

China and the United States

Mutually Incomprehensible Approach to Fighting COVID-19

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China and the United States, the two largest economies and most influential countries in the world, were polar opposites in how they fought COVID-19. This chapter discusses the beginning of the outbreaks in the two countries and subsequent waves, what they prioritised, the effectiveness of their interventions, and their considerations in ‘opening up’ and ‘living with COVID’. Their different approaches illustrated their respective underlying conditions, politics, capabilities, cultures, and societies.

The assertion of their respective political will stemmed from a different sense of the ‘social contract’ in China and the United States. While there is no fixed or exact meaning of social contract, it broadly involves an implicit agreement by the people to follow policies and rules set by the government for the greater good of society. Chapter 6 provides a thorough discussion of the concept of the social contract. Furthermore, as explained in Chapter 1, trust matters a great deal too. The people are more likely to act in the interest of the whole because they trust their government to shape appropriate policies and rules, and/or they can rely on each other to abide by them. Chapter 1 provides details based on surveys about political trust in various countries, including China and the United States. In summary, political trust is high in China and low in the United States. While science and health advice were essential for political leaders in making decisions, COVID-19 showed the socio-economic, political, and cultural challenges that China and the United States faced.

China and the United States are physically large countries. China has a unitary political system, while the United States has a federal system. China has 1.4 billion people, and the United States has 330 million. The healthcare system is much more developed in the latter than in the former. It is beyond this chapter to drill down to what happened in specific localities of the two countries since there were many variations. This chapter stays at the national macro-level. Chapter 10 covers how neighbourhoods are organised in mainland China and the role they played in pandemic control, and Chapter 11 covers Greater China, which includes Hong Kong, Macao, and Taiwan. Reading the three chapters together provides a complete picture of the Chinese experience. Another distinguishing feature is the overall relationship between China and

the United States when COVID-19 emerged. They were in the midst of a geopolitical contest with each other, which had a considerable impact on how they saw each other, including with respect to the pandemic. Their conflict is continuing and intensifying as COVID-19 continued into a third year and as this book went to press.

China's Response to COVID-19

China's response to COVID-19 could be seen in four phases:

1. Early uncertainties and missteps from December 2019 to 20 January 2020.
2. Interrupting transmission from 21 January to April 2020.
3. Normalising prevention from May 2020 to December 2021.
4. Olympics, Omicron, and opening up in 2022.

Legacy of SARS

The severe acute respiratory syndrome (SARS) epidemic in 2003 left a deep mark in China. It resulted in over 5,300 cases and over 540 attributable deaths, and the economy was affected. Worldwide, it affected 8,400 people and resulted in 916 attributable deaths. SARS was short-lived compared to COVID-19—only eight months separated the first reported case from the end of the epidemic. The legacy of COVID-19, by contrast, will be greatly felt for many years to come.

There was panic in January 2003 during the early period of the SARS outbreak in Guangdong. Rumours were rife about a strange disease, resulting in buying sprees of various folk medicine, drugs, and face masks. SARS spread to other parts of China—affecting Beijing particularly badly—and outside mainland China. Top leaders in Beijing were not properly briefed until mid-April 2003. However, once the leadership realised what was happening, China provided regular information and mobilised resources to act. SARS was contained quickly with the involvement of the World Health Organization (WHO).

SARS led to an overall assessment of the healthcare system in China. Investment in public health and the healthcare system had fallen behind, as the country prioritised economic growth. An important reform with respect to infectious disease management was the setting up of the automated Contagious Disease National Direct Reporting System (CDNDRS) in every hospital. This reporting system enables hospitals to report directly to the Chinese Centre for Disease Control and Prevention (CDC) to enable rapid response. It was also designed to minimise political interference. In 2003, the poor handling of SARS had much to do with the low awareness of the risk of infectious diseases among Guangdong provincial officials and Beijing officials, and what critics saw as the habitual downplaying or even concealing of 'bad news' from the highest authority in order to not cause panic and maintain stability. Since its creation, CDNDRS had been used and was thought to be a successful system. China's overall performance

in infectious diseases has also improved. China dealt with H7N9, the avian flu that emerged in February 2013, in an exemplary manner. There were rumours that people could be infected from eating chicken but there was no widespread panic because the authorities took fast and effective countermeasures to keep people informed. H7N9 was lethal (fatality rate of 40 per cent) but not highly transmissible. China was widely praised for its new openness compared to SARS, and for its willingness to cooperate internationally.

Phase 1: Early uncertainties and missteps

COVID-19, a highly infectious fast-moving disease with a combination of unique characteristics (see Chapter 1), stumped the Chinese authorities in the early weeks of the outbreak. The contention centres around December 2019 to 19 January. There are many chronologies and viewpoints published by official sources, media organisations, and public health academics and other experts in specialist journals. Many books have also been written by political scientists, sociologists, journalists, and others with various interpretations, ranging from crude to thoughtful. There are essentially two contending narratives—one focuses on suppression and concealment, the other on reasonableness.

The first narrative targets the authorities for suppressing and hiding information. Frontline doctors in Wuhan started to see a rise in pneumonia-like cases during the flu season in November 2019. By early to mid-December, they could see some patients were not responding to flu medication.¹ They informed their immediate superiors, as they were supposed to do, who informed the local Wuhan health authorities. Doctors took fluid samples from patients and sent them to laboratories for analysis. Results showed the pathogen to be a SARS coronavirus, and the Wuhan health authorities were informed by 29 December. Frontline health professionals in Wuhan also shared what they were seeing with each other online. On 30 December, they got wind that it was a SARS coronavirus.² The leadership at Wuhan's hospitals should have activated the CDNDRS by then. Instead, the Wuhan health authorities sent out orders that hospital healthcare professionals were not to spread information about what they were seeing to avoid panic. The Wuhan Public Security Bureau was watching social media communication and issued a public report on 1 January 2020, that eight people had been summoned and reprimanded for 'spreading rumours about the outbreak online.'³ On the same day, the authorities closed the Huanan Seafood Wholesale Market in Wuhan

1. Retrospective research showed COVID-19 could have been circulating in mid-October to mid-November 2019 in China; Jonathan Pekar, Michael Worobey, Niema Moshiri, Konrad Scheffler, and Joel O. Wertheim, 'Timing the SARS-CoV-2 Index Case in Hubei Province', *Science* 137, no. 6540 (2021): 412–417.
2. Dr Ai Fen, head of the emergency department at the Wuhan Central Hospital, circulated the information on 30 December to other doctors when she found out that the pathogen was a SARS coronavirus.
3. The eight were all doctors who were sending social media messages to warn colleagues to take precautions against the virus. Dr Li Weiliang was one of them. Dr Li was 'summoned' and had to pledge in writing not to continue to spread rumours. He later became infected and died.

because some of the patients had been to the market and it was thought that the new coronavirus came from there, where many species of wildlife were sold.

Another questionable issue was over the slow release of genomic sequences by the Chinese authorities. Chinese laboratories were mapping the genetic sequence of the new pathogen. In one case, the laboratory at Fudan University in Shanghai received a sample on 3 January 2020 and had sequenced it by 5 January. The laboratory warned the Wuhan and Shanghai authorities, as well as the National Health Commission (NHC), China's ministry of health in Beijing, that it was from the same family as the bat virus that had spawned SARS. China only released the findings on 12 January after the Fudan sequence was uploaded online the day before.⁴ Critics noted that an earlier release would allow for quicker development of a diagnostic test and antiviral treatments, and for others to get prepared.

The NHC sent two expert teams to Wuhan to investigate the outbreak—the first on 31 December and the second on 8 January. The experts sent to Wuhan thought the risk of human-to-human spread was low and that the situation was controllable, the consequence of which was the Wuhan city government proceeded with its annual political meetings on 6 January, followed by the provincial Hubei People's Congress meetings with over 600 delegates for five days starting from 11 January. Wuhan's annual Chinese New Year banquet with 40,000 families was also allowed to proceed on 18 January. It took a third team of experts to confirm that sustained human-to-human transmission was taking place the following day.

The reasonableness narrative focuses on the many unknowns in the early days of the outbreak in Wuhan. The authorities had to conduct detective work to rule out many suspects, such as known viral and bacterial pathogens from the clusters of similar pneumonia. COVID-19's many unique characteristics were unknown at the time, including its generally mild and self-limiting disease (as compared to 2003 SARS), long incubation period, asymptomatic spread, and high transmissibility.⁵ The authorities' defence was that they acted as soon as cases were reported. On 30 December, the Wuhan health authorities issued an urgent notice to all local hospitals on the treatment of patients with pneumonia of unknown causes, and the NHC was informed. On 31 December, a first expert team was sent to Wuhan by the NHC to investigate. China informed the WHO about a new pneumonia on 3 January 2020. Chinese scientists confirmed the new coronavirus pathogen and its full genomic sequences were shared with the WHO

4. Zhang Yongzhen led the Fudan team that sequenced the virus on 5 January. Zhang uploaded the genome to the US National Center for Biotechnology Information and notified the NHC, Wuhan Central Hospital that provided the sample, and the Shanghai health authorities that the virus was similar to SARS and that it spread by respiratory transmission, and he recommended the authorities take emergency measures to deal with the disease and to start developing antiviral treatments. For Zhang's own telling of what happened, see David Cyranoski, 'Zhang Yongzhen: Genome Sharer', *Nature*, 14 December 2020, <https://www.nature.com/immersive/d41586-020-03435-6/index.html>.

