chinese and not American.

The efforts that my informants thought would solidify their place in the international community instead seemed to them to be jeopardizing it. Their bureaucracy had been built exactly for this purpose, people had been trained, money had been invested, infrastructure had been built, and over and over again they had been warned that they were responsible for taming the next pandemic. But now that they were doing exactly what they thought they were supposed to be doing, they were being criticized rather than praised. Meanwhile, the U.S. CDC that they so admired as a role model seemed to them to

be standing by and doing nothing, allowing the disease to invade China. To many of those working so hard to institute Tianmai's swine flu measures, this felt like a betrayal. "The international community should support us. This is both in accordance with our own laws and with the [WHO's] International Health Regulations. It's the U.S. they should criticize, they are the ones who did not do anything to stop this," one epidemiologist told me.

One Step Forward, One Step Back

In describing his experience in a Chinese quarantine in July 2009, Jonathan Metzl drew upon the trope of the backyard farm when he wrote in the *Los Angeles Times*, "The Chinese media have reported that travelers placed in quarantine are being held at five-star hotels, but if this is true, then the star system is in need of revision. Imagine a Motel 6 next to a chicken farm in the middle of a field. Then imagine that it had been left abandoned for a year before receiving a quick cleaning and sanitizing and a lot of new security features" (2009). Metzl went on to charge that by putting him and other healthy travelers in quarantine, the Chinese had acted out of xenophobia and fear. He concluded by declaring that his captors had done just the opposite of what my informants told me they thought they were doing: complying with international standards. "Chinese health authorities need to wake up to this lesson and develop China's ongoing H1N1 response in concert with, rather than in rejection of, international norms" (2009).

My informants at first vigorously defended themselves against these sorts of complaints, variations of which they told me they sometimes faced in their own quarantine facilities and also read about in local and international media reports. Repeatedly they insisted to me that their actions were not rejecting international norms, but were perfectly aligned with them. They cited WHO plans that presented the SARS response as an example of the kind of global action that should be repeated during an influenza outbreak. They cited the fact that no one knew at first how mild the virus would be, that judgments of severity in any case were not part of WHO preparedness plans – a fact that led to later international criticisms that the WHO itself had overreacted to what was essentially an ordinary flu (Reuters 2010) – and that WHO had warned that H1N1 could mutate into something more like H5N1, or even might mix with H5N1 in China (Fox 2009). They cited the training that the U.S. CDC and others had given them since SARS, and the expectation that they felt came along with this training that they should mount an aggressive response against the next influenza-like threat. They cited pandemic preparedness materials from the Ministry of Health that suggested that by following the successfu

quarantine and containment activities, surveillance, disinfection, and Chinese medicine treatment methods used during SARS, similar results might be obtained for influenza (PRC MOH 2006, 2007a, 2007b). Local media also stated that WHO endorsed quarantine as a “long established principle in dealing with infectious diseases” and a “means that can be taken under special circumstances” (Nanfang Dushi Bao 2009).

Public health officials in the U.S. clearly did not think that the relatively mild H1N1 outbreak qualified as one of these special circumstances. What is less clear, however, is what virus would qualify. This is hard to surmise because though the U.S. preparedness plan acknowledged that a pandemic could begin in North America, the strategies that it laid out almost exclusively started with the premise that it would begin overseas, most likely in Asia, and that containment measures would be implemented overseas with the goal of preventing or slowing the spread of the disease from Asia to the U.S. (U.S. HSC 2006; U.S. HHS 2005). The plan for federal government response incorporated this assumption into the U.S.’ own phase system: phase 1 of pandemic response would be declared when a suspected human outbreak occurred overseas, while phase 4 indicated the arrival of the virus in the U.S. (U.S. HSC 2006). In a magazine interview, U.S. CDC acting director-general Richard Besser reinforced this position when defending his decision not to implement any border controls for H1N1: “So at the time that the outbreak was first diagnosed, it was already in the U.S. Our pandemic planning, overarching planning that was done largely around avian flu, had approached or looked at [an outbreak that] would originate off our shores” (Walsh 2009).

