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SARS: Collaboration and Resistance

Severe acute respiratory syndrome (SARS) is a disease of many firsts. It was the first international disease epidemic of the twenty-first century. It was the first time this novel coronavirus had been found in humans. It was the international community's first true public health challenge in the new century. Finally, it was the first disease that globalization visibly both exacerbated its spread in a short period of time and contributed significantly to its end. Its emergence posed multiple, unique challenges to an international community still struggling to devise an appropriate response to the threat of epidemic diseases.

Because of the uncertainty surrounding this previously unknown disease, meeting the challenges posed by SARS required ingenuity. Time was not a luxury. As the disease spread rapidly and relentlessly, fear grew. Social dynamics changed. People took to wearing facemasks in public as a precaution. Scientists around the world scrambled to decipher the disease's seemingly mysterious origins, spread, and treatment.

Governments also struggled to devise appropriate responses. Surveillance systems played a large role, but critics called these draconian. States were called upon to impose voluntary or compulsory quarantine and isolation, but worries arose about their usefulness, their contribution to a sense of panic, and the potential for discriminatory application. With all of the scientific technologies available at the start of the twenty-first century, does a nineteenth century strategy like quarantine and isolation still play a role in preventing a disease epidemic? Concerns about human rights and civil liberties played a significant role in the debates over strategy, but many of the countries most affected by SARS lacked a strong tradition of protecting civil rights. Can states employ a quarantine and isolation strategy while still respecting the rights of individuals? Does the GPG of

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infectious disease containment override concerns about surveillance programs that infringe upon human rights?

SARS forced the international community to stop considering these questions in the abstract and address how they would play out in the real world. While definitive answers do not yet exist, the SARS epidemic between 2002 and 2003 gives us a look at how the international community's views on the role of surveillance in public health and its usefulness have continued to change and evolve. The SARS experience shows that the international community places a great deal of emphasis on surveillance and will use it to get around official stonewalling and denials from national governments. It also demonstrates, though, that serious questions remain about public health surveillance on an individual level. There appears to be a willingness among the general populace to accommodate some disruptions in their daily lives to stop the spread of an epidemic, but quarantine and isolation still provoke fear and opposition.

SARS has a unique place in the spectrum of public good. Some countries, like China, initially reacted to the disease's outbreak by trying to *prevent* it from becoming a public issue. They sought to shield it from the public, and therefore showed no willingness to share information that could have benefited the rest of the international community. At the same time, other states actively sought to foster information-sharing processes for collective benefit. However, their strategies for containing the spread of the disease, and thus realizing the public good of disease control, aroused suspicion and relied on methods viewed by some as overly restrictive and draconian.

This chapter begins by discussing some of SARS' epidemiological features before chronicling the history of its outbreak in 2002 and 2003. It then examines how various countries responded to the disease. The People's Republic of China initially denied reports of a new disease epidemic, thanks in part to institutional and political arrangements that discouraged such openness. As soon as it acknowledged the presence of SARS, though, it took aggressive actions to contain its spread. Various Southeast Asian governments imposed travel restrictions and implemented quarantines. Of these, the travel restrictions and quarantines imposed by Singapore were the most far-reaching and strenuous. Surveillance came to play an increasingly central role, but governments justified this by appealing to a greater good and sometimes implementing a complementary program to alleviate suffering. Finally, the chapter explores the effects of these strategies. Excesses certainly occurred, and some stigmatization emerged against particular groups, but the use of surveillance,

quarantine, and isolation played a key role in preventing SARS from spreading even further and taking more lives.

The Epidemiology of SARS

When reports first emerged about a new respiratory illness that quickly and severely sickened its victims and did not respond to standard treatments, doctors were stumped. They initially suspected a new form of influenza, chlamydia, or pneumonia, but laboratory tests quickly ruled these out. Instead, researchers discovered that a previously unknown coronavirus was the cause of this new disease. While coronaviruses are not new to humans and frequently cause colds, no one had ever before seen this particular coronavirus in humans—or anywhere else, for that matter.[1] The discovery of the SARS coronavirus (SARS-CoV) required a great deal of detective work to find how this virus made people sick, and how it spread and emerged among humans in the first place.

Part of the difficulty in diagnosing SARS initially came from its seeming lack of standardized symptoms. The initial symptoms are indeterminate and closely resemble the flu: coughs, sore throats, gastrointestinal problems, muscle aches, shortness of breath, and lethargy. Chest x-rays fail to display any singular common appearance in the face of SARS. White blood cell counts may be low, too, but this is an unspecific symptom. When SARS first emerged, of course, no such diagnostic tests existed. Instead, doctors worked to rule out any other cause. SARS became a diagnosis by exclusion.

Since its first emergence, WHO has refined its diagnostic guidelines for SARS. A clinical diagnosis of SARS must meet the following four criteria:

1. A fever of 38 degrees Celsius or higher
2. One or more symptoms of a lower respiratory tract illness, like coughing difficulty in breathing, or shortness of breath
3. Chest x-ray evidence of chest infiltrates consistent with either pneumonia or respiratory distress syndrome
4. No possible alternative diagnosis that can explain all symptoms[2]

Definitive diagnosis comes through laboratory diagnostic tests, but these criteria provide health care workers with firmer guidelines for identifying suspected cases. While SARS remains to some extent a diagnosis of exclusion on a clinical level, improved laboratory tests allow for more rapid and accurate confirmation of cases.

Close personal contact appears to be the dominant mode of transmission for SARS. Respiratory secretions spread when an infected person coughs or sneezes, placing those who live with or care for SARS patients in particular danger of exposure. Some evidence suggests that SARS-CoV is present in urine and feces,[3] and the CDC admits that other yet unknown means of airborne transmission may exist.[4] It appears that persons are only contagious while they are exhibiting symptoms, particularly during the second week. Since the exact period of contagion is still uncertain, CDC guidelines recommend that SARS patients minimize their public excursions for at least 10 days after their fever breaks. Illness usually appears within 2 to 7 days after exposure.

Treating SARS remains difficult. A 2006 survey of research studies on SARS treatments glumly noted, "Despite an extensive literature reporting on SARS treatments, it was not possible to determine whether treatments benefited patients during the SARS outbreak."[5] Standard treatments for respiratory disorders show minimal efficacy; in fact, it was the failure of these standard treatments that first alerted doctors to the presence of a new disease. Ribavirin, a common antiviral treatment, initially received some attention as a SARS treatment, but subsequent research demonstrated that ribavirin offered little relief to most people and had significant side effects. The CDC suggests that doctors use "that same treatment that would be used for a patient with any serious community-acquired atypical pneumonia."[6]

A SARS TIMELINE

Rumors and reports about a new, potentially fatal respiratory illness in southern China first emerged in November 2002. The first case of atypical pneumonia, now considered the first case of SARS, was reported on November 16, 2002 in Guangdong Province. Some thought that the disease was a new variety of influenza, while others blamed pneumonia. More than anything, the new illness inspired fear. It came on quickly and caused severe symptoms. Furthermore, how it spread remained a mystery. Who was at risk? How could it be treated? No one knew. It later emerged that WHO's Global Outbreak Alert and Response Network (GOARN), a computer surveillance system designed to track and investigate reports of disease outbreaks around the world, did in fact pick up a report about the illness in Guangdong on November 27, 2002, but the report was never translated from Chinese into English. Because the alert did not point to a specific cause or illness, WHO officials did not initially consider it of

high importance.[7] This oversight delayed the initial international response or even recognition of a new disease.

WHO officials first heard about this new illness in December 2002. Unconfirmed reports suggested that Guangdong Province was experiencing an outbreak of a new influenza variant. Guangdong Province lies on the southeastern coast of China and is the country's most populous and wealthiest province. It is home to two of China's most economically productive and important cities: Guangzhou and Shenzen. When asked about these reports, Chinese national health authorities replied that the illness was the standard Type A flu and that everything was fine. Despite the national government's seeming lack of concern, anecdotal reports continued to circulate about unexplained respiratory ailments.[8]

On January 2, 2003, a hospital in Heyuan, a prefecture-level city in northeastern Guangdong, faxed the province's health department about two cases of atypical pneumonia. Both patients had been admitted 2 weeks earlier, and neither was responding to standard treatments. More alarmingly, nearly all of the medical personnel who had come into contact with the patients were exhibiting similar symptoms.[9] Hospital officials had asked for some advice or any assistance, but had received nothing.