5. Dr Gao Fu, head of the Chinese CDC, gave interviews that are available online about the early days of the detective work to explain China's perspective. See for example CCGT's interview with Gao about the early detective work, CGTN, 'Exclusive interview with Chinese CDC Director Gao Fu', accessed 14 September 2022, <https://www.youtube.com/watch?v=q2PmAGvTCEQ>.

on 12 January (see Chapter 2). The explanation for not publishing sequences earlier was that it was for the sake of accuracy. The general practice was to have at least two independent institutions do the sequencing before release.

President Xi Jinping was already informed about the outbreak in Wuhan by 7 January and had asked for it to be controlled. On 8 January, a second investigation team was sent to Wuhan to update the leadership. The issue of transmissibility and virulence was a vital piece of information to determine what needed to be done. Experts continued to advise the risk of human-to-human transmission was low. Ten days later, yet another team was sent, this time headed by China's famous respiratory doctor, Zhong Nanshan, as the leadership wanted greater clarity. By then, deaths were occurring—the first death from this new disease in China was announced on 10 January. Dr Zhong became famous during SARS when he spoke out against the authorities about the disease. Together with other experts, Dr Zhong conducted their assessment on 19 January and flew to Beijing immediately to brief leaders on 20 January that sustained human-to-human transmission was occurring. From Dr Zhong's various public statements, the discussion with leaders included policy priorities. The top leadership announced the same day that all levels of authority throughout the country 'should put people's lives and health first'. The NHC held a press conference at which Dr Zhong announced his findings and called on people not to travel to Wuhan. On 23 January, the lockdown in Wuhan and other cities in Hubei began. China declared the fight against the virus as an all-out 'people's war' and the whole country would be affected. The reasonableness narrative concludes that mistakes could happen in making battlefield calls in an unclear situation and China's overall action was not unreasonable despite mistakes by the local authorities in Wuhan and Hubei to suppress information. This narrative acknowledges suppression of information by the local authorities was wrong and the officials involved were subsequently held accountable and punished.

Structural, systemic, and habitual problems

Both the suppression-and-concealment and reasonableness narratives were quests for 'truth' although the vantage point of the viewer greatly affected perception. Those writing from a medical and health perspective tended to favour the reasonableness narrative, whereas those taking a political perspective tended to adopt the suppression-and-concealment narrative and were critical fundamentally of China's political system. Mainland Chinese analysts tended to explain the complexity of the Chinese political and public health systems, and pointed to specific problems that needed to be reformed.

The Chinese government itself explained the chain of events in a State Council paper published on 7 June 2020, starting with the local Wuhan CDC receiving information from a hospital about pneumonia cases of unknown cause on 27 December and informed hospitals under its supervision about it. The NHC was also informed and started to organise an expert team to conduct an on-site investigation in Wuhan on 31 December. The State Council paper does not cover earlier events. What it does show

was the national government assumed authority over dealing with the disease from 20 January. Chinese analysts saw this step as necessary because of the fragmented and unclear nature of the Chinese political structure in the distribution of power between Beijing and the provinces and major cities.

COVID-19 exposed a number of China's governance challenges. Critics pointed to various longstanding failings of the Chinese system. Those in the medical profession saw the difficulty of getting urgent information quickly up and down the national CDC's layered structure in China (county, prefecture, provincial, national CDC, and then to the NHC) during the early days of the outbreak. Others pointed to the unequal relationship between health officials and the much more politically powerful provincial and municipal party secretaries, governors, and mayors. While the NHC and national CDC represent the national health authorities, they cannot easily interfere with local politicians. The local CDC officials and hospitals are answerable to the local leadership. It may be surmised that the CDNDRS was not activated because it got entangled with local political interference, as reporting needed the approval of the heads of hospitals who worked under the Wuhan health commission, which in turn took instructions from the Wuhan and Hubei leadership. During the days of the provincial political meetings, the Hubei health commission even stopped disclosing new infection cases.

Furthermore, officials could use unclear laws to shirk responsibility. For example, under the Law on Prevention and Treatment of Infectious Diseases, it is the NHC and the provincial health commissions that are responsible for issuing warnings of outbreaks and epidemics, whereas the Law on Emergency Response requires local governments to issue warnings. The contradiction encourages blame-shifting if something goes wrong. The mayor of Wuhan's defence was that while he knew about the outbreak, he claimed he was not authorised to disclose it.⁶

The mayor's acknowledgement that local leaders knew about the outbreak brings up another issue—the issuance and consideration of expert advice. Experts are often regarded as mere technicians with no independent agency, and information available to the experts is often tightly controlled by the authorities. A member of the first expert panel noted that at the beginning, the panel found no evidence of human-to-human transmission among close contacts put under quarantine, which to them suggested the virus had a low capability to spread among people.⁷ Critics noted a tendency in China for experts to be conservative in their judgement of low-probability, high-impact situations, where a false judgement could lead to high political and/or social impacts.⁸ A member of the second panel disclosed his panel was given false information in Wuhan

6. Yang Zekun, 'Wuhan Mayor Says Will Resign If It Helps Control Outbreak', *China Daily*, 27 January 2020.

7. Wang Xiaoyu, 'Q&A: Senior Health Expert Addresses Key Concerns Amid Outbreak', *China Daily*, 25 January 2020.

8. Ye Qi, Coco Dijia Du, Tianle Liu, Xiaofan Zhao, and Changgui Dong, 'Experts' Conservative Judgment and Containment of Covid-19 in Early Outbreak', *Journal of Chinese Governance* 5, no. 2 (2020): 140–159, <https://doi.org/10.1080/23812346.2020.1741249>.

about whether doctors and nurses were infected.⁹ The political leaders of Wuhan and Hubei did not want to disrupt their political meetings and Wuhan's annual banquet. It would have been difficult to proceed with those events had the expert teams sent to Wuhan on 31 December and 8 January concluded that human-to-human transmission was occurring. Critics saw such behaviour as the 'entanglement of political and economic interests' where the political and economic elites prioritised their interests over public health.¹⁰ Nevertheless, even the national CDC showed a measure of understanding for the local authorities in Wuhan and Hubei that: 'They need to consider economic factors, and issues like family reunions over the Lunar New Year. So, what we [scientists] said was only part of their considerations.'¹¹

Phase 2: Interrupting transmission

China's strength is in national mobilisation. China can act with speed, rigour, and effectiveness once decisions are taken at the top. The Chinese political and administrative systems can pull in the same direction although many details have to be worked out along the way that can be messy. It is what the public expects—the government is there to do big things that individuals cannot do, and the people are willing to submit to inconvenience and social control. Fighting an infectious disease is one such example. This is an important part of the ruling Chinese Communist Party's social contract with the Chinese people. Moreover, Chapter 10 explains how China's neighbourhoods are organised and the effectiveness of that system in mass mobilisation in times of need.

SARS provided a good example of China's mobilisation capabilities. It is worth listing the magnitude of that response in Beijing in 2003 to illustrate China's capacity to mobilise resources and the workforce despite many shortcomings in the health system then:

- (1) Reducing person-to-person transmission through testing, isolation of SARS patients, tracing and quarantine of close contacts, and surveillance.
- (2) Setting up more than 100 fever clinics in hospitals in Beijing, which played an important role in screening and triage.
- (3) Building a new 1,000-bed SARS hospital in days in Beijing to deal with rising cases.
- (4) Training large numbers of healthcare workers in the management of SARS patients, infection control and use of personal protective equipment (PPE).
- (5) Sending large quantities of PPE and medical apparatuses to frontline healthcare workers.

9. Yu Liu and Richard B. Saltman, 'Policy Lessons from Early Reactions to the COVID-19 Virus in China,' *American Journal of Public Health* 110, no. 8 (1 August 2020): 1145–1148; and Shen Kui, 'The Delayed Response in Wuhan Reveals Legal Holes,' *The Regulatory Review*, 20 April 2020.

10. Li Zhang, *China and Global Capitalism* (Stanford, CA: Stanford University Press, 2021).

11. Jun Mai, 'Politics May Have Stalled Information in Wuhan Coronavirus Crisis, Scientist Says,' *South China Morning Post*, 30 January 2020.

- (6) Concentrating SARS patients in designated wards to help reduce transmission.
- (7) Deploying thousands of local and military health workers for emergency management of the outbreak.
- (8) Disseminating information to the public on the status of the epidemic and guidance on prevention.
- (9) Dedicating substantial emergency funding to fight the disease nationally, including covering the medical costs of SARS patients by the state.

With respect to COVID-19 in 2020, the Chinese authorities essentially followed a similar path but on a much more substantial scale. From 23 January, the authorities imposed a variety of measures to cut transmission once national leaders decided the epicentre at Wuhan and Hubei had to be locked down. China's actions included:

- (1) Suspending public transport with the closure of airports, railway stations, and highways to minimise transmission.
- (2) Imposing travel bans throughout Hubei Province.
- (3) Extending the Chinese New Year holiday nationwide to minimise transmission, as large numbers of people had already started their travel.
- (4) Advising travellers who left Wuhan for the holidays to report their travel history and to self-quarantine for two weeks to prevent transmission; and postponing the re-opening of schools and factories nationwide to keep people at home.
- (5) Centralising the allocation of PPE to give priority to the medical sector.
- (6) Building 16 makeshift hospitals, called *fangcang* or cabin hospitals, over three weeks, starting in early February 2020, which provided 13,000 beds.