The investment they had made in training and infrastructure in China, my U.S. CDC and WHO contacts acknowledged, was an important part of their efforts to heed WHO’s call to “stop the spread of highly pathogenic bird flu at its source” (WHO et al. 2005). But though the U.S. CDC and WHO officials with whom I spoke seemed unsurprised by the Chinese decision to use large-scale quarantine for H1N1, they, along with many scholars, agreed that such large-scale involuntary measures would most likely never be implemented in the U.S. or any other “liberal democracy” – except perhaps as a last resort in the face of an extreme threat (Wynia 2007; Gostin et al. 2003). The U.S. plan, when describing the conditions under which stringent control measures might be taken domestically, indicated that only if the most basic functions of (American) society itself were at risk would one undertake wide-scale coercive restrictions (HSC 2006; HHS 2005). [9] Interviews with several U.S. CDC workers supported this view. “At the beginning I got messages asking, ‘how is this different from U.S. quarantine?’ And I said, ‘the U.S. doesn’t quarantine!’” one U.S. CDC informant told me. I asked

[9] Quarantines for suspected SARS cases were instituted in Toronto, Canada after the virus reached Canada in 2003, but they were for the most part voluntary and limited, and strict border quarantines like those in China were not imposed.

how high the bar would have to be for the U.S. to do something along the lines of what he had witnessed in China. Would cholera be reason enough? Ebola? “Yeah, I think there would have to be, like, blood coming out of your eyes!” he replied with a laugh. He went on to describe a speech that a colleague from the U.S. CDC gave at the China CDC during the initial outbreak, in which he told Chinese colleagues, “You know quarantine is about risks, and risks that society is willing to take – it’s an intervention that’s partly determined by your cultural values.”

An ethical guidance issued by the WHO in 2007 supported this cultural relativist stance, suggesting that though all measures that restrict liberties must be implemented only when “strictly necessary in a democratic society,” (WHO 2007, 9) latitude in terms of specific approaches “will depend on local circumstances and community values” (WHO 2007, 2). As Gostin et al note, “coercive strategies reflect conceptions of individual rights, the legitimacy of state intrusions, and the appropriate balance between security and liberty. Measures tolerable in an authoritarian regime would not be tolerated in a liberal democratic state” (2003, 3231–2). He and others concluded that as members of an authoritarian society, Chinese people would find it more acceptable to be subject to coercive practices than people of democratic societies.

One implication that came along with this type of analysis was that in addition to being better suited for non-democratic societies, quarantine was also better suited for non-technological and non-modern societies. Large-scale quarantine was presented as a blunt instrument associated with the past. Many scholars and journalists have noted with amazement that SARS apparently was stopped “with essentially nineteenth-century public health instruments” (Fidler 2004; see also Bayer/Fairchild 2004). Fidler noted, “The public health instruments at the forefront of the SARS battle were surveillance, isolation and quarantine, which were the main tools of infectious disease control in the historical era before the development of the arsenal of vaccines and antibiotics” (2004, 106). He went on to argue that for a public health response to be sustainable, diagnostics, therapies and vaccines must eventually replace quarantine (167). U.S. government scientists agreed; in a December 2009 article, U.S. Department of Health and Human Services Assistant Secretary for Preparedness and Response Nicole Lurie argued that though quarantine might sometimes be effective, “[t]he ultimate way to protect individual persons and populations from disease is with vaccination, and the rapid development and manufacture of the H1N1 vaccine represent a triumph of modern science” (2572). Quarantine, like backyard farming, was presented as a pre-modern practice that preceded the teleological development of superior technology. While still sometimes useful, it was not emblematic of

the sort of scientific, modern diseasecontrol apparatus that my TM CDC informants thought they were demonstrating.