The following day, SARS made its first appearance in the press—though hardly in a comforting manner. That day, the *Heyuan Daily*, a newspaper owned by the Chinese Communist Party (CCP), published the following announcement:

> There is no epidemic in Heyuan. There is no need to panic. Regarding the rumor of ongoing epidemic in the city, Health Department officials announced at 1:30 this morning, "There is no epidemic in Heyuan." The official pointed out that people do n't need to panic, and there is no need to buy preventive drugs.[10]

One foreign reporter pithily suggested that this was "the least reassuring reassurance" he had ever seen.[11] After this report, the government imposed a ban on any reporting on the outbreak. Simultaneously, sales of preventive drugs and white vinegar (many believed its fumes could ward off respiratory illnesses) soared. Prices increased dramatically, and shortages became commonplace.

Despite the government's reassurances, this new illness continued to spread. Later in January, the illness spread to Zhongshan, a prefecture-level city in southern Guangdong. The outbreak occurred both within the community at large and among health care personnel

in local hospitals. As reports of this outbreak circulated, the government issued a report that encouraged the use of strict infection-control measures on January 21, 2003. Unfortunately, the report was labeled "top secret."[12] This designation meant that only top provincial officials and hospital directors could read and discuss it; they could not even share the report's findings with others. The doctors and nurses who dealt with patients and fell ill with this mysterious disease were deliberately excluded from learning about the threat they faced. The "top secret" designation also prevented the WHO officials from reading the report.[13] Despite their best efforts, though, information from the report trickled down to the general public.

The rumors and unconfirmed reports hit a feverish pitch in February 2003. On February 5, 2003, the first (translated) report about a strange flu appeared in GOARN, and attracted the attention of WHO. A few days later, text messages about the disease swamped Guangdong's cellular telephone network. Over the course of three days, cell phone users sent the message "There is a fatal flu in Guangzhou" 126 million times—40 million times on February 8, 41 million times on February 9, and 45 million times on February 10.[14] Also on February 10, the first query about a new illness in Guangdong appeared on ProMed. ProMed—the Program for Monitoring Emerging Diseases—is a free Internet-based international surveillance system dedicated to sharing information about the spread of infectious diseases and exposure to toxins among humans, animals, and plants. Originally an initiative of the Federation of American Scientists, the International Society for Infectious Disease now operates the service and has more than 40,000 subscribers in 165 countries. Reports come from news sources, official reports, and local practitioners. This first report on ProMed asked about reports that had appeared on Chinese Web sites about a strange respiratory disease and an increasing number of deaths.[15] The report brought the disease to the attention of medical personnel outside of China for the first time.

That same day, WHO first approached the Chinese national government about the report. Not only had they seen the ProMed report, but WHO also received a call from an embassy in Beijing asking for more information about the rumors. WHO's office in China also reported receiving an increasing number of media inquiries about the epidemic.[16] They asked for information about the disease and offered their assistance to health officials to combat its spread. Guangdong provincial health officials held a news conference on February 11 to report that 305 people had contracted atypical pneumonia since

November 2002, and that five people had died from it. At the same time, though, they announced that the outbreak was under control and that residents need not panic. National authorities informed WHO that the number of cases was on the decline and that they did not need international assistance.[17] In fact, Guangdong's Provincial Health Bureau had issues diagnosis guidelines for the new disease a week earlier, but they did not provide this information to WHO until April.[18] The press conference neglected to mention that the illness was heavily concentrated among health care and food workers.[19]

The following week, the WHO's office in China made a proposal to the Chinese national Ministry of Health to investigate the atypical pneumonia outbreak. WHO requested permission to travel to Beijing and Guangdong to examine cases in these areas. As an international organization, WHO must rely entirely upon the good graces of national governments in order to investigate outbreaks and epidemics. It cannot violate state sovereignty unless it receives permission to do so. In this case, the Ministry of Health decided not to grant WHO the full access it sought and instead only permitted a WHO team to travel to Beijing. Though rumors suggested that Beijing was experiencing cases of atypical pneumonia, it was hardly the most afflicted city. The epicenter of the disease remained firmly in Guangdong at this point. Indeed, during the previous week's press conference, government officials suggested that this illness was almost entirely confined to Guangdong. On the one hand, the Chinese government allowed the international community to introduce some level of surveillance activities. On the other, though, the government only allowed this international public health surveillance to take place in an area where it was less critical. The government prevented WHO from establishing surveillance and investigative activities in the very region that needed them most. The WHO team arrived in Beijing February 23. It took nearly 2 weeks for the Ministry of Health to even begin discussing the possibility of WHO traveling to Guangdong.[20]

Although WHO and the Ministry of Health officials negotiated over travel access, the still unnamed disease took an international turn. Dr. Liu Jianlun, a physician from Guangdong, checked into his hotel room on the ninth floor of the Metropole Hotel in Hong Kong. He had traveled to attend his nephew's wedding—a respite after having spent much of the previous week treating patients with this new atypical pneumonia. By the time he arrived in Hong Kong, he was already feeling ill with fever, difficulty in breathing, and a cough. During his stay on the ninth floor, Liu had little interaction with other guests, and most of that interaction was in passing in the

hallway.[21] Despite such limited contact, 12 people who stayed on that same floor contracted the disease that came to be known as SARS. It is at this point that the disease spreads internationally. Among those who contracted SARS was a Chinese businessman who was en route to Hanoi to visit a textile factory, a Singaporean woman in Hong Kong on a shopping excursion, and an elderly Toronto woman in China to visit friends and relatives. These three unwittingly took the virus with them as they traveled, introducing it in Vietnam, Singapore, and Canada. Researchers later traced over 100 SARS cases in Singapore and 132 cases (and 12 deaths) at Scarborough Grace Hospital in Toronto to the two women from the Metropole Hotel.[22] Liu entered the hospital on February 22 and died the next day. Four hospital workers and two family members later fell ill, and one family member subsequently died.

Reports of atypical pneumonia in China, Hong Kong, and Vietnam continued to emerge through official and unofficial channels to WHO throughout late February and early March. At this point, though, WHO officials could not definitively link the cases. Indeed, there existed no standard definition of the disease. They could not deny, though, that some new disease seemed to be spreading. Surveillance networks were picking up *something*; they did not yet know exactly what it was. They needed to alert public health officials, but they worried about inspiring panic about a disease that they little understood. On March 12, WHO issued its first global alert about atypical pneumonia in Vietnam and Hong Kong. They did not explicitly link the cases, but they did note similarities between the outbreaks and cautioned that health care personnel appeared to be particularly vulnerable.[23] This alert encouraged a resumption of discussions between WHO and the Chinese Ministry of Health over whether WHO teams could travel to Guangdong to investigate the outbreak there.[24]

Three days later, after receiving reports of illness in Singapore and Canada, WHO issued another global health alert. This time, they gave the disease its own name—severe acute respiratory syndrome or SARS—and called it a "worldwide health threat." They also defined its symptoms as a fever, signs of respiratory distress syndrome, and travel to or living in an area with local transmission of the disease.[25]

The alert issued by WHO on March 15 was unique in that it included a warning about travel. It noted that people who had been in areas of the world with SARS cases should be on alert for symptoms of the disease for 10 days after their departure. While the alert did not explicitly restrict travel, it did encourage vigilance.[26] At this point, no one, including WHO, knew what the cause of the illness

was or exactly how it was spread. However, China's Ministry of Health quickly announced that SARS was unrelated to the atypical pneumonia cases in Guangdong.[27] This was a stunning and unprecedented use of biopolitical surveillance by the international community. Instead of going through normal channels and waiting for state governments to implement policies, WHO itself came out publicly to call for people to change their travel plans to prevent the spread of an infectious disease.

Another unique innovation came on March 17. That day, WHO set up global networks designed specifically to share information about SARS. The network included multiple channels, facilitating the spread of essential information among the public and among scientists.[28] In its first report, WHO announced 167 active cases of SARS and four SARS-related deaths.[29] These channels sought to draw upon the global base of knowledge while encouraging the widest dissemination of information. It brought health care personnel and researchers around the world into the process of creating knowledge about this still unknown disease. Instead of centralizing all information and research in one location, the network put doctors and scientists all over the world on the case, keeping their eyes open. This tactic also allowed WHO to get around national health authorities who may have political or other incentives to withhold information. SARS surveillance moved outside official state channels. Now, it internationalized by individualizing its reporting.