The *fangcang* is a type of field hospital mobilised by China at speed to tackle COVID-19. They were large-scale, low-cost, temporary facilities based in converted public venues, like stadiums and exhibition centres. They served to isolate the vast majority of patients with milder symptoms to minimise the spread to their families and colleagues. The *fangcang* provided medical care, disease monitoring, food, and social activities. Hospitals were reserved for those who needed serious medical care. The *fangcang* were decommissioned as COVID-19 subsided.¹²

China's anti-pandemic efforts also relied on mobilising medical personnel from across the country. Once an outbreak occurred in a certain place, medical professionals and supplies were quickly marshalled and dispatched there. Trained staff worked in shifts so that each sampling point could perform testing 24/7. Volunteer teams were also assembled to serve the community in need so that local residents could observe the quarantine rules to help prevent a large-scale outbreak.

12. Simiao Chen, Zongjiu Zhang, Juntao Yang, Jian Wang, Xiaohui Zhai, Till Bärnighausen, et al., 'Fangcang Shelter Hospitals: A Novel Concept for Responding to Public Health Emergencies', *The Lancet* 395, no. 10232 (2020): 1305–1314.

Moreover, mainland Chinese and Hong Kong experts began to provide a large number of research papers about the new disease through learned medical and scientific journals, such as *The Lancet*, *British Medical Journal*, *The New England Journal of Medicine*, and *Nature*. The earliest medical reports published in January 2020 described the symptoms of the new disease, warned that a high number of patients needed intensive care, noted fatality rates, and pointed out that human-to-human transmission had been occurring.¹³

The WHO described the totality of China's response as 'ambitious, agile and aggressive' in the history of disease containment. It included scaling up testing plus contact tracing, imposing temperature monitoring, requiring face masks, equipping healthcare workers with PPE, and massive scaling up of isolation and care capacities through deploying healthcare workers from other parts of the country to Wuhan. To cut transmission, an estimated 760 million people, half of China's population, were confined to their homes for an extended period.

As knowledge was gained about COVID-19, China was able to be more targeted in implementing its response with specific science and risk-based approaches that were less manpower heavy. Containment and mitigation measures were adjusted to different locations, contexts, settings, and circumstances. Messaging from Chinese leaders and the authorities was consistent about fighting the virus. Domestic transmission was controlled by March 2020, as cases dropped significantly. As China prepared for relaxation measures, Chinese digital companies developed a health passport embedded in China's popular mobile payment systems that could calculate the level of COVID-19 risk and assigned a colour code to define the user's permitted movements. From April 2020, China's focus switched to the containment of imported cases. All incoming travellers had to undergo a diagnostic test upon arrival and had to be quarantined for 14 days. China's success was symbolised by the end of the Wuhan lockdown on 8 April—the city put on a sound-and-light show and residents celebrated.

The Chinese public was highly critical of the government's handling of the early part of the outbreak in Wuhan, and the tough nationwide lockdown measures, but criticism eased as cases dropped and as many other parts of the world, including economies considered more advanced than China, such as the United States, failed to contain COVID-19 in 2020 and suffered high rates of hospitalisations and deaths.

Phase 3: Normalising prevention

As life resumed under the 'new COVID normal', China continued to face various outbreaks here and there—all were contained relatively quickly in 2020. On 7 May, the

13. Chaolin Huang, Yeming Wang, Xingwang Li, Lili Ren, Jianping Zhao, Yi Hu, et al., 'Clinical Features of Patients Infected with 2019 Novel Coronavirus in Wuhan, China', *The Lancet* 395, no. 10223 (2020): 497–506; and Jasper Fuk-Woo Chan, Shuofeng Yuan, Kin-Hang Kok, Kelvin Kai-Wang To, Hin Chu, Jin Yang, et al., 'A Familial Cluster of Pneumonia Associated with the 2019 Novel Coronavirus Indicating Person-to-Person Transmission', *The Lancet* 395, no. 10223 (2020): 514–523.

State Council published guidelines on the *Normalisation of Prevention and Control of the Covid-19 Epidemic*. The guidelines explained that the government would prioritise prevention, strengthen control in public places, expand diagnostic testing, leverage Big Data for health code development, do more research and development, and adjust risk levels and responses as needed. The authorities remained wary of resurgence, and cases could be imported. Chinese vaccines using inactivated-virus technology, similar to flu vaccines, were being developed and they became available in December 2020. Chapter 4 discusses the efficacies of the Chinese vaccines compared to other vaccines. China's aim was to achieve an 80 per cent vaccination rate by the end of 2021, so there was a mass vaccination drive. By the end of 2021, the vaccination had reached 85 per cent. China's cumulative case total for COVID-19 was about 100,000 with under 5,000 deaths at the time. The official view was that continuing with the zero-infection (zero-COVID) policy was right for China because of its very large population, and still inadequate national medical infrastructure, especially in the rural areas where 40 per cent of the population lives. A large outbreak could lead to the medical system breaking down with a huge number of fatalities. The appearance of the more virulent Delta variant in India in late 2020, followed by the highly transmissible Omicron variant in South Africa in late 2021 strengthened China's belief that its zero-COVID policy was correct, and it must be cautious in considering opening up. Chinese experts noted that countries that had relaxed their policies amid a drop in cases later suffered large numbers of infections. China continued to pounce on outbreaks here and there in 2021. They noted China's zero-COVID policy's approach to dealing with sporadic outbreaks was less costly than treating infected patients.¹⁴ Chinese experts reframed the COVID-19 challenge by describing it as 'an era of epidemic normalisation', which meant China would have to coexist with the virus at some stage but that there should be a 'dynamic' aspect to China's policy that considered such factors as vaccination rates and better vaccines, the severity of variants, and how well COVID-19 was controlled around the world. The aim of any new policy should ensure normal socio-economic activities would not be disturbed too much, and that China could still prevent viral transmission effectively through testing and treating patients as quickly as possible—this would prove easier said than done in 2022 with the Omicron variant.

Phase 4: Olympics, Omicron, and opening up in 2022

Holding to the zero-COVID policy was important ahead of the Beijing Winter Olympics, scheduled for February 2022, when a large number of foreign athletes, officials, support staff, and journalists would arrive from many countries still with high numbers of COVID-19 cases. Those who tested positive upon arrival or during their stay were isolated. China's goal was to keep the games COVID safe and prevent

14. 'Top Infectious Disease Expert Defends China's "Zero Tolerance" Policy against Criticism It's Too Costly', *Caixin*, 2 November 2021.

transmission to its domestic population. A 'closed-loop system' was created for tens of thousands of people including medical staff and volunteers, who had to be shuttled through three competition zones up to 180 kilometres apart for 16 days and 109 events. A giant quarantine bubble had been created for the games, requiring meticulous planning, surveillance, management, and massive manpower. China pulled it off.

By mid-March 2022, the Omicron BA.2 subvariant had broken through in various parts of China, including the major cities of Shenzhen, Beijing, and Shanghai. COVID-19 restrictions were re-imposed to a greater or lesser extent. The Chinese formula remained mass testing, contact tracing, centralised quarantine, and lockdown if necessary. Shenzhen was locked down for a week in March, and Beijing for about four weeks in April–May; parts of Beijing had recurrent outbreaks into June. Most prominent was the two-month lockdown of Shanghai from mid-late March to the end of May. Initially, people were asked to stay home for a few days. Residents were not expecting a long lockdown and were psychologically unprepared for the extension and re-extension of the stay-home order, which exacerbated public anger as people did not know how long it would last. Residents also complained about many 'unreasonable' curbs, such as the erecting of fences to keep people within their residential compounds and evacuating people for disinfection of buildings. Other complaints included the poor conditions of quarantine centres, the shortage of food and medicine, and the lack of medical care for those with other illnesses. The Shanghai municipal government apologised for their COVID-19 unpreparedness and publicly thanked residents as restrictions eased on 1 June 2022. The battle was seen to be under a measure of control by late June.

The re-imposition of COVID-19 restrictions and lockdowns in China between March and May 2022 was not unreasonable. Research showed that having maintained a low infection rate in the general population through the pandemic, China had time to mass immunise its population, which had increased to 91.4 per cent by mid-April. However, the vaccine-induced immunity was insufficient to prevent outbreaks, and vaccine uptake in older adults remained lower than in other groups. From 1 March to 22 April, China saw more than 500,000 Omicron infections across the country with 93 per cent of them in Shanghai. Scientists estimated that in the absence of the Chinese formula noted above, there could have been a 'tsunami' of cases over a six-month period, resulting in over 112 million symptomatic cases, over 5 million hospital admissions, possibly 2.7 million intensive care admissions and 1.6 million deaths, with the main wave occurring between May and July 2022. Of the estimated fatalities, 77 per cent would have occurred in unvaccinated older individuals (see Chapter 5).¹⁵ It was not surprising that when vice-premier Sun Chunlan visited Shanghai on 2 April 2022, she urged 'resolute' action to rein in COVID-19 despite the hardship caused to residents, and for the Chinese leadership to stay the course for the foreseeable future.