Reinforcing this association, worst-case pandemic catastrophe scenarios outlined in scientific journals (c.f. Osterholm 2005; Belshe 2005), popular science writing (Garrett 1994; Davis 2005) and WHO pandemic preparedness materials (WHO 2005b) almost always conjured up the 1918 Influenza as the dark vision that could finally justify similar measures in a modern democratic society. Black-and-white images of makeshift hospitals and morgues circa 1918 are scattered throughout WHO literature on pandemic preparedness, for example, and the preface to the U.S. Pandemic Influenza Implementation Plan begins with a description of the 1918 flu (2006). Alfred Crosby, in arguing that SARS presaged the return of a 1918-like event, concluded, "There is a bitter little pill of a joke currently circulating among infectious disease experts. It is short: The nineteenth century was followed by the twentieth century, which was followed by the [...] nineteenth century" (2003, xiii).

The people of the TM CDC did not want to a symbol of the nineteenth century. They instead argued forcefully that they had not violated international norms – they had improved upon them. They consistently told me that the lack of democracy in China, as well as what they described as a persistent collectivist spirit, provided the structural environment needed to implement necessary control measures. They blamed a democratic system and an emphasis on individualism, on the other hand, for the inability of the U.S. to follow suit. Democratic governments would have done the same things China was doing if they were able, they told me – because it was the correct, scientific thing to do according to the principles of preparedness, they said.

In making this argument, TM CDC leaders departed from their praise of the U.S. CDC and presented U.S. inaction as a sign of weakness. One told me:

"In this area, when it comes to infectious diseases, I think that China has better administrative means than the U.S. – stronger and more effective. If the U.S. wants to do this sort of thing, it's not easy. [...] A lot of our measures, maybe Americans say it's human rights. For example, the current quarantines, they'll say, I'm not going, you're violating my human rights. Our country, in this area, is clear about having sense. It can take forcible measures."

It was not just the leaders who made this argument. A young worker in the infectious disease department told me of the quarantine and other harsh measures, "Some people have been complaining

to their embassy, not understanding the situation. But really it's because Chinese leaders are actually ahead, trying to keep one step ahead [qian yi bu] of other countries." She pointed to the successful quarantines as an example of China's ability to "walk in front" of the international community by garnering widespread popular support for a more thorough, effective response. Similarly, informants at the Guangdong CDC claimed that 80 percent of Guangdong province's residents that they surveyed said they thought the virus was being effectively controlled through the local CDCs' aggressive measures.

Science and Leaders

Support among TM CDC workers, however, quickly began to falter. As the pandemic response dragged on, the U.S. stopped reporting cases, and Hong Kong stopped tracking and quarantining contacts, the younger TM CDC workers began distancing themselves from the rhetoric about democracy that their leaders were espousing and that they had at first supported. They instead quietly began suggesting that their political system was perhaps not helping them to respond effectively to H1N1, but hindering them.

Foreign patients' complaints and demands had begun to wear on my young informants' patience and on their confidence that they – or rather their superiors – held the moral high ground. Yet their leaders, ever more eager to show the breadth and depth of the TM CDC's capabilities and make sure they were not blamed for letting in the virus via their city, announced almost daily additions to the set of tasks allocated to the increasingly unenthusiastic cadre of young people. The 24-hour telephone and laboratory shifts carried on long after the sense of urgency faded. Dashes to the hospital faded into weeks living in hospital dormitories. The weekend overtime shifts to call and check up on every single traveler who had crossed the border from Hong Kong into Tianmai, carried on even as Hong Kong stopped isolating those who felt sick. The burden of all of these activities fell on the newest, youngest, and most well-educated members of the CDC, who had trained in the shadow of SARS, organized outbreak simulation exercises, attended emergency management trainings, and chased after false alarm after false alarm of H5N1 avian flu, only to suddenly wonder what the point of it all was. They began to feel silly, frustrated, and finally bitter. They wondered why they were spending so much time on H1N1 while they were more or less ignoring more dangerous diseases that circulated in Tianmai every summer – such as hand, foot and mouth disease, which had been on the rise for years. As more and more countries abandoned any measures that even approached what they were doing, they no longer felt that Tianmai was "walking ahead" of the rest of the world.