Throughout this period, scientists around the world had been trying to uncover the causative agent of SARS. They tried to find evidence of any previously known virus or bacteria responsible for causing respiratory illness in tissue and septum samples. On March 19, WHO announced that these efforts had failed. They admitted that some sort of novel pathogen may be responsible for SARS. Five days later, scientists in Hong Kong and the United States jointly announced that they had isolated a new coronavirus in SARS patients.[30] Using this information, CDC scientists announced on March 28 that they could now definitively link at least 12 cases of SARS in Hong Kong to Liu's stay at the Metropole Hotel. It also helped convince Chinese Ministry of Health officials that Guangdong's atypical pneumonia cases were indeed SARS.[31]

The scientific progress had still not halted the spread of SARS. This led WHO to take an unprecedented step on April 2. It issued another global alert, this time explicitly warning people to cancel all but essential travel to Hong Kong and Guangdong. This was the first time in WHO history that it had ever introduced such a far-reaching travel warning.[32] Although WHO could not prevent anyone from

traveling, its travel warning sent a strong message to the international community. Government officials objected that the warning would decimate the tourism industry. They further worried about the effect on business investment, as they feared that companies would be leery of investing in "sick" cities. Despite these genuine potential economic costs, public health need for increased biopolitical surveillance overrode these concerns.

The responses of the Chinese Ministry of Health and Hong Kong health officials in early April show fascinating contrasts. Hong Kong officials closed schools on April 6 and quarantined over 1,000 people. All household contacts of confirmed SARS cases had to enter quarantine for up to 10 days. They could receive no visitors, and police would conduct daily compliance checks. The quarantined did have some choice in the matter: "they were allowed to choose between confinement in their homes or confinement at holiday camps."[33] Surveillance and quarantine took a prominent role in the region's response. The Chinese Ministry of Health, on the other hand, announced that SARS was under control. They claimed to have established a reliable surveillance network and that there were only 22 cases of SARS in Beijing on April 9. They allowed WHO teams in Beijing to verify these numbers by giving them permission to visit any hospital in the city—except for the military hospitals.[34] Frustrated by the government's lies about SARS, a doctor at a Beijing military hospital went to international media sources. He said that, in contrast to the government's official numbers, he knew of at least 120 SARS cases just at Beijing's three military hospitals.[35]

By mid-April, WHO's frustration with China's inadequate response to SARS reached its peak. WHO lacked the ability to impose fines on a national government or violate national sovereignty, but it did have the power of shame on its side. By calling a government out for its failures, WHO could seek to change a state's behavior. On April 16, WHO took this step with China. It publicly accused the Chinese government of lying about the number of SARS cases and chastised it for implementing thoroughly inadequate surveillance measures. It further expressed concern about the overall state of public health in China.[36] Two days later, *Time* magazine joined the chorus. It published an article blaming the Chinese of trying to hide SARS patients. They recounted a story where hospital officials put SARS patients in ambulances that drove around the city while WHO teams visited the hospital.[37]

The shaming apparently had the desired effect, and quickly. The leader of the Chinese Communist Party, Hu Jintao, declared a nationwide war on SARS and demanded an honest accounting of both the

number of SARS cases and the steps being taken to combat its spread.[38] The real turning point came on April 20. That day, the Information Office of the State Council held a press conference in Beijing. Uncharacteristically, China Central Television broadcasted the press conference live. Viewers noticed that the press conference was missing two expected participants; neither the Minister of Health Zhang Wenkang nor the mayor of Beijing Meng Xuenong was present. It quickly became known that their absence was because they no longer had their jobs. Both had been fired for "negligence in work" related to SARS. With this move, the Chinese government sent the message to the broader bureaucracy that covering up SARS cases would no longer be tolerated and that officials would be held accountable for their actions (or lack thereof) in combating SARS.[39] Officials also announced the imposition of new, stringent surveillance and quarantine measures to stop the spread of SARS. Vice Premier Wu Yi took over the Ministry of Health with special responsibility for overseeing the government's SARS policy. Widely viewed as a savvy politician with a good reputation, Wu Yi quickly established a SARS control center to coordinate activity and received a budget of 2.6 billion yuan to direct her programs.[40] Despite the previous denials and foot-dragging, the Chinese government put its full energies behind the containment of SARS once it got on board. It greatly increased the scope of its surveillance activities.

China's admission was encouraging, but SARS continued to spread worldwide. A new WHO travel advisory on April 23 extended the warning against nonessential travel to include Toronto. WHO included Toronto because of the magnitude of the city's outbreak (143 cases and 23 deaths), the presence of local chains of transmission, and fears over travel-related importation of cases.[41] The Canadian government reacted swiftly and angrily. They lobbied WHO officials to remove the city, arguing that the epidemic was largely under control and that they would take more proactive measures to screen travelers to prevent reimportation. The argument apparently persuaded WHO officials, as they lifted the travel warning only six days after issuing it. Others, though, saw this as less of a sign about Canada's commitment to surveillance and more a sign of international racism. Imposing a travel advisory against Asia was fine because it was the dirty and diseased "Other," but treating a white North American country in this manner was unacceptable because it was clean and modern, according to this argument.[42]

China's new commitment to fighting SARS quickly manifested itself. Surveillance systems dramatically improved. Quarantine and

isolation measures became part of the country's public health arsenal. The government built a new, specialized hospital over the course of a weekend, and it specially designated particular hospitals for SARS patients. Suspected cases were transported to these hospitals, which were equipped to prevent nosocomial transmission. By May 7, all SARS cases had been moved to these facilities, and the government quarantined 18,000 people in Beijing. The following day, the number of SARS cases in Beijing peaked. As one commentator noted, "Traditional basic disease-control strategies of surveillance, quarantine, isolation, and infection control proved to be adequate to stop transmission."[43]

This commitment was evident in other ways, too. It allowed WHO officials to travel more freely, and it held its officials accountable. The same day that SARS cases peaked in Beijing, government officials announced that they had fired or reprimanded more than 120 officials for their "slack" responses to SARS. They mobilized 80 million people in Guangdong to clean houses and streets in an effort to prevent further transmission.[44] They also sought to control the dissemination of information about the disease. The *Beijing Morning News* published a report on May12 about new reporting regulations. The rules mandated timelier reporting about SARS and other infectious diseases through official channels, though they were silent about the requirements to share that information with the public. Under these new rules, spreading rumors about SARS could land the person responsible up to five years in prison.[45] During the second week of May alone, Chinese police arrested 107 people for rumor-mongering about SARS through text messages.[46] Greater cooperation with WHO even led to a joint press conference in Beijing on June 12. Two weeks later, WHO removed Beijing from its travel advisory.[47]

By July 5 when WHO declared SARS under control worldwide, 8,096 people had contracted the disease, and 774 had died. SARS had appeared in 29 different countries. Some countries, like Switzerland, South Africa, and Indonesia, had only one or two cases. China, with its 5,327 cases, had the most by far. Hong Kong, whose cases were reported separately to WHO officials, followed with 1,755 cases. Taiwan,[48] Canada, and Singapore rounded out the top five, each with more than 200 cases.[49]

CHINA'S RESPONSE TO SARS

China holds the dubious distinction of having had the highest number of SARS cases in the world. Huang comments, "History is full of

ironies: the [SARS] epidemic caught China completely off-guard forty-five years after Mao Zedong bade 'Farewell to the God of Plagues.'"[50] What contributed to its high number of cases? Aside from epidemiological features that allowed SARS to first emerge in China, political and institutional factors both impeded and facilitated a rapid response to SARS. The Chinese government initially downplayed the severity of SARS and paid little attention to its spread. Once it committed to addressing the disease, though, its response was rapid and impressive. It sought to remedy its earlier failure to engage in needed biopolitical surveillance activities.