15. Jun Cai, Xiaowei Deng, Juan Yang, Kaiyuan Sun, Hengcong Liu, Zhiyuan Chen, et al., 'Modeling Transmission of SARS-CoV-2 Omicron in China', *Nature Medicine* 28 (10 May 2022): 1468–1475.

The complaints about the over-zealousness of officials and the bungling of aspects of the Shanghai lockdown led the NHC to issue orders in June 2022 that local authorities should not take unnecessary measures to restrict people's movements and business operations. Nevertheless, Chinese leaders felt they needed to stick to the winning formula of mass testing and tracing plus quarantine because there could be further mutations and China's overall healthcare conditions could not cope with massive numbers of cases. They felt China's overall numbers justified their approach—from the start of the COVID-19 outbreak in 2020, China had 2.42 million cases and 14,600 deaths, still very low compared to other countries, such as the United States and the United Kingdom. The argument in the summer of 2022 was over whether it was the right policy for China to continue regular mass testing all over cities, as the cost and effort would be enormous. Testing booths and centres mushroomed. Shanghai reportedly had one testing station for every 1,000 to 3,000 residents by the end of May 2022, and 15,000 stations in June. Estimates showed it could cost CNY60 billion for all cities with more than one million residents to build and maintain an adequate number of testing centres in 2022, and another CNY350 billion would be needed to conduct tests every 48 hours from May to December 2022.¹⁶ The Chinese government justified the expense on the basis that it would be less costly than lockdowns. Experts were concerned about whether public support would wane, as pandemic fatigue set in, and whether the vast sums needed for testing could be better spent on protecting vulnerable groups who should be vaccinated, especially the non-vaccinated elderly, where China had not done well enough. While the overall vaccination rate was over 91 per cent by June 2022, the rate for people over 60 was around 83 per cent, and less than 50 per cent of those over 80 had received two shots. Like in other jurisdictions, many elderly people remained worried about whether vaccines would harm them and their efficacy (see Chapter 11 on vaccine hesitancy). At the end of June, China relaxed quarantine requirements for close contacts and inbound travellers, but did not change its zero-COVID policy—an indication that the leadership was trying to find the right combination of measures to keep the virus in check while avoiding shutdowns of its economy. By the end of July 2022, it could be seen that COVID control measures became somewhat less stringent, which in the words of Sun was for 'precision', not relaxation. COVID-19 cases continued to appear here and there. At a news briefing on 13 October 2022, when China's total COVID deaths was around 26,600, Liang Wannian of the NHC, explained why China's zero-COVID policy could not be done away with yet:

Although the fatality rate . . . of Omicron is lower than that of the original strain and other variants, it can still lead to large numbers of infections due to its fast and stealthy transmission and ability to evade immunity. As a result, the absolute number of deaths across a certain population would still be quite large, and the disease's population-mortality risk remains higher than that of influenza . . . If we relax our virus-control

16. Xu Wen Cui Xiaotian, Dong Hui, Zhang Yukun and Li Leyan, 'Five Things to Know about China's Plans for Regular Mass COVID Testing', *Caixin*, 3 June 2022.

measures, there is bound to be a spike in new infections, and even many serious cases and deaths. We cannot stand to see such a severe consequence.¹⁷

Yet, the Chinese government started to adjust its COVID strategies on 11 November 2022 with new rules. On 27 November, the government announced that it was embarking on a campaign to vaccinate the elderly, and on 7 December 2022 it relaxed restrictions substantially when COVID cases were rising. The leadership had multiple reasons to pivot: the control methods were no longer working with the highly infectious Omicron with R_0 as high as 22¹⁸ and the authorities had to respond to protests for the economically damaging restrictions, as well as the poorly executed lockdowns in various localities. Mike Ryan, a WHO director, explained that it was not the lifting of restrictions that caused cases to increase; Omicron had been spreading because the control measures in themselves were no longer stopping the disease. He believed that: 'China decided strategically that was not the best option anymore . . . so the challenge that China and other countries still have is: are the people that need to be vaccinated, adequately vaccinated, with the right vaccines and the right number of doses and when was the last time those people had the vaccines.'¹⁹

The leadership pivoted after consulting experts that relaxation and lowering fatalities could go together. While some modelling studies suggested that the lifting of strict restrictions could infect between 160 million and 280 million people—resulting in some 1.3 million to 2.1 million deaths, Dr Zhong Nanshan noted that Omicron had a fatality rate of about 0.1 per cent, about the same as ordinary seasonal influenza and that the current Omicron could be described as a 'novel coronavirus cold.'²⁰ All experts agreed that the risk was highest among unvaccinated older adults, but that it was possible to minimise severe disease and deaths if the authorities went all out to ramp up vaccination and boosters for the elderly. The WHO and experts recommended that China should intensify vaccination—experts thought a three-dose regimen for older people could reduce fatalities by over 60 per cent. Loosening restrictions was seen as a means to incentivise people to get a third dose. Further studies showed a fourth shot would also be helpful. Other essential measures included using antiviral therapies to block viral spread, which required stockpiling drugs, as well as train more medical staff and increase the number of hospital beds. One study showed that China could reduce deaths by 89 per cent by treating those with COVID symptoms with antiviral drugs,

17. Wang Xiaoyu, 'Experts: Dynamic Zero-COVID Policy Still Key', *China Daily*, Hong Kong edition, 14 October 2022.

18. An R_0 of 22 meant one infected person could infect 22 persons (see Chapter 5 on R_0). Zhou Xiaoming, 'COVID Rules Reflect Ground Realities', *China Daily*, Hong Kong edition, 23 December 2022.

19. Emma Farge, 'China's COVID Spike Not Due to Lifting of Restrictions, WHO Director Say', *Reuters*, 15 December 2022.

20. 'New Edition of China's COVID-19 Control Protocols to Be Released Soon: Zhong Nanshan', *Global Times*, 15 December 2022. It was also reported that an unverified document suggested 248 million people in China were infected by COVID between 1 and 20 December, see Josephine Ma, 'Beijing's Covid Wave May Have Peaked but China's Tsunami of Cases Is Months from Easing: Experts', *South China Morning Post*, 24 December 2022.

including ones manufactured by western pharmaceutical companies, something China was reluctant to do in 2021. Moreover, experts advised managing China's reopening in 2023 using a well-coordinated approach so as not to over-burden the health system was a top priority.²¹

United States' Response to COVID-19

The United States had the highest cumulative total of COVID-19 cases and deaths in the world at the end of 2021—50 million and 800,000 respectively, which by 1 June 2022, had risen to over 83 million and over a million deaths, despite having the world's highest concentration of science and technical knowledge. Its experience could be conveniently viewed through three phases that represented the approaches of two successive administrations, and a third phase of 'living with COVID' in 2022.

1. The Donald Trump Era—January 2020 to December 2021
2. The Biden Administration—January 2021 to December 2021
3. Living with the virus—from January 2022

Phase 1 was dominated by Donald Trump and the decisions made by his administration in 2020, when there were many surprising missteps. There are many scholarly and popular publications on this period. The White House chief of staff admitted on 25 October 2020 that 'we're not going to contain the pandemic . . . because it is a contagious virus' and that the administration would focus on 'vaccines, therapeutics and other mitigations'.²² Phase 2, starting in 2021, may be seen as a time for remedial action by the administration of Joseph Biden, but even with greater effort, it was hard to assert control. Beyond the personalities of the two presidents and their appointed officials, there was the longstanding neglect of identified weaknesses in US pandemic preparedness. Moreover, the underlying US culture of resisting restrictions, even in the face of contagion, was also a confounding factor in dealing with COVID-19. Phase 3 deals with how the Biden administration coped with 'living with COVID' as the Omicron variant and subvariants emerged, followed by the easing of pandemic restrictions in end-March 2022. Pandemic fatigue had set in, despite the fact that health experts called for caution.

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21. 'China Epidemiologist Urges Faster COVID-19 Vaccination among Vulnerable Groups', *Xinhua*, 12 December, 2022; 'China Launches Second COVID-19 Booster Shot', *Xinhua*, 14 December 2022; Smriti Mallapaty, 'Can China Avoid a Wave of Deaths if It Lifts Strict Zero-Covid Policy?', *Nature* 612 (8 December 2022): 203; Kathy Leung, Gabriel M. Leung, and Joseph T. Wu, 'Modelling the Adjustment of COVID-19 Response and Exit from Dynamic Zero-COVID in China', *medRxiv*, 14 December 2022, <https://doi.org/10.1101/2022.12.14.22283460>.
 22. Devan Cole, 'White House Chief of Staff: We Are Not Going to Control the Pandemic', *CNN*, 25 October 2020.