They charged their leaders with failing to follow scientific norms that those in other countries were following. If the U.S. CDC was not responding to H1N1 in the way that the TM CDC was, then it must have its reasons – it was, after all, they asserted, the epitome of scientific modernity. Because of the leaders' failure to be scientific enough, and their excessive concern with losing face or losing their positions, they had in fact lost face with the international community and left them all in the current predicament, these young workers told me.

"The leaders need to change their strategy," said one. "You can see they're not paying attention [to H1N1 in the U.S.]. In China everyday they have a count, say there are so many in the U.S. and so many in China. But in the U.S. papers I look at online, they have nothing!" But when I asked her how such a change might occur, she shook her head. "There's nothing we can do about it – it's all determined by the leaders" [meiyou banfa, dou shi lingdao anpai de]. Another young informant told me that the problem was not so much with the leaders themselves as with what he called their "irrational" system. A system too focused on local prestige and on pleasing local leaders was unscientific and incompatible with a modern disease response, he told me:

"The defect with our system is that there's no way to change something once it's no longer useful. It's fine if you need to adjust a policy, there's nothing wrong with it – back then maybe it made sense [to do all these things we are still doing]. But now it doesn't, but no one's going to stop, because there's no way for anyone to stop, everyone just listens to the leaders, and the leaders are only worried about losing face. There's no process for anyone to adjust, it's completely irrational. That's why it's better in the U.S. to at least have a process, if something no longer makes sense, you change it, you follow scientific research, get experts to research this problem and decide what is the rational [heli] way of proceeding, and then change the policy. [...] And everyone here is only worried about pleasing the next higher level, that is, the next level above them. Because that's the one that's going to judge them. They don't care about the actual effect that it has, or rationality or science – as long as they make the next higher leaders happy, they're satisfied. So the leaders just say something based on what they think the next higher up will like, and then we have to do it."

Later, however, another colleague told me that the problem could really be traced back to a problem of national leadership:

“In China, everything is decided by the Party, by the national government, and right now because WHO made a big deal of it, and because of SARS and not wanting to have something like that, the national government is doing this. And until the national government owns up to the fact that this is not worth it and calls it off, no one region is going to let up.”

As the virus slowly made inroads all over China, however, the national CDC began to abandon quarantine as a strategy and to loosen its surveillance requirements, acknowledging by July that the disease had spread too far to be stopped. But Tianmai's leaders continued to require detailed reporting and quarantining of contacts even after this national shift began. An informant who worked for the national Chinese CDC told me: “We keep telling [local CDCs] that they don't need to chase every single contact anymore. They don't need to test every single person who has any symptoms either. Actually they never needed to do that. So we need to explain this to them, but at the local level, it's hard for them to understand, they are worried about face.” The TM CDC's efforts to show just how modern and scientific its pandemic response system was ended up instead making many of its members feel that they were showing just the opposite. Late in the summer of 2009, the TM CDC leaders quietly closed Tianmai's quarantine facility, the hospital teams were sent home, and the 24-hour hotline was shut off. The containment effort was over.

Conclusion: Toward a Global Debate on Pandemic Responsibilities

In November and December 2009, as H1N1 became commoner than the common cold throughout the U.S., the same commentators who had declared China's measures to be inappropriate began to suggest that perhaps they had been wrong. In a November 11 New York Times article entitled, “China's Tough Flu Measures Appear to be Effective,” journalist Edward Wong noted that, apparently as a result of the measures, China's total case count was dwarfed by that in the U.S. Wong went on to quote WHO Beijing office director Michael O'Leary as asserting, “I think there were a variety of measures put in place by different countries, and it's difficult to say what worked best and what didn't, but China's has worked very well.” Aggressive containment measures, it seemed, were perhaps “rational” after all. In a more guarded assessment Lurie argued, “Many observers think that China's isolation and quarantine policy, like the school closures in the United States, was disruptive. Unfortunately, we do not yet have adequate data to help us understand whether any of these measures worked, nor do we have a good

understanding of the levels of individual or social disruption that are acceptable to different people, communities, and countries.” (2009, 2)

Lurie raises a question that is critical to the development of a more meaningful global debate about pandemic preparedness measures. WHO stated in its ethics document that specific approaches to pandemic control “will depend on local circumstances and community values” (2007, 2). But whose values are “community values,” and to whom must social disruption be considered “acceptable” before it is to be used? If quarantine did work after all in slowing the spread of H1N1 and minimizing its effects, should the U.S. have attempted to implement it also? Could it ever have succeeded in doing so? If we are “all in it together,” when it comes to global pandemic control, should we all be required to sacrifice equally? And if not, who should decide for “the people” of a particular city or community what is acceptable and what is not?