One significant factor was the deterioration of the country's public health system. In 1978, China's public health system was vaunted as a model for the rest of the world and helped to inspire the "Health for All by 2000" movement. It showed that governments could provide basic health care equitably. Twenty-two years later, China ranked 188th out of 191 for fairness in its financial contributions to health.[51] In the 1950s and 1960s, China gained international renown for its so-called barefoot doctors. These medical professionals formed the backbone of the public health system, particularly in the rural areas where the vast majority of the population lived. They traveled around, providing basic rudimentary care to all regardless of ability to pay. This system contributed significantly to the country's substantial increase in life expectancy. In 1949, average life expectancy was 37. In 1990, it had nearly doubled to 70.[52]

Over the years, though, the Chinese government reduced its commitment to public health. After Mao's death, the government shifted funds away from long-term infrastructural investments like public health and toward job creation. With the central government contributing less money to public health, local governments and individuals had to pay more, and the overall resources devoted to public health declined. The central government would still introduce public health mandates, but it rarely provided the funds to implement these mandates. As a result, services became increasingly sporadic.[53] The barefoot doctors disappeared, replaced by a privatized system of fee-based care. As a result, preventative care lost out, and immunization and outbreak–response programs received few funds. Infectious diseases that had nearly disappeared in the 1960s and 1970s like tuberculosis rebounded.[54]

The weakness of the country's public health system made it unprepared to respond to a novel emergency like SARS. It lacked the local surveillance capabilities that could identify the spread of a new disease in a timely and efficient manner. It did not have the resources to trace

the contacts of SARS patients—a problem further compounded by rapid industrialization and migration to urban areas. Even if the government had wanted to implement a strong surveillance system when SARS emerged, it would have likely lacked the resources and personnel necessary to make that a reality.

Legal impediments also contributed to how China responded to SARS. The National Law on Communicable Diseases Prevention and Control governed infectious disease control and reporting in China, but its last updating had occurred in 1989. The law established various categories of diseases, based on their severity, and specified the level of government that was responsible for reporting on and managing of each category. It created timeframes for ensuring the timely reporting of diseases up the government hierarchy. In general, though, the law placed most of the emphasis for disease control and prevention at the county and provincial level. The central government was the last step in the reporting process, and it had little responsibility for carrying out control and prevention measures.[55] This law discouraged reporting and introduced structural impediments that made it difficult for provinces to share information with each other or to get the attention of national officials.

An additional law played a significant role in explaining the government's initial silence on SARS. The Implementing Regulations on the State Secrets Law declared that any infectious disease outbreak was officially a state secret until the Ministry of Health or its designee officially announced the disease's presence.[56] This law traced its origins back to Mao, who feared that the United States and the erstwhile Soviet Union would use disease epidemics as propaganda tools to undermine the Chinese government.[57] Like the National Law on Communicable Diseases Prevention and Control, the Implementing Regulations established a rubric for classifying infectious diseases based on severity. SARS was *jia lei*, or in the highest level secret category because it was a new, widespread infectious disease. As such, it was a state secret. This significantly hampered efforts to learn about or disseminate information about it. Lower level officials could not disclose the disease's presence, or even its existence, until either the Ministry of Health or the State Council disclosed it first. If the central government did not admit the disease's presence, then no other body could do so. Any local official who did disclose it would be liable for prosecution for exposing state secrets.[58] In the meantime, local and provincial officials could not share information with each other. Each municipality where the disease appeared essentially operated in the dark, unaware of how the other municipalities were handling the

disease—or even whether the disease had appeared in other places. With SARS, the Ministry of Health did not declare it a statutory epidemic until April 8.[59] In other words, the government essentially banned any discussion or information-sharing about the epidemic for nearly five months.

A third factor explaining China's SARS response was structural. Between November 2002 and March 2003, when SARS first began to emerge and spread, China was undergoing a massive political transition. Jiang Zemin had stepped aside, and Hu Jintao and Wen Jiabao had taken over. Ensuring an orderly shift of power and preventing political squabbling thus captured a significant amount of the political leadership's attention.[60] Huang observes, "To publicly acknowledge the outbreak at this crucial juncture [between November 2002 and March 2003] would not only risk causing socio-economic instability, but also sullying the party's image and legitimacy among the people."[61] Premier Wen Jiabao warned in April 2003 that SARS could affect the country's economy, international image, and social stability.[62] The Chinese government bases much of its legitimacy on its ability to provide both economic development and social stability. The outbreak of a new infectious disease, and the government's inability to do much about it, could challenge that legitimacy. This helps explain why WHO's public shaming of China was so effective; it called the government's legitimacy into question, and did so on the international stage.

Within the central government's bureaucracy, the Ministry of Health was a relatively weak player. Since it had few resources to offer provincial and local officials, it found itself largely subordinate to local health departments.[63] Its operations depended upon information trickling up from these lower levels. Perversely, though, the lower level officials had strong reasons *not* to share that information with higher authorities. The central government would reward and punish local offices based on their reports. Reporting a disease outbreak would reflect poorly on those local officials, as they would be blamed for not working hard enough to prevent the outbreak. An office could lose funds, and officials could lose their jobs. Conversely, hiding cases made a region appear healthier, and therefore could lead to more resources or a promotion. This meant that "bureaucrats at all levels [had] economic incentives to under-report SARS cases."[64] In such a situation, there exist powerful reasons to remain silent.

The government's official silence did little to squelch public discussion of the outbreak. Information and rumors about SARS spread through casual conversation and through text messages. Some

claimed that the disease was an element of the People's Liberation Army's biological weapons program gone awry. Others blamed the U.S. government and said that it was testing a new chemical weapon on China.[65] Later surveys found that, during the months that the government maintained an official silence, 40.9 percent of China's urban residents had heard about SARS through unofficial means.[66]

SARS SURVEILLANCE IN PRACTICE

Controlling the world's first SARS epidemic was, in some sense, an experience in public health time travel. Sophisticated twenty-first century scientific techniques may have allowed researchers to identify the causative agent of SARS relatively quickly, but it did little to actually stop the disease's spread. To do that, the international community turned to distinctly old school techniques. Doberstyn reminds us, "Most important in controlling SARS were the 19th Century public health strategies of contact tracing, quarantine, and isolation."[67] In other words, public health surveillance ultimately saved the international community from dealing with an even more explosive SARS epidemic. At the same time, though, such surveillance provoked anxiety about its implications and applications. Overly broad application of quarantine orders and a lack of recourse or appeal for those quarantined made programs appear like arbitrary power grabs. Brookes notes, "Yet while this provision was giving the impression that those under quarantine were potential criminals, it was also clear that they were innocent of any wrongdoing."[68] SARS gives us an example of both the efficacy of surveillance and quarantine and its limitations when not combined with transparency and respect for human rights.

To stop the spread of SARS, officials needed to know who was already infected and with whom they had come into contact. The infected could be isolated—an especially important step when the exact means of transmission remained unknown. Those who had been in close contact with the infected could be monitored closely. Since SARS patients did not appear to be contagious until symptoms appeared, vigilant surveillance could prevent additional cases from appearing. The National Intelligence Council lauds the international community, particularly WHO, for its aggressive oversight for helping to arrest the spread of SARS. "The first line of defense in arresting the spread of SARS," the Council wrote in its 2003 assessment of the outbreak, "has been the success in identifying potential cases."[69]

Overly broad application of surveillance and quarantine techniques can have the opposite effect, though. It can drive people underground,

fearful of the consequences. It can tar entire groups as diseased and unhealthy and foster discrimination. It can discourage rational thought and preparation. Wynia cautions,

> Quarantine done poorly can induce people to mistrust and avoid the public health system—and if this happens, then quarantine is not merely ineffective, it can actually feed the spread of the disease as frightened people break the quarantine, flee, and disperse into the population.[70]

If people feel that surveillance and quarantine is stigmatizing, they will avoid the system. Such avoidance makes it that much more difficult to find the very people who are at risk of spreading the disease.

Did this happen with SARS? Lawson and Xu suggest that it did. Surveillance and quarantine systems for this new epidemic, they argue, unnecessarily divided groups. Government officials used surveillance and quarantine as a means to separate groups by drawing upon and reinforcing exclusive identities. They assert,

> The stronger the individual's institutional ties, the greater certainty institutional leadership had that the affiliated individuals would be reliably compliant . . . "strangers"—those with fewer obligations—were unaffordable sociopolitical risks during an emergency like SARS, regardless of their apparent health.[71]

Surveillance and quarantine created insiders and outsiders, and officials drew upon those loyalties to encourage compliance. Insiders could be manipulated into allowing intrusive oversight or voluntary quarantine in order to maintain their status as insiders. Outsiders were dangerous because you could not be sure of their background or their loyalties.