A warning: Crimson Contagion

'Crimson Contagion', the simulation exercise in 2019, showed many deficiencies in US pandemic preparedness. The exercise involved various federal, state, local, private, and public institutions. It was based on an outbreak of a novel influenza spreading from returning visitors to China that ended up infecting over 100 million Americans, hospitalising millions of patients, and resulting in over 500,000 deaths. The exercise showed that the authorities had limited capacity to respond, and that states would experience multiple challenges in obtaining resources from the federal government due to a lack of standardised, well-understood, and properly executed resource request processes. The assessment report also pointed to federal agencies lacking the resources and capacities to respond and predicted they would have problems in coordination.²³

Similar problems had been foreseen even earlier. In 2005, the White House published a national pandemic strategy, after which various government departments issued recommendations and guidelines to lay out priorities, and articulate the roles and functions of federal, state, and local authorities. Critics were concerned about the uneven capabilities and capacities of state and local agencies to respond. As many agencies and private sector health institutions had to act swiftly in an emergency, the ability of federal agencies to coordinate had also been questioned. The United States was considered to have coped reasonably well with the H1N1 pandemic of 2009–2010, referred to as the swine flu, that originated in Mexico.²⁴ A closer examination of subsequent reviews flagged a warning that the country's public health capacity could have been overwhelmed had the outbreak been more widespread or more severe. Reports noted that decades of chronic underfunding meant that many core systems were not prepared for epidemic and pandemic emergencies. To strengthen preparedness, experts made a range of recommendations that included:

1. Ensuring public health departments had enough resources to provide on-the-ground responses, and for hospitals and clinics to increase surge capacities.
2. Improving communication and coordination among federal, state, local authorities, and the private sector in preparedness.
3. Investing in pandemic planning and stockpiling antiviral medications, vaccinations, and PPE, including replenishing stocks.
4. Enhancing research and development abilities to rapidly develop a vaccine and ensuring inoculation capability in a short period of time.

23. David E. Sanger, Eric Lipton, Eileen Sullivan, and Michael Crowley, 'Coronavirus Outbreak: A Cascade of Warnings, Heard but Unheeded', *New York Times*, 19 March 2020.

24. By the time it waned in August 2010, virtually all countries had reported confirmed cases. In 12 months, H1N1 was estimated to have caused 60.8 million illnesses, over 270,000 hospitalisation and over 12,400 deaths in the United States, and an estimated 151,700 to 575,400 deaths globally. Statistics from the US Centers for Disease Control and Prevention (USCDC), '2009 H1N1 Pandemic (H1N1pdm09 virus)', accessed 14 September 2022, <https://www.cdc.gov/flu/pandemic-resources/2009-h1n1-pandemic.html>.

5. Improving strategies to limit the spread of disease, ensuring people have sick leave benefits, and that communities were prepared to limit public gatherings and close schools as necessary.
6. Ensuring all those who needed care during an emergency could be cared for, as that would help to limit the spread of a contagious disease to others, and that the institutions that provided care were compensated.

The problems were well-documented by numerous reports of the Government Accountability Office between 2009 and 2013 expressing concern about the level of pandemic preparedness,²⁵ and other inspection reports in 2014 and 2016 noted the urgent need for improvements.²⁶ The *Crimson Contagion* laid bare US vulnerabilities on the eve of the COVID-19 outbreak.

Phase 1: The Donald Trump era

The United States Centers for Disease Control and Prevention (USCDC) is answerable to the Department of Health and Human Services, which is headed by a politically appointed secretary. The USCDC came to know that there was a pneumonia of unknown cause in Wuhan on 31 December 2019, and it circulated the information in an internal document. By 2 January, senior national security and White House officials were alerted, and there was concern about the outbreak spreading. The USCDC issued a health advisory on 7 January to local health departments and healthcare providers about the outbreak in China and requested US healthcare providers to ask patients with severe respiratory illness about their travel history and notify the USCDC where relevant. By 20 January, when China announced human-to-human transmission was occurring, the USCDC activated its Emergency Operation Center to 'support public health partners' to respond domestically. The first confirmed case in the United States, announced on 20 January, was a man who had visited Wuhan. He felt ill and went to a doctor on 19 January after hearing of the USCDC's health advisory. In a 28 January intelligence briefing, Donald Trump was advised that the new virus could be the biggest security threat of his presidency.²⁷ Meanwhile, US officials stationed in China were planning to evacuate their citizens from Wuhan, and the first group of about 200 evacuees landed at an air base in California on 29 January for observation and screening.²⁸ Shortly thereafter, the State Department authorised the departure of all its China-based employees.

25. GAO published critical reports to the US Congress about pandemic preparedness in 2009, <https://www.gao.gov/products/gao-09-334>; in 2011, <https://www.gao.gov/assets/gao-11-632.pdf>; and in 2013, <https://www.gao.gov/assets/gao-13-362.pdf>.

26. Department of Homeland Security Office of the Inspector General reports in 2014, <https://www.oig.dhs.gov/reports/2014-08/dhs-has-not-effectively-managed-pandemic-personal-protective-equipment-and>, and in 2016, <https://www.oig.dhs.gov/sites/default/files/assets/2017/OIG-17-02-Oct16.pdf>.

27. Jamir Gangel, Jeremy Herb, and Elizabeth Stuart, 'Play It Down: Trump Admits to Concealing the True Threat of Coronavirus in New Woodward Book', CNN, 9 September 2020.

28. A subsequent review showed not all the staff sent to the airbase had infection control training, protective gear

Even though senior officials were concerned about the virus, their public communication was low-key. Dr Anthony Fauci, head of the National Institute of Allergy and Infectious Diseases, and the head of the USCDC, described the risk to Americans as ‘low’. They did not want to cause panic. The news media reported many other health professionals saying the seasonal flu posed a greater threat than this new disease. On 30 January 2020, the first case of person-to-person transmission was reported in the United States of a person who had not been to China but had been in touch with someone who had. The United States announced a public health emergency on 31 January, a day after the WHO declared a Public Health Emergency of International Concern (PHEIC; see Chapter 2). This was a clear signal for countries to prepare for outbreaks. Dr Fauci and the USCDC head continued to say that the risk to the United States was low through February, when what was unfolding in China was severe. Their tone only changed in March 2020.

The most important step in the early days should have been containment through ramping up testing and tracing so that the authorities could identify where and how the disease was spreading and use the information to guide intervention measures (see Chapter 1). Critics faulted the USCDC and the Food and Drug Administration (FDA) for a series of decisions that delayed testing.²⁹ The United States could have used an available diagnostic test developed in Germany that the WHO was recommending and used it to make testing kits. Although unlikely, it could also have used China’s. The United States wanted to develop its own more complex test that would supposedly be more precise. Most unfortunate, its testing kits turned out to be defective.³⁰ Critics also found fault in restricting testing to only individuals with a known travel history and who sought medical care for specific symptoms, and for confining the use of its test to a limited group of laboratories. Taken together, very little testing was in fact done and precious time was lost in tracking the spread of the virus at the early stage. Dr Fauci described the US roll out of testing as ‘a failing’ of the system. He noted ‘the idea of anyone getting (a COVID-19 test), the way people in other countries are doing it—we’re not set up for it.’³¹

For some infections, testing and tracing should go together at the early stage of an outbreak. Contact tracing should start when someone tested positive. A tracer should interview this person to identify contacts, such as family members and co-workers. Tracers should inform the contacts so they could quarantine themselves and get tested.

was not worn to avoid ‘bad optics’, and there was no overall plan for infection prevention; see Dan Diamond, ‘US Handling of American Evacuees from Wuhan Increased Coronavirus Risks, Watchdog Finds’, 29 January 2021, *Washington Post*, <https://web.archive.org/web/20210207054532/https://www.washingtonpost.com/health/2021/01/28/wuhan-americans-evacuation>.

29. Cary Coglianese, ‘Obligation Alleviation during the Covid-19 Crisis’, *The Regulatory Review*, 20 April 2020; and Jaimie Ding, ‘Why Are Rapid Antigen Tests Tough to Find?’, *Los Angeles Times*, 10 January 2022.

30. US Department of Health and Human Services, ‘Summary of the Findings of the Immediate Office of the General Counsel’s Investigation Regarding CDC’s Production of Covid-19 Test Kits’, 19 June 2020, <https://www.documentcloud.org/documents/6953861-6-19-20-Summary-of-the-Findings-of-the-Immediate.html>.

31. Elizabeth Chuck, ‘“It’s a Failing. Let’s Admit It”, Fauci Says of Coronavirus Testing’, *NBC News*, 12 March 2020.

The purpose of testing, tracing, and isolation is to break the chain of transmission. In some parts of the United States, more than 50 per cent of the people who tested positive provided no details of contacts when asked; and where contacts were provided, a high portion could not be reached. Insufficient resources and lack of technology support made tracing virtually impossible. Even where there was funding, it was hard to hire enough contact tracers and marshal them efficiently. Public resistance to disclosing information was also a problem.³²

From 2 February 2020, the Trump administration restricted non-citizens other than the immediate family of citizens and permanent residents from entering the United States if they had been to China within the previous fortnight.³³ It restricted travel further as the WHO declared COVID-19 had become a pandemic, and President Trump declared the COVID-19 outbreak a national emergency on 13 March. There were deeply divided views within the White House and among experts on what to do and how to implement measures. On 16 March, the White House finally issued guidelines calling on the public to limit travel and avoid social gatherings of more than ten people for the next 15 days—later extended until 30 April 2020.