The people of the TM CDC felt that they had to take the most aggressive measures possible against H1N1 – this was what they thought would boost their reputations and ingratiate themselves with WHO and the U.S. CDC. But that did not necessarily mean that they found quarantine acceptable when it came to restricting their own liberties. TM CDC workers seemed no more willing than the average American to sacrifice themselves for the good of the collective. One informant who had been working long shifts in the H1N1 ward, for example, admitted to lying about her contact with sick patients when she crossed the border into and out of Hong Kong, in order to avoid being caught in her own or her Hong Kong colleagues’ quarantine. On the other hand, as I have shown elsewhere (Mason n.d.), my informants did find quarantine and other severe tactics acceptable for others, especially those considered to be outside of society. Tianmai’s large internal rural-to-urban migrant population, made up of liminal outsiders whom my informants considered to be natural carriers of infectious diseases, is vulnerable to becoming the target of coercive public health measures in the future. And as my informants pointed out, one can never presume that a debate over the usefulness of adopting such measures would precede or follow their adoption.

My point here is not to suggest the U.S. acted correctly and China did not, or vice versa. Rather, I suggest that a more rigorous debate on the goals and tactics of pandemic preparedness is called for. This debate should acknowledge that any global disease response is composed of thousands of local responses, that global plans and global discourses have local consequences, that new diseases do not only emerge in “backward” places, and that both diseases and potential solutions flow in more than one direction (see Briggs and Nichter’s 2009 discussion of “biocommunicability,” for example). The U.S.

CDC, WHO, and other international organizations that have set up shop in China and invested heavily in promoting national and local public health reforms that prioritize influenza preparedness, must take more responsibility for the priorities they set, the models they put forth, the plans they issue, and the training they give. This is true not just in terms of what actions are taken, but also in terms of how systems are designed and what other priorities are being left out as a result. As we saw in the case of H1N1, priorities and plans – even if they are meant only as suggestions – carry real weight in local places, and real consequences. And, as the U.S. CDC and WHO are well aware, they are sometimes interpreted in the context of political procedures and structures that differ markedly from the places that first conceived them. This does not mean that the U.S. CDC and others should not be involved in China, but it does call for much more careful review of who is promoting what measures where, and whom the measures will really benefit. We must, as Atlani-Duault and Kendall suggest, first “map the varied truths constructed around the influenza epidemics and then [...] participate, together, in constructing new ones” (2009, 210).

Rather than hand-waving what happened in China as a case either of excessive overreaction or of a “culturally acceptable” measure not subject to outside judgment, the U.S. CDC and WHO – as leaders of global disease response and idols of public health professionals in China and perhaps elsewhere – need to take the lead in conducting this review. As scandals involving HIV/ AIDS research conducted in Africa have borne out (c.f. Petryna 2009), the use of ethical relativism in global health practice has usually served to protect those living in liberal democratic nations who are most likely to benefit from more permissive “values” overseas – generally in places marked as backward – without obliging anyone to take responsibility for those who are at the losing end of this equation. International organizations should avoid such quagmires by more seriously considering not just what countries blamed for emerging diseases are obligated to do in order to protect the rest of the world, but what the U.S. and others are obligated to do to protect those countries, and what everyone is obligated to do to protect individual people and the best interests of various populations. Local – and not just national – public health professionals must be part of this debate, for it is they who are familiar with the needs of communities and who are carrying out preparedness measures. And they should do so not just as students learning from the supposedly superior science and technology of the U.S., but as partners in deciding what form a truly global response can and should take.

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