In some quarters, concerns about surveillance and quarantine were more quotidian and practical. Surveillance and quarantine measures could signal to the rest of the world that there was something wrong in a particular place. Early warnings could have the perverse effect of scaring people into going underground and avoiding public health authorities. That signal could then in turn decrease enthusiasm for investing in or conducting business with a country. Investors could take surveillance and quarantine measures as a sign that their investments would not be safe and secure. Such decisions could have deleterious effects on national economies that are heavily dependent upon foreign trade and investment. "In a world where international trade and investment are the main engines of prosperity," Abraham reminds

us, "a disease, or any other condition that discourages foreign traders and investors from visiting and doing business is a kiss of death."[72]

Fears arose that those governments, once they acquired this sort of power, would loathe giving it up. Increased biopolitical surveillance gives the government a higher level of control over the citizenry and its actions. Critics wondered whether a government—any government—would willingly cede this increased power after it was no longer deemed "necessary." Lawson and Xu ominously highlight, "Both countries [China and Canada] discussed making certain coercive emergency powers permanent. Some even played physical survival and public order against core political values."[73] Government leaders could thus manipulate the political discourse to create a false dichotomy between civil rights and public health protection, arguing that they needed these rights-denying powers in order to keep people healthy.

Despite these arguments, the public is not uniformly opposed to surveillance and quarantine. Rather, their concern focuses on whether those people under surveillance and quarantine are being cared for and having their needs met.[74] Surveys in the United States and Canada found that people believed in the rationale for surveillance and quarantine during SARS and that they would comply with any such orders. Ninety-six percent of Canadians and 84 percent of Americans said that people with SARS needed to be quarantined, and 95 percent in both countries said that they would agree to be quarantined for 2 to 3 weeks if they were exposed to SARS. Among those who had been quarantined or under surveillance in Canada, approximately one-quarter called the experience a major problem because of its emotional toll and their inability to get paid while under quarantine.[75] Respondents in Singapore, one of the countries that had been hardest hit by SARS and had implemented some of the most stringent surveillance and quarantine measures, showed a similar willingness. More than 70 percent said they were willing to accept a quarantine of longer than 10 days after close contact with a SARS patient.[76] These findings reinforce the idea that people are willing to accept surveillance and quarantines if they feel they are justified, and if they will not be left to fend for themselves during quarantine.

To understand how surveillance and quarantine during the SARS epidemic balanced concerns about public health and human rights, we can look to the experiences of various countries in 2002 and 2003. Some countries took aggressive steps to introduce overt surveillance and quarantine measures and found a measure of success. Others resisted introducing these measures as long as they could. Some

consciously strove to ensure respect for human rights; others considered human rights concerns subordinate to protecting community health. These experiences, and how the international community responded to various efforts, are instructive in showing both the efficacy of biopolitical surveillance and the need for respecting human rights.

People's Republic of China

China's initial response to the SARS epidemic was lackadaisical at best. Government officials imposed an official silence, banning media sources from reporting on the new illness and denying the disease's severity to international inquiries. With their televised press conference on April 20, 2003, the Chinese government's attitude and actions underwent a wholesale, radical change. Gone was the disinterested, secretive approach. In its place, the government introduced an active and overt surveillance and quarantine program to prevent the further spread of SARS. These programs operated at both the national and the local level, and engaged average citizens in the monitoring of their friends and neighbors for the dreaded disease.

At the national level, one of the government's first actions was to set up a national SARS coordinating center. The Ministry of Health sat at the center of the government's overall response to the disease. Provinces and municipalities also established their own local SARS headquarters.[77] These offices mobilized both bureaucrats and local residents to get involved in combating the epidemic.

Fever checks quickly became one key element of the government's surveillance program. Officials would require people at airports, train stations, bus terminals, and highways to have their temperatures checked.[78] A fever over 38 degrees Celsius, a key symptom of SARS, could lead to quarantining for up to 21 days.[79] Fever checks also occurred at hospitals for people coming to the facility for any reason.[80] Students had to pass daily fever checks in order to be allowed into their classrooms in some areas, while officials closed schools completely in heavily afflicted areas.[81] The government conducted more than 14 million fever checks, though they only discovered 12 new SARS cases in the process.[82]

Upon discovery, the Chinese government sought to prevent SARS patients from exposing others to the virus. Confirmed SARS patients were sent to specially designated treatment centers by ambulance, and those ambulances received intense disinfectant treatments repeatedly each day. Those who had come into contact with confirmed SARS

patients found themselves quarantined in their homes for up to 21 days, and potentially exposed individuals received similar treatment.[83] Over the course of the SARS epidemic, over 130,000 were placed in quarantine. Of those, 133 eventually developed the disease. In other words, 1,000 people entered quarantine for every case of SARS found.[84] This led to charges of overkill and violation of the right to free movement.

Fear of quarantine and surveillance encouraged some people to subvert the system. Reports of people fleeing urban and industrial centers emerged, presumably believing that rural areas would not have the same level of intrusion and oversight. Quarantined patients and health care workers sought to escape from hospitals—the patients to rejoin their families and the health care workers to avoid contracting SARS. In response, hospital officials allegedly forcibly locked patients, doctors, and nurses in the facilities to prevent escape. They also imposed fines on those who broke the quarantine, and encouraged neighbors and community residents to report violations of quarantine.[85] Reports often came through a 24-hour phone hotline established expressly for people to report suspected SARS outbreaks. In some cases, people even turned themselves in by this phone line when they feared they had contracted the disease.[86]

These national-level policies had a dramatic effect on the country's social fabric and travel patterns. Travelers became suspicious individuals, as they could potentially bring the virus with them to previously unafflicted areas. Officials cancelled many public events, fearful that such gatherings would provide the virus with an ideal transmission environment. Perhaps most dramatically, the government cancelled the annual week-long May Day holidays. Some local events still took place as usual, such as the flag-raising ceremony in Tiananmen Square, but the number of attendees declined dramatically. Traditionally, many families traveled during the May Day holidays to visit relatives. In particular, urban dwellers would return to their rural homes and families. In 2002, an estimated 80 million people traveled during the May Day holidays.[87] Cancelling the holidays would decrease the number of people traveling throughout the country. It would also allow for more vigilant biopolitical surveillance, as it would be less likely that people would "disappear" during the week. Keeping people in their same location would make it easier for the government to check up on them.

The Chinese government also limited international travel. Authorities banned Chinese citizens from traveling to Thailand, Malaysia, and Singapore during the SARS outbreak. This had less to

do with the epidemic's severity in these states and more to do with retaliation for these countries banning Chinese tourists.[88]

To encourage compliance with the SARS-related surveillance and quarantine measures, the Chinese government introduced severe fines and penalties for violations. Knowingly spreading SARS could lead to capital punishment. Breaking quarantine or evading mandatory medical examinations such as fever checks could lead to a seven-year prison sentence if convicted. Government authorities also found themselves subject to potential jail terms. "Insufficient vigilance in combating SARS" could be punished with a three-year prison sentence.[89]

Local communities sometimes added to the surveillance measures instituted by the government. These techniques generally allowed for a higher level of oversight and placed local citizens squarely on the frontline of monitoring their neighbors for SARS. In Shenzen, for example, city authorities shuttled beggars and disabled homeless persons to the outskirts of town.[90] They feared that those individuals were either more prone to harbor the virus and thus spread it throughout the community or that they were more susceptible to catching the virus in the first place and thus may provide a transmission route into the larger community (or both). Local SARS committees throughout China established roadblocks on the main streets leading in and out of their village or neighborhood.[91] Such efforts sought to keep SARS out of areas where it had not yet appeared, as well as playing on the fears that foreigners and strangers could bring the disease with them—perhaps even maliciously.

The Chinese government's response, once it got going, was fairly punitive. Decision-making processes remained opaque, offering the public little insight into who was making policies and why. Frequently changing policies also undermined public confidence and increased confusion. Also evident is a lack of respect for or consideration of human rights principles.