The White House's guidelines did help. However, critics saw them as too little, too late. By then the United States had seen not only the aggressive Chinese response with lockdowns and how Asian economies were dealing with COVID-19, but also the devastating situation in Italy (see Chapter 12). The political priority and messaging, however, was to promote a return to normality as soon as possible. Restricting activities was felt to be anathema to the *raison d'être* of the country. The social contract between the rulers and the people in the United States is based on as few restrictions on individual freedom as possible. States started to abandon or reduce mitigation measures towards the end of April 2020 so that their economies could bounce back. By year-end, cases surpassed 20 million with nearly 350,000 deaths.

The Trump factor and choice

Americans did not hear a unified and consistent message from their government. Trump's messages from January to early March 2020 were that the virus was 'under control', the United States was 'in very good shape', his administration was 'doing a great job', and that the 'risk to the American people remains very low'.³⁴ The president was a frequent commentator on his unique understanding of the science, risks, and cures.

32. Dyani Lewis, 'Why Many Countries Failed at Covid Contact-Tracing—But Some Got It Right', *Nature*, 14 December 2020, <https://www.nature.com/articles/d41586-020-03518-4>.

33. Estimates showed 40,000 residents had returned to the United States from China after the ban took effect, and in the month before the travel restrictions, about 300,000 people had travelled to the United States from China; Steve Eder, Henry Fountain, Michael H. Keller, Muye Xiao, and Alexandra Stevenson, '430,000 People Have Traveled from China to U.S. Since Coronavirus Surfaced', *New York Times*, 15 April 2020.

34. According to contemporaneous interviews with Trump, he was regularly briefed and knew that the virus was dangerous, airborne, and highly contagious. He played it down publicly because he did not want to cause panic. Bob Woodward, *Rage* (New York: Simon and Schuster, 2020).

His messaging started to change in four ways from mid-March after the WHO declared COVID-19 a pandemic. First, he described himself as ‘a wartime president’ to fight the virus; second, he started to attack China by calling the virus ‘Chinese’ and attacking the WHO for incompetence; third, he switched to a success narrative of the US response—‘We’ve made every decision correctly’ even as infections and fatalities climbed; and finally, criticisms were ‘enemy statements.’³⁵

By June 2020, pandemic restrictions had become politically and socially divisive as the United States hit two million confirmed cases and new infections rose in 20 states. COVID-19 became increasingly partisan in the run-up to the presidential election, as could be seen from the disagreements over wearing facemasks. When Trump decided he would not wear one, it became a political statement. His harshest critics accused him of ‘pandemicide’ for proceeding with large rallies that enabled the spreading of the virus among his mostly unmasked supporters.³⁶ In 2021, the wearing of facemasks continued to be controversial in the United States with court cases striking down facemask mandates.

The Trump administration’s choice was to leave response strategies to the pandemic to the states. Critics alleged it was because Trump did not want to be held responsible for failure, and by passing the responsibility to the states, there would always be others to blame. The United States had a patchwork of strategies on imposing mitigation measures such as face masking in public, limiting gatherings, issuing stay-at-home orders, restricting out-of-state travel, and closing schools and day-care centres. The federal government chose not to centralise and coordinate the purchase of PPE and medical equipment, which led to states bidding against each other for scarce supplies in the global marketplace when the federal government was also bidding. One view was that the perpetual struggle over relative power and autonomy between federal, state, and municipal authorities was inevitable and that the fragmentation of authority, policy-making, and implementation was a part of America’s experience in its constitutional history.³⁷ Another view put the blame on the president for not choosing to lead a coordinated national response to fight COVID-19, as could be done under the constitution and laws. Those who held this view argued that early, decisive national coordination for containment, mitigation, and procurement and distribution of PPE and equipment supplies could have reduced the state and local governments’ disadvantages early in the

35. There are numerous ‘fact checks’ relating to Donald Trump’s many statements related to COVID-19 by media organisations. An early check was Justin Fishel, Elizabeth Thomas, and Lauren Lantry, ‘Fact Check: Trump’s Coronavirus Response Plagued with Misstatements’, *ABC News*, 16 March 2020. For another study in which Donald Trump was considered a major driver of misinformation, see Sarah Evanega, Mark Lynas, Jordan Adams, and Karinne Smolenyak, ‘Corona Misinformation: Quantifying Sources and Themes in the COVID-19 “Infodemic”’, <https://allianceforscience.cornell.edu/wp-content/uploads/2020/09/Evanega-et-al-Coronavirus-misinformationFINAL.pdf>.

36. Laurie Garrett, ‘Trump Is Guilty of Pandemicide’, *Foreign Policy*, 18 February 2021, <https://foreignpolicy.com/2021/02/18/trump-is-guilty-of-pandemicide>.

37. Greg Goelzhauser and David M. Konisky, ‘The State of American Federalism 2019–2020: Polarized and Punitive Intergovernmental Relations’, *Publius: The Journal of Federalism* 50, no. 3 (2020): 311–343.

pandemic, which could have saved lives and boosted the economy.³⁸ Chapter 8 provides an in-depth discussion of the shortage of PPE in the United States. Perhaps the US federal system is bound to produce many variations, which in itself is not necessarily a problem if the leadership was there to bring society together during the pandemic and forge consensus and coordination.

Phase 2: The Biden administration

Trump lost the November 2020 election to Biden, who was sworn in as president in January 2021. Biden's early focus was to continue to ramp up vaccination, as they had become available by the end of the previous year. Chapter 4 discusses vaccines; suffice to acknowledge here that the United States has an advanced industrial and technological base for vaccine development, and this was its undoubted strength. Developing vaccines as quickly as possible was seen as the silver bullet to defeating COVID-19. Once available, the challenge was to get people vaccinated to reduce their risk of infections and severe COVID-19. In the early days of the outbreak in the United States, there was a moment when the Trump administration thought that herd immunity could be achieved through doing very little so that the people would be infected and thereby become immune. The United Kingdom had thought of adopting such an approach at one time and it was Sweden's approach in 2020 (see Chapter 12).

The Trump administration's major contribution to fighting COVID-19 was *Operation Warp Speed*, announced on 15 May 2020. This was a public-private sector partnership to get vaccine companies to work at speed and scale. The United States funded it by applying a part of its COVID-19 stimulus package and using funds shifted from other projects. By October, contracts had been awarded to support the development and production of six vaccines, with obligations of about US\$10 billion. Under the programme, vaccine companies could build production plants to make millions of doses even before they were proven to be effective. Pfizer, a German vaccine developer not part of the partnership, received a US\$1.9 billion advance purchase agreement in July. The US funding not only removed the financial risk for these companies to develop vaccines before they were authorised by the FDA or shown to be effective, but also gave the companies immunity to lawsuits if something unintentionally adverse arises from the use of their vaccines.³⁹ The two most successful vaccines produced by Pfizer and BioNTech, and Moderna, tried a new messenger RNA (mRNA) technology to trigger an immune response inside the body.

38. Beverly A. Cigler, 'Fighting Covid-19 in the United States with Federalism and Other Constitutional and Statutory Authority', *Publius: The Journal of Federalism* 51, no. 4 (2021): 673–692.

39. Under existing law, the US government invoked the Public Readiness and Emergency Preparedness Act (2005) that empowers the Secretary for Health and Human Services to give legal protection to companies making or distributing vaccines and treatments unless there is wilful misconduct. Time limits do apply to the protection of the pharmaceutical companies under the Act.

An early decision of the Biden administration was to reverse the Trump administration's decision that states were responsible for getting people vaccinated, which led to a slow roll out. Federal agencies were enlisted to set up large-scale vaccination sites, and the military assisted. Between March and June 2021, cases declined steeply as the vaccination rate rose. President Biden and his administration felt victory was at hand by early July 2021. The USCDC ended indoor masking for vaccinated people. Anticipating lower demand, laboratories that made test kits reduced production. Some states scaled back on reporting COVID-19 data. Despite consistent messaging and more effort, the vaccination rate remained stuck at around 60 per cent due to vaccination resistance. The Biden administration admitted that it did not see the Delta and Omicron variants coming.⁴⁰ The Delta variant was able to re-infect people who had previously been infected and caused more severe disease in unvaccinated people than previous strains did. Healthcare workers and hospitals were under strain once again as cases rose. In 2021 there were 470 million COVID cases, more than had occurred in 2020 under the Trump administration. The USCDC recommended on 29 November 2021, that everyone 18 and older should get a third 'booster' dose of vaccination and broadened the age range for vaccination to include children 5 years and older. By the end of 2021, the United States had many concurrent variations in dealing with COVID-19 adopted by states, cities, counties, school districts, universities, and workplaces. In general, the low-vaccination communities had lax restrictions, while high-vaccination ones tended to have more stringent measures.

Phase 3: Living with the virus

In January 2022, the Omicron BA.1.1 subvariant was the dominant strain in the United States. By early February, infections had topped 76 million, and deaths shot over 900,000. Yet, a line of argument had taken root by March that while permissive policies in some states did not stop COVID-19, their overall results were not much worse than those states that had many restrictions, such as masking and forced vaccination. The narrative was that it was better to 'live with COVID' and be free of restrictions, especially as the level of community immunity was thought to be sufficiently high with 66 per cent of all Americans having received two vaccines and 29 per cent having had a booster dose. It was also thought that a high proportion of the unvaccinated had some infection-related protection. Hence, some three-quarters of the population was estimated to have some level of immunity, and people were considered less likely to need hospitalisation even if cases surge in yet another wave. Moreover, antiviral therapies could help, although Congress axed US\$15 billion of COVID-related funding in March 2022 that included spending on providing therapies, as well as bolstering testing capacity. By May 2022, confirmed US deaths from COVID-19 had surged passed a million.