Hong Kong

Though part of China, Hong Kong's status as a Special Administrative Region gave its leaders extra flexibility in dealing with the SARS threat. In addition, Hong Kong had 1,755 cases of SARS—the second highest number of cases in the world. Given its high population density and its important role as a center for business and travel, stopping the spread of SARS quickly took high priority. As we have already seen, one SARS patient staying at a hotel in Hong Kong managed to

infect 16 other guests, and those people spread the disease to Vietnam, Canada, and Singapore.

By late March 2003, Hong Kong officials recognized the severity of the SARS epidemic in their region. Hong Kong recorded its first case of SARS when a 26-year-old man checked into a hospital March 4 (though public health authorities did not receive notification of the case until March 10). Within 3 weeks, WHO officials had recorded 286 cases of SARS and 10 deaths, and local transmission clearly still occurred. Government authorities began toying with the idea of imposing a mandatory quarantine, an idea that became increasingly appealing after Singapore did so, but they lacked the political authority to enforce such an order. Hong Kong's public health laws did not make SARS a reportable condition, and existing legislation did not offer the government authority to detain people or restrict travel on the basis of infection.[92] Despite this initial limitation, many felt that they had no choice but to try.[93] The possible fallout from overstepping their political boundaries, they felt, would be outweighed by the positive protection of its citizenry from the largely mysterious new disease. Further, they believed that these measures would allow them to better provide care for those who needed it.

On March 27, the Hong Kong government took action. Chief Executive Tung Chee-hwa invoked the Quarantine and Prevention of Disease Ordinance after amendments added SARS to its list of reportable conditions.[94] The government went even further on April 15, when it amended the Prevention of the Spread of Infectious Diseases Regulations. This allowed public health officials to prevent travelers from leaving the area, perform fever checks, and inspect travelers entering the area for SARS. With these legal changes, the government had the authority to introduce more sweeping surveillance and quarantine measures for both SARS patients and their contacts. The government eventually placed 1,285 people under medical surveillance and in-home quarantine by the time the epidemic subsided. Of those people surveilled and quarantined, more than half the people received daily material and financial assistance from the government.[95]

The Amoy Gardens apartment complex was perhaps the most prominent site for Hong Kong's biopolitical surveillance and quarantine. This area alone was home to at least 321 cases of SARS—approximately 18 percent of the region's entire caseload. Of these cases, one apartment building known as Block E was responsible for over 40 percent of the complex's cases. As a result, the government announced in-home quarantine for all residents of Block E on

March 31. Under this order, authorities declared that residents could not leave their apartments for up to 10 days as epidemiologists and researchers sought to discover how and why so many cases spread throughout the complex. To assuage fears of abandonment and neglect, authorities promised to deliver three hot meals to each resident each day, ensure the adequate provision of any essential supplies, and care for any household pets.[96]

This strategy quickly ran into problems. Investigators soon discovered that the presence of Block E's residents in their apartments severely hampered their ability to track down the source of infection. The residents got in the way. The government responded by shifting course, removing all residents to an isolated holiday camp for the next 2 weeks.[97]

While the residents of Block E were in isolation, the Hong Kong government decreed that any and all contacts of confirmed SARS patients must enter a 10-day in-home quarantine. Responsibility for contact tracing fell to the police.[98] The government would make sure that the quarantined would have their basic needs met, but they would remain under constant surveillance for the development of any symptoms of SARS and were subject to daily compliance checks. Failure to comply with the in-home quarantine orders could lead to jail time. Indeed, officials sent official letters to 26 noncompliant Hong Kong residents, warning them of severe penalties if they failed to abide by the order. In the end, all did, and none were charged with a crime.[99]

In Hong Kong's case, we see greater transparency than in China. The government took more proactive measures to keep the public informed about its policies, though the policymaking rush rarely allowed for substantive input from the public. We also find the government seeking to ensure that the basic needs of the quarantined and surveilled people are met. It sought to reassure a nervous public that they would not be abandoned by the system if they were being watched. Such a strategy sought to encourage compliance without resorting to overly harsh measures.

Singapore

Singapore's political system approaches questions of political rights and privacy far differently than other countries. While Hong Kong authorities scrambled to revise their legal code to allow for more stringent surveillance and quarantine orders, Singaporean officials already possessed such powers. Indeed, the city-state's political

traditions subordinated individual rights and liberties to promoting the greater good of the community. This allowed the government to introduce overt and potentially coercive surveillance and quarantine measures with haste when they first discovered the outbreak of SARS. The 238 cases of SARS rank Singapore fifth in the epidemic's severity, but its incredibly high population density stoked fears of an even more widespread epidemic if the virus circulated freely.

Foreign observers frequently noted the almost-complete disregard among Singapore's political leaders for individual rights in responding to SARS. A *Toronto Star* editorial is typical in this regard. It lamented that Singaporeans were living "under virtual house arrest" and subject to "even more intrusive surveillance" during the epidemic.[100] At the same time, though, many expressed at least grudging admiration for the government's ability to adopt effective measures quickly. Its means may have offended some sensibilities, but those means appeared effective. McCullagh reflects, "Singapore's nanny-state meddling and unabashed authoritarianism may have spared it the worst . . . [thanks to its] single-minded determination to take whatever steps necessary, with scant regard for such individual liberties as the right to travel and associate freely."[101] An article in Singapore's *Straits Times* largely agreed. "If this government chooses to be 'draconian,' " it observed, "so be it. Because all it takes is one person or just a handful to be blissfully ignorant or deliberately defiant, and we're down the slippery slope."[102] This article crystallizes the dominant belief among Singaporean authorities that the greater community good of stopping SARS through any means necessary outweighed individual concerns about freedom of movement and association, at least temporarily.

Interestingly, the concerns about privacy and human rights over Singapore's response to SARS were largely external. "A number of voices from other countries voiced the opinion that Singapore was behaving like a police state—though these opinions tended to originate from countries that had few or no SARS cases."[103] Singaporeans, on the other hand, largely accepted the necessity of the government's surveillance and quarantine programs. Nearly 72 percent stated that they would accept government-mandated 10-day quarantine after contact with a SARS patient, and two-thirds either agreed or strongly agreed that they had opportunities to share their opinions about the appropriateness of surveillance and quarantine with government officials.[104]

Singapore's anti-SARS strategy placed prominent emphasis on surveillance, isolation, and containment. Hospitals established isolation

wards to keep the SARS patients from mingling with other patients. Visitors could not enter the isolation wards. To prevent health care workers from spreading the virus, doctors and nurses could only work at one hospital. Prior to the outbreak, many would work shifts at different clinics and hospitals over the course of any given week. The government established fever checks and set up thermal scanners throughout the island. Hospital workers had to have their temperatures taken at least twice a day to ensure they did not have a fever. Taxi drivers, government bureaucrats, food servers, and hotel staff did so once daily and wore stickers that ensured the public that they were free from fever.[105] Schools, markets, and public facilities closed. In response, the government set up two special television channels—one devoted to providing school lessons to children who could not attend classes, and the other to spreading information about SARS, and how to prevent it. Officials encouraged frequent handwashing, the use of masks, and proper nutrition to prevent exposure and boost immune systems to fight off any infections.[106] They also distributed more than one million SARS toolkits, including thermometers and facemasks. Thermal scanners, modified military equipment designed to detect heat, went up at the airport to scan travelers for fevers too.[107]

Quarantine orders extended to more than just Singaporean citizens. Foreigners coming to Singapore for work found themselves subject to special requirements. These regulations took on a peculiar class dimension, though. Construction workers and manual laborers, many of whom were from India and Malaysia, were quarantined for 14 days on a remote part of the island. Foreign professionals, on the other hand, were merely asked (not required) to voluntarily quarantine themselves for 10 days.[108] The disparity in treatment angered some, but government officials showed little inclination to alter the policies already established.