40. Noah Bierman, "We Didn't See Omicron Coming," Harris Says, *Los Angeles Times*, 18 December 2021.

Various federal guidelines on such measures as masking in public places had expired and were replaced by a county assessment system based on local case counts and hospitalisation. Local authorities were to make their own rules at a time of high pandemic fatigue. Essentially, the United States was ‘living with COVID’. In June and July 2022, the Omicron subvariants BA.4 and BA.5 were prevalent. COVID-19 cases were about five times higher than they were in the summer of 2021, reporting about 100,000 new cases each day and further spikes were considered possible as few restrictions were in place anywhere. However, hospitalisation rates were far lower than in the first two years of the pandemic and therefore thought to be manageable. By the end of July 2022, there were still substantial numbers of cases resulting in workers being out sick, including healthcare workers. On 19 September, Biden said the pandemic was essentially ‘over’ for the United States.⁴¹ At the time, there were still about 400 deaths per day in the United States.⁴²

Observations

The greatest criticism of China was its failure before 20 January 2020 to come clean on the emergence of a new disease. Information was suppressed by officials in Wuhan and Hubei until they were caught out and the central authorities mobilised to contain the new virus. In today’s world of instant communication, it is impossible to hide information for long. The news of the appearance of an atypical pneumonia was already circulating on 30 December 2019, on ProMED, a global online forum that public health specialists look at (see Chapter 2).⁴³ China cannot easily dismiss the view that its political system could not be trusted despite many positive reforms and advances. When push came to shove, information about the new coronavirus was suppressed somewhere along the chains of responsibility. The greatest criticisms of the United States were negligence and failure of leadership, as the White House and the Trump administration ignored and downplayed available information about the new disease and failed to take action to contain the virus that led to a loss of control resulting in high infection and fatalities.

Mutually incomprehensible approaches

The Chinese Communist Party is the ruling party in China on an ongoing basis. It must continue to deliver strong governing performance to justify its continuing leadership. In other words, its legitimacy comes from performance. In facing a new infectious disease, the leadership used the number of cases and fatalities to judge its own performance.

41. 60 Minutes, CBS, 18 September 2022, <https://www.cbsnews.com/news/president-joe-biden-60-minutes-interview-transcript-2022-09-18/>.

42. Jacob Stern, ‘Hundreds of Americans Will Die from Covid Today’, *The Atlantic*, 16 September 2022.

43. ProMED, or Program for Monitoring Emerging Diseases of International Society for Infectious Diseases, is a non-profit scientists’ organisation.

The Chinese people supported these key performance indicators in the government's COVID-19 approach. There was an alignment in how the authorities and the people saw their social contract with each other.

Chinese leaders were advised by experts that China's strategy ought to focus on containment at the epicentre in Wuhan and Hubei. There was no proven treatments or vaccine for a new coronavirus in January 2020. China decided on the toughest approach to suppress the virus through a lockdown to cut human-to-human transmission for an extended period; and used strong mitigation measures elsewhere in the country. Chinese experts considered this strategy was the key to China's success. Chinese leaders decided to accept the enormous pain this would cause to the people and the economy. The political risk was high—losing the fight would hurt the credibility of the leadership and the Chinese Communist Party. The Chinese government's approach was only possible because the Chinese people had a very high level of political trust in the national government. From the people's perspective and despite much complaint and suffering, it was precisely at such times that leaders had to make tough decisions.

The enormity and courage of China's choice in 2020 could be seen from the WHO Beijing resident representative's description of the Wuhan lockdown—that it was 'unprecedented in public health history' and mass quarantine 'was new to history'. That view should be seen within the context of prevailing views. For example, a WHO publication in March 2019 did not recommend quarantine because 'there was no obvious rationale for this measure, and there would be considerable difficulties in implementing it'.⁴⁴ Another report published six months later by the Center for Health Security at Johns Hopkins University noted quarantine was likely not effective in controlling highly transmissible respiratory pathogens like influenza and highlighted the 'difficulty of implementing such measures on a large scale'.⁴⁵

There was a measure of gloating among US and other Western commentators starting in February 2020 that the virus could be China's 'Chernobyl Moment' and that the Chinese leadership might collapse. By March 2020, China's methods were crushing the virus. Containment measures through extensive testing, tracing, and isolating cases, as well as stopping non-essential activities, helped to cut transmission. The result of the extended lockdown in Wuhan and Hubei was remarkable—it set a new historical example in infectious disease control. The level of trust that the Chinese had in their government rose to 90 per cent in 2020. US experts did not miss the effectiveness of the

44. WHO, 'Non-Pharmaceutical Public Health Measures for Mitigation the Risk and Impact of Epidemics and Pandemics Influenza', Global Influenza Programme, 19 September 2019, <https://apps.who.int/iris/bitstream/handle/10665/329438/9789241516839-eng.pdf>, 16.

45. Johns Hopkins Center for Public Health, 'Preparedness for a High-Impact Respiratory Pathogen Pandemic', September 2019, https://www.centerforhealthsecurity.org/our-work/pubs_archive/pubs-pdfs/2019/190918-GMPReport-respiratorypathogen.pdf, 57.

Chinese approach,⁴⁶ but it was probably unworkable in the United States as Americans' trust in their government was no more than 40 per cent.⁴⁷

The US experience could not be more different than China's. As a two-party system with regular elections for the legislature and the presidency, a change of leadership presents a fresh start. The legitimacy of the US political system comes from elections, and if performance was found wanting, the people could elect different leaders with different policies at the next election. Despite elections, political trust in the United States is low, as discussed in Chapter 1. Beyond the issue of political trust, there were too many arguments within the White House on what to do in 2020. There were arguments about the cost of mitigation to keep COVID-19 in check, and there were strong views that the cost outweighed the benefits. What was agreed was for the US government to support the speedy development of vaccines to bring about herd immunity. This justified the enormous funding for vaccine development. It set a record in the speed of their development and approval for use in about a year. Although vital in the fight against COVID-19, vaccines were not the quick one-time 'silver bullet' that had been hoped for due to vaccination resistance by a not insignificant portion of the population, and boosters were also needed as effectiveness waned after several months. The lesson here is that the availability of vaccines did not mean other forms of protection were no longer needed.

As China's efforts were bearing fruit, the United States had 40,000 COVID-19 deaths by mid-April 2020. Trump said deaths could be 50,000 to 60,000, then revised it to 60,000 to 70,000 before further adjusting it to 100,000 deaths the following month. In early May, the White House projected 100,000 to 240,000 deaths if good mitigation measures could be implemented.⁴⁸ Infections and fatalities continued to rise through 2020. The United States had lost its way, as containment failed in the early days and mitigation measures were patchy. Beyond what critics called 'the Trump factor', the many disconnects and vulnerabilities of the US healthcare system, as shown by the *Crimson Contagion* simulation in 2019, proved accurate with the onslaught of COVID-19. This was not just the inattention and neglect of one administration or a particular congressional term of office, as the problem could be traced back many years.

Indeed, a change of administration in January 2021 and greater attention to dealing with the virus could not overcome many years of budget cuts that led to a myriad of weaknesses in the healthcare system, especially as dealing with COVID-19 became a highly charged partisan issue in the country. For example, Republican-led states fought the Biden administration for overstepping its authority with a plan to require most US

46. Harvey V. Fineberg, 'The Weeks to Crush the Curve', *New England Journal of Medicine* 382, no. 17 (23 April 2020), <https://doi.org/10.1056/nejme2007263>.

47. According to the Edelman Global Trust Barometer Report, the rate of public trust in the Chinese government was 84 per cent in 2018, 86 per cent in 2019, and 90 per cent in 2020. Over the same period, Americans' trust in their government ranged from 37 per cent to 40 per cent.

48. Patrick Smith, 'Trump Warns Coronavirus Death Toll Could Reach 100,000', *NBC News*, 4 May 2020, <https://www.nbcnews.com/politics/politics-news/trump-warns-coronavirus-death-toll-could-reach-100-000-n1199161>.

workers to be vaccinated or regularly tested. In a January 2022 ruling, the Supreme Court allowed the mandate for health workers but blocked the vaccinate-or-test mandate for other workers on the basis that it was for the states, not the federal government, to decide. It is beyond the ambit of this chapter to discuss these legal issues. Suffice to note that it is very much a part of US political culture to use the courts to settle issues that are seen as affecting the division of power between the federal and state governments.

The US political leadership was always greatly concerned about the health of the economy. Opening up the economy in 2020–2021 and ‘living with COVID’ in 2022 were the dominant narratives alongside ‘freedom of choice’ in limiting restrictive mitigation measures. In the United States, it was seen as acceptable to open up at the expense of a higher number of infections and deaths. The Chinese leadership put health and lives first, the consequence of which was to stay with a long period of stringent measures. Yet, despite the initial shock of the harsh lockdown, China’s economy started to improve in May 2020. In 2020, China’s GDP grew 2.3 per cent and 8.1 per cent the following year, while that of the United States was at –3.5 per cent in 2020 and 5.7 per cent the following year (see Chapters 7 and 11). The US political establishment is unlikely to ever concede that China did a valiant job that produced positive results in 2020 and 2021. Likewise, it is difficult for the Chinese leadership to understand why Americans could accept such a high death rate from COVID-19.