The Singaporean government, like others, relied upon its public health legislation to justify its surveillance and quarantine programs. On March 17, 2003, it made SARS a notifiable disease under the Infectious Disease Act. This notification gave it the authority to mandate with government orders quarantine and isolation, compulsory fever checks and medical treatment for people, and cooperation among hospitals and clinics. A week later, it officially invoked the Act. Under its provisions, Singaporeans had an affirmative obligation to prevent the spread of SARS to others by not engaging in activities that may expose others to the virus.[109] This action allowed the government to place anyone exposed to an infected SARS patient in

isolation for up to 10 days. It also introduced penalties for violating isolation and quarantine orders. Fines for the first offense reached as high as $5000, an amount doubled for the second offense.[110] They also threatened to require violators to wear electronic monitoring bracelets.[111] In April 2003, the government again increased the penalties for violating quarantine orders. The first offense of noncompliance could lead to a jail term of 6 months, a $10,000 fine, and seizure and destruction of personal property.[112]

When new SARS cases emerged, the Singaporean authorities responded quickly and aggressively. A few cases emerged among workers at the Pasir Panjang Wholesale Market. As a result, the government instituted two-week in-home quarantines for 2,000 people who worked at the market between April 5 and 19. During this quarantine, more than 50 nurses made house calls to monitor the health of the isolated workers. As compensation, the isolated workers received a daily allowance of $41.[113] In the end, the government ended up quarantining 5,798 individuals out of a total population of 4 million.[114]

While Hong Kong assigned the police to trace the contacts of SARS patients, Singapore gave this task to the military.[115] To check for compliance, Singaporean authorities installed cameras near the front doors of those quarantined. Government officials could require persons under a quarantine order to present themselves in front of the camera at any time.[116] Such a system allowed the government to keep tabs on the quarantined while minimizing the chance that someone would inadvertently pass the virus in the course of a compliance check.

Ironically, a government that many people perceive as hostile to individual human rights has one of the best records of incorporating human rights principles into its SARS-related biopolitical surveillance activities. It took an active role in ensuring that people under surveillance and in quarantine still had their basic needs met. It offered a small stipend to those who could not attend work. It also introduced a very active information-sharing program, kept citizens up to date on prevention techniques and tried to allow life continue as normally as possible in the face of a new epidemic.

THE COSTS OF SARS SURVEILLANCE

SARS was costly on many fronts. It exacted a steep economic toll, particularly on a region of the world just then finally recovering from the devastation of the Asian financial crisis of the late 1990s. More than that, though, critics charge that SARS led states to abrogate

fundamental rights, overextend their power and oversight into the personal lives of their citizens, and disrupt the social flows that make society flourish in a coherent manner. Governments used the specter of an infectious disease threat to grab power. Though they alleged that these measures were temporary, critics of biopolitical surveillance see little evidence that governments are willing to cede their powers once the outbreak passes. Instead, they seek to convince people that they must constantly be on guard and subject to these extraordinary powers because we can never know when the next epidemic will emerge.

On a financial level, the cost of SARS was indeed high. The National Intelligence Council estimated that the outbreak cost ASEAN countries (Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, and Vietnam) upward of $30 billion. Most of this came from severe declines in the tourism, service, aviation, and restaurant industries. In China, Hong Kong, Singapore, and Vietnam, the decline in tourism alone totaled $10 billion and 3 million jobs.[117] The Asian Development Bank estimated that SARS cost the Asia/Pacific region $59 billion. For China alone, the figure was $17.9 billion, and Hong Kong's economy lost $12 billion.[118]

More consequentially for critics, though, SARS disrupted political and social flows and gave some governments far more intrusive power over their citizens. Rightly or wrongly, state authorities perceived SARS as an existential threat to their very being. In response, they instituted extraordinary measures designed to protect and extend their authority. Basic expectations like freedom of movement and freedom from intrusive examinations fell by the wayside. Governments took advantage of fear and told citizens that only by *ceding* their rights would they be safe. Caballero-Anthony writes,

> Within a short but significant period, SARS had drastically altered many lies. People's mobility within their environment, normally take for granted, suddenly changed as the psychological fear of possible exposure and infection in public places loomed…This concern prompted governments to take drastic steps to stem the tide of panic that threatened to disrupt public life.[119]

The chaos associated with uncertainty and tumult surrounding a previously unknown disease gave states the opportunity to further their power while most citizens were too distracted to notice.

To make matters worse, critics allege, the governments made citizens complicit in the loss of their rights and freedoms. By appealing

to the greater good and framing SARS as this existential threat, they convinced people that it was in their self-interest to give up their rights. The larger community demands that you cede your individual concerns and needs. Health care facilities became holding cells. Travel was now a danger, and strangers elicited fear and suspicion. Submitting to spot fever checks became a patriotic duty, not an awkward intrusion by the government literally into the bodies of its citizens. SARS "require[d] one to contribute to the eventual containment of the epidemic by checking oneself into the isolation wards of the hospital, an institution of both cure and imprisonment."[120]

Such complicity makes it harder for citizens to object later to the loss of their rights. After all, their rights have not been stolen or lost so much as donated or ceded. Frequently, nationalism played a significant role in the framing of these appeals. Critics charged that authorities twisted the logic and language such that giving up your rights became part of your patriotic duty. Singapore exemplifies this case:

> In the past, Singaporeans were urged by the People's Action Party to submit to state policies as they were for the common good of the people. Ethnic, religious, and class differences were put aside so that all can reap the benefits of economic progress in the nation-state. The "war" rhetoric used on SARS echoed a similar approach to galvanize Singaporeans to work toward a common goal during this period of "crisis."[121]

This is not a rhetoric of overt coercion or mandatory changes. It is instead a rhetoric that seeks to appeal to our "better nature." If the nation is in crisis, then who *would not* want to help, even volunteer to do so? It takes on a morality dimension. Individual sacrifice of rights for the populace's collective good becomes a moral obligation of the citizenry. The "healthy body" becomes the measure of an individual's moral worth within the polity.[122] Your political standing within the government depends crucially upon your willingness to forego your rights to combat SARS.

This raises the question, though, of why the state is taking on this responsibility. What is it about SARS that necessitates the expansion of *state* power? There is no inherent reason why nongovernmental bodies could not organize some sort of response. They could appeal to the community's higher morals, organize to prevent the spread of disease, and distribute information and resources to the public. Many of the responses to outbreaks of polio and influenza in the United States during the twentieth century, and often the responses that

elicited the most cooperation, came from religious groups, private charities, and civil society organizations.[123] These groups can offer services and encourage cooperation without requiring, or even desiring, citizens to give up any of their rights.

Huat offers two answers. First, he argues that the state is the only body with the power and resources necessary to carry out the seemingly essential elements of a SARS containment strategy—contact tracing, enforcing quarantine, detaining travelers. Nonstate entities may be able to carry out one or two of these functions, but the state alone has the ability to coordinate these activities and carry them out in a holistic fashion. These actions, in turn, make the state even stronger, and the rights of the citizens become weaker. Second, only the state can create new laws and amend existing ones.[124] By relying on these laws, the state can naturalize its response; it is simply carrying out its legal responsibilities. When it amends laws, it claims to do so only in response to unforeseen consequences. No one could have anticipated SARS, so existing laws on the books do not include the disease. Therefore, the state argues, we are simply updating our regulations so as to apply *existing* ideas to a *novel* situation. In this way, the state can portray its actions not as a power grab, but rather as a reaffirmation of existing powers that the citizens have already granted to the state.

Together, these two reasons allow the state to burnish its credentials as the protector of citizens. The government is simply doing what it must in order to satisfy its most basic responsibility—the protection of its people.[125] Few people would want to give up the protection of the state or feel vulnerable, so they cede their rights without thoroughly considering the consequences. They get duped into allowing the state to get stronger while they get weaker. The state deploys a rhetoric that makes a disease like a SARS a threat to national security—just like nuclear proliferation, terrorism, and weapons of mass destruction. Caballero-Anthony writes, "Given the multidimensional threats to national security posed by infectious diseases such as SARS, it is imperative that states treat these diseases within a security framework."[126]

It is because of the nationalist and patriotic fervor that goes along with many of these appeals that xenophobia begins to play a role. Foreigners are not part of "our" community; therefore, we cannot guarantee that they are not dirty and diseased. Instead, we must assume that the "Other" brings illness and disease until it is proven otherwise. This, critics charge, is a necessary corollary to increased biopolitical surveillance and quarantine. If you make surveillance so

central to your protective strategy, you heighten suspicions about those who cannot or will not submit to surveillance. You raise doubts about the ability of outside actors and foreign states to properly keep an eye on their own citizens.