Readiness to live with the virus: Different calculus

For governments, deciding on when to end pandemic measures or when to reinstate them during a new wave involves a complex balancing of health, economic and social concerns. Cases and deaths tend to decline during periods when stringent measures are in place but rebound when those measures are lifted. In March 2022, a group of prominent US public health experts suggested 60,225 as the number of acceptable yearly deaths from COVID-19 and other respiratory illnesses combined for the United States, which worked out to be one death per 2 million Americans, or 165 per day nationwide. This would be like an extremely severe season of the flu. At that rate, US hospitals could still cope.⁴⁹ Critics were concerned that death from COVID-19 was being normalised in the United States. In April 2022, the USCDC decided the decision to loosen or tighten restrictions would be made at the local county level depending on the capacity of its hospitals to handle a new influx of patients. The Chinese too had to grapple with how to proceed. The explosion of Omicron cases in the spring of 2022 that resulted in lockdowns confirmed China was unready to ‘live with COVID’. By the summer of 2022 in the United States, the issue was whether facemasks should be re-imposed as

49. Dolores Albarracín, Trevor Bedford, Thomas Bollyky, Luciana Borio, Rick A. Bright, Lisa M. Brosseau, et al., ‘Getting to and Sustaining the Next Normal: A Roadmap for Living with Covid’, March 2022, <https://www.rockefellerfoundation.org/wp-content/uploads/2022/03/Getting-to-and-Sustaining-the-Next-Normal-A-Roadmap-for-Living-with-Covid-Report-Final.pdf>.

infections rose (albeit relatively mild) but there was also a concern that it might be hard to enforce due to public resistance. Americans were enjoying being free from COVID restrictions. The American political establishment saw China's situation as being stuck in the mud. The Chinese government had to pivot to 'live with COVID' by December 2022, realising that its control methods were no longer working against Omicron and that vaccinating vulnerable groups became a matter of the highest priority, together with promoting booster shots, and importing pharmaceuticals produced by Western companies that had proven to be effective. As China faced a tsunami of Omicron cases at the end of the year, new COVID cases trended up in the United States alongside a spike in other infections, and the worst influenza season in two decades, further straining American healthcare capacity.

In the midst of the US-China conflict

The Trump administration marked the time of a visible and widening split in Sino-American relations. COVID-19 arrived as conflicts in trade and technology were already in full swing. An early spat arose from Trump calling the virus the 'Chinese' virus and the 'Kung flu'. On 24 March 2020, a bipartisan resolution was passed to condemn China's handling of the virus outbreak. In April 2020, several class-action suits were filed against China, seeking trillions of dollars over the outbreak in the United States, including one by the state of Missouri and another by Mississippi. It was perhaps too hard to accept that the carnage was caused by the fault of their own government. On 30 April 2020, Trump said he had reasons to believe COVID-19 originated from a virology laboratory in Wuhan. Since then, the issue of the origin of COVID-19 became an issue of not just scientific exploration but political contention between the two countries and will likely continue into the future (see Chapter 1).

A new narrative developed as the United States and Europe began to 'live with COVID' by easing restrictions during the first quarter of 2022. This narrative emphasised that China's success with its zero-COVID policy could not be sustained because tough mitigation would be increasingly costly while also having reduced effectiveness in face of the highly transmissible Omicron, and that China's refusal to abandon its policy was due to systemic obstinacy. China was annoyed that the head of the WHO, Tedros Adhanom Ghebreyesus, said on 10 May 2022, that 'we don't think that it is sustainable, considering the behaviour of the virus now and what we anticipate in the future' and that a 'shift in approach would be very important', as the Chinese leadership was dealing with the outbreak in Shanghai. One line of criticism was that the Chinese leadership could not easily adjust its policy because it had invested so much in its zero-COVID policy that it had become political and a part of the ideological competition between the lackadaisical West versus the more cautious Chinese approach,⁵⁰ while another line of criticism was the Chinese political system was too autocratic and rigid to change

50. Jeremy Goldkorn, 'China's Covid-19 Spike and a Clash of Civilization', *SupChina*, 1 April 2022.

even when it was in its own best interest to do so.⁵¹ Critics of China saw the ‘living with COVID’ versus the cautious Chinese approach in black-and-white terms rather than considering whether they were appropriate under the circumstances. Furthermore, critics saw China as posing a threat to the world because there would be more and more outbreaks, resulting in more and more lockdowns that would lead to unhappy citizens, greater economic gyrations, and frequent disruptions to global supply chains that would harm not only the Chinese economy but the rest of the world too.⁵² When there were isolated grumbles in September and October, and explicit protests in November 2022, it was seen as confirmation that the authoritarian system face a major crisis. These perspectives were variations of the ‘Chernobyl Moment’. As this book went to press, the situation was grave—Omicron swept across China very quickly. The leadership’s pivot to managing COVID relaxation and prioritising vaccination among the elderly and providing enough antiviral therapies for its people, including imported ones, once again tested the Chinese Communist Party’s ability to mobilise resources, gain the cooperation of the Chinese public, as well as whether it could manage China’s reopening in a way that minimised fatalities and economic damage.⁵³ The chaotic scenes that Americans witnessed in 2020 in the United States in clinics, hospitals, and mortuaries with their first COVID wave was happening in China.

Negative views about China might have also been affected by the overall negativity in the West, particularly the United States, about China and its political system. Naturally, Chinese officials saw things differently. A line of defence was out-of-control COVID-19 in China would not serve anyone’s economic interest and would hinder supply chains. The Omicron outbreak in 2022 did not lead to China closing down the country and its economy—the government believed that while officials were not blameless, China had learnt to target closures to limit socio-economic impacts. China’s main defence lies in numbers. If the Chinese people had died from COVID-19 at the same rate as Americans between January 2020 and May 2022, China’s COVID-19 fatalities would be more than 4.2 million. China’s COVID-19 fatalities at the end of May were 14,600, and in early October were under 26,600 compared to over a million in the United States. According to Ma Xiaowei, the director of the NHC, ‘China’s anti-epidemic experience shows that having 1.4 billion people holding the line of defence is the greatest contribution to international anti-pandemic efforts.’⁵⁴ Along this line of thinking, China has 18.3 per cent of global population and contributed 0.16 of COVID cases and 0.08 per cent of related deaths worldwide. This meant COVID’s incidence

51. Huang Yanzhong, ‘The Collateral Damage in China’s Covid Was: Are Beijing’s Harsh Measures Undermining Its Old on Power?’, *Foreign Affairs*, 17 May 2022.

52. Ian Bremmer and Cliff Kupchan, ‘Risk 1: No Zero Covid’, Eurasia Group, 3 January 2022, <https://www.eurasiagroup.net/live-post/top-risks-2022-1-no-zero-covid>.

53. Kathy Leung, Gabriel M. Leung, and Joseph T. Wu, ‘Modelling the Adjustment of COVID-19 Response and Exit from Dynamic Zero-COVID in China’, *medRxiv*, 14 December 2022, <https://doi.org/10.1101/2022.12.14.22283460>.

54. Jack Lau, ‘China Sticks to Strict Plan: Health Minister Says Swift Response Means Time Needed to Contain Outbreaks Has Been Cut from a Month to Two Weeks’, *South China Morning Post*, 3 December 2021.

rate in Mainland China was only 1/483rd of the United States', and its mortality rate was 1/785th of that of the US. From this perspective, the Chinese leadership saw no reason for critics to cast doubt on its zero-COVID strategy.⁵⁵ As for disruptions to global supply chains, China's total imports and exports for 2021 exceeded US\$6 trillion for the first time, and it could be argued that China played a role in keeping supplies up and prices down. Nevertheless, the Chinese economy had slowed down in 2022, and it was a cause of public discontent. More concerning still was losing the grip on Omicron and having to face rising fatalities. China paid the price of having failed to prioritise vaccinating the elderly and promoting booster shots, plus the earlier refusal to import Western-produced vaccines and antiviral drugs when the Chinese COVID-control methods no longer worked to stop the spread of Omicron. The Chinese government had to pivot when it realised that it had to.

Beyond conflict to cooperation

The Delta and Omicron variants provided two important signals for the world. First, new variants could indeed evade the protection of vaccines, and second, not only should social restrictions continue to some extent depending on circumstances—a particular tough message for Americans—but as long as people across the world remained unvaccinated, new strains of the virus would continue to develop, and the increased transmissibility and immune escape of the latest variants will mean that herd immunity through vaccination alone is likely impossible. Hence, there could be more ups and downs in infection rates until the pandemic truly receded.

Cooperation between China and the United States will help end COVID-19 and prepare for future pandemics. Over the decades, the two countries had in fact worked together positively. The two countries have many areas where cooperation would be helpful instead of finger-pointing at each other. Chapter 13 provides a record of their previous cooperation and makes observations about the areas in which they could cooperate.

55. Wang Xaioui, 'Experts: Dynamic Zero-COVID Policy Still Key', *China Daily*, Hong Kong edition, 14 October 2022.