During the SARS epidemic, ethnic Chinese around the world found themselves suspected of carrying the virus. The Chinese themselves became "risky," regardless of any actions that they may or may have not taken.[127] In Canada, and especially in Toronto, Chinese-Canadians reported being shunned. Chinese restaurants and Chinatown neighborhoods in large cities saw steep declines in business, and schools and trade fairs sought to ban Chinese nationals from attending—even when those individuals agreed to submit to surveillance or provide medical records to attest to their health.[128] At the University of California at Berkeley, officials refused to admit students from Asia out of fear of SARS. They announced this policy while cities in both China and Canada were under WHO travel advisories, yet they never sought to extend the ban on students from SARS-afflicted regions in Canada.[129]

This stigmatization was not limited to heavily SARS-afflicted regions. The United States recorded fewer than 40 cases of SARS during the outbreak between 2002 and 2003, yet ethnic Chinese in New York, San Francisco, and other communities throughout the country reported discrimination and harassment. Eichelberger's investigation in New York found that much of the discourse directed toward the Chinese mirrored that of the late nineteenth century, when Chinese immigrants were blamed for influenza.[130] Baehr found that the martial language used against SARS, with governments claiming to engage in a "war" against the disease, contributed to stigmatizing ethnic Chinese.[131] These people, far from being victims of a natural process, were enemies to be fought and defeated. For critics, these processes merely further reinforced the growth of the government's power by misdirecting the attention of the masses.

SARS AND THE BENEFITS OF BIOPOLITICAL SURVEILLANCE

Critics of the role of biopolitical surveillance and quarantine as applied to SARS rightly note that extensions of state power could threaten to become permanently entrenched. They direct our attention to the dangers of overzealous use of these techniques, and they raise important questions about the relationship between the government and the surveilled (and potentially surveilled). By focusing on the extremes

and worst-case scenarios, though, critics miss the crucial role that surveillance and quarantine played in stopping the spread of SARS. Surveillance and quarantine entered the state's arsenal not out of a mere desire to extend their reach, but rather because the scientific necessities of confronting a hitherto unknown virus demanded it. Critics also fail to demonstrate that states have continued to employ more stringent surveillance and quarantine measures postepidemic.

On June 17, 2003, Gro Harem Brundtland, the director-general of WHO, praised the "remarkable speed and sweep of achievements of the global SARS efforts" that allowed the international community to stop SARS "dead in its tracks in some of the worst affected areas." Those efforts focused on three key components—surveillance, isolation, and quarantine. These elements were the main tools of infectious disease control in the historical era before the development of the arsenal of vaccines and antibiotics.[132] Despite all the scientific and technological advances of the previous 200 years, the control of SARS relied on traditional, old-school public health strategies.

Fidler rightly reminds us, "Globalization provides infectious diseases with opportunities to infect human populations across the planet almost as easily as infecting the family next door."[133] This is exactly the situation the international community faced with SARS. Indeed, researchers can directly trace the disease's travel across the globe with the easy and rapid movement of individuals. SARS did not appear in Singapore and Canada spontaneously; it inadvertently hitched a ride in the lungs of travelers.

For any public health strategy to be effective, especially one that seeks to understand the contours of a novel pathogen, authorities must know as much about the situation as possible. They need to know who is infected. They need to know who is at risk for infection. They need to know how and when people develop new infections. That information comes from surveillance. "Surveillance provides the baseline information public health officials need to respond to infectious disease threats and to assign priorities to prevention and control efforts concerning different diseases."[134]

This strategy was particularly important for SARS. Existing treatments for respiratory ailments showed little efficacy. Instead, public health authorities had to draw upon other public health strategies, hoping that they might provide some insights and be effective in combating the virus' spread. The only way to know if that was the case, though, was to implement significant international surveillance systems that could draw upon state and nonstate sources of information.

Such surveillance, rather than being imposed upon an unwilling populace, depends crucially upon the consent of the governed. Effective biopolitical surveillance flows from a recognition of a state's sovereign and legitimate power. Neither WHO nor any individual state could monitor the health of a given population without the consent and cooperation of that population.[135] A population that rejected a state's claimed need for surveillance could certainly thwart those efforts. Throughout the SARS outbreak, the international community witnessed people breaking quarantine or resisting surveillance when they considered it unwarranted or found it overly intrusive.

The international community played a particularly important role in establishing surveillance and quarantine systems. Remember, until late April 2003, the Chinese government rejected claims that a new disease was spreading within its borders. National health authorities repeatedly rejected offers of assistance from the international community, and the government banned journalists from reporting on any unusual disease outbreaks. Laurie Garrett, the American journalist and public health expert, tells of her Chinese journalist colleagues being harassed by and facing severe repression from government officials for inquiring about the disease or trying to inform the public about the outbreak.[136] All this happened while China had the highest number of SARS cases in the world and was the global epicenter of transmission. The only reason that any sort of surveillance system came into existence and could start to monitor the situation in China was that the international community could rely upon information from non-state sources. Though decidedly nontraditional, WHO officials received reports from local doctors, contacts scattered throughout the country, disgruntled health care workers, and even rumors. Instead of waiting for government authorities to admit to the scope of the problem, WHO surveillance started earlier.

China's initial refusal to participate in the global SARS surveillance systems had a negative effect on its standing within the international community. It made China look like a bad international citizen—unwilling to cooperate with others on matters of life and death.[137] It isolated the country at a time when it increasingly sought greater integration with international political and economic structures. Participating in these cooperative surveillance systems has become a marker that a state is cognizant of and concerned with ensuring the health of all and not just its own citizens.

It also bears mentioning that the repression of punishment of dissident voices in China, the ones that wanted the international

community to know the true scope of the problem, occurred primarily *before* the Chinese government acknowledged that a problem existed. Repression was not part of surveillance; it largely *predated* the surveillance and was used to *prevent* calls for surveillance. Once the government opened itself up to the international community and allowed for effective surveillance, the repression declined.

It is undoubtedly true that cases of arbitrary detention took place. Foreign nationals often found themselves subject to extraordinary quarantine and isolation, and ratio of those quarantined to the actual cases of SARS discovered was quite skewed. These are unfortunate and point to the fact that international human rights norms have not yet been fully inculcated within the international public health system. However, it is significant that no evidence demonstrates that any of these detentions or policies continued beyond the outbreak itself. States may have been overzealous in their application of surveillance and quarantine policies in some instances, but they did not take SARS as a license to permanently extend their power over those within their borders. Indeed, most health officials expressed reluctance to use their powers in too sweeping a manner out of fear that it would drive people further underground, and tracing individual cases may make more sense from an epidemiological sense.[138]

Instead, these responses helped reinforce the importance of the international community to explicitly integrate human rights principles into its surveillance systems. Surveillance and quarantine may be important, but so were human rights. The lapses in their application convinced many that they needed to take steps to ensure that they would have a role in the future:

> SARS was a novel pathogen for which no adequate diagnostic, vaccine, or therapeutic technologies existed. SARS containment depended on isolation and quarantine in many countries, which raised questions about the precautions required to ensure public health while protecting human rights. The concerns expressed about human rights in connection with SARS isolation and quarantine would not arise under traditional horizontal governance.[139]

This new pathogen put the international community and individual governments on notice that they needed to do a better job of striking a balance between surveillance and human rights. However, these evince a growing acceptance of importance of protecting and recognizing human rights while still utilizing biopolitical surveillance and quarantine.

CONCLUSION

SARS provided the international community to renew its commitment to integrating human rights principles into its public health surveillance strategies. Stopping the spread of SARS depended crucially upon the zealous use and application of biopolitical surveillance, isolation, and quarantine. However, we increasingly witnessed efforts to ensure that human rights received protection and respect. Governments sought to ensure that children could receive an education that men and women could still receive an income, and families would meet their basic needs. They sought (and received, in most cases) the consent of the governed in cases where they did violate standard notions of human rights in some manner. This was not done perfectly, and struggles over the relative worth of human rights in the face of a new disease epidemic remained a common feature of the international community's SARS strategy.

Although we see a growing recognition of the role of human rights as a tool to balance the GPGH and the need for biopolitical surveillance, the exact nature of this balance remains elusive. One tool that the international community has used to strike the proper balance over the past century is the International Health Regulations (IHR). This treaty, the only element of international law explicitly and exclusively devoted to public health, has evolved over time to reflect the fears and hopes of the international community in the face of the spread of infectious disease. Explicit recognition of the role of human rights is a new element of the IHR, but questions exist as to whether that recognition is sufficient and appropriate. The next chapter examines the evolution of the Regulations.