# Centralization vs Decentralization in Covid-19 responses: Lessons from China

**Authors**:

Aofei Lv, Ting Luo* and Jane Duckett

**Abstract:**

Researchers have begun to examine whether centralized or decentralized (or federal) political systems have better handled the Covid-19 pandemic. In this paper, we probe beneath the surface of China's political system to examine the balance between centralized and decentralized authority in China 's handling of the pandemic. We show that after the SARS epidemic of 2003 , China adjusted the central–local balance of au thority over systems to handle both the detection and early response phases of health emergencies. In an attempt to overcome problems revealed by SARS, it sought both to centralize early infectious disease reporting and to decentralize authority to respond to local health emergencies. But these adjustments in the central–local balance of authority after SARS did not change "normal times" authority relations and incentive structures in the political system. As a result, local leaders had both the authority and the incentive to prioritize tasks that determine their political advancement at the cost of containing the spread of Covid-19. China's efforts to balance central and local authority shows just how difficult it is to get it right, especially in the early phase of a pandemic.

**Keywords**: Covid-19, China, early response, centralisation, decentralisation

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* Corresponding author

Researchers across several disciplines have examined whether centralized or decentralized (or federal) political systems have better handled the Covid-19 pandemic (e.g .Lizardo 2020; Desson et al. 2020). Some have argued that centralized systems have the capacity to mount a rapid response, prevent local competition over resources, act in the national interest (Gaskell and Stoker 2020; Desson et al. 2020) and prevent a fragmented response (Huberfeld, Gordon, and Jones 2020). Some cite China, alongside South Korea and Japan, as an example of how a centralized system can enable a coordinated and effective response (Burki 2020; X. Zhang and Siu 2021; Xing and Zhang 2021; Qu and Lv 2021). Others, however, have argued that decentralized or federal systems such as Germany's or Canada's produced a more flexible response that enabled regional governments to play to local strengths and deal with local circumstances (Heitmueller and Roemheld 2020). Several have concluded that there is not a straightforward answer, and in fact a mix of central and local that plays to a country's institutional capacity works best (Aubrecht et al. 2020; Heitmueller and Roemheld 2020).

But researchers have so far focused almost exclusively on the 'response' phase of the pandemic – on testing and quarantining, procuring and distributing personal protective equipment, and maximizing intensive care capacity once the pandemic is underway. They have so far neglected the critical early 'preventive' or 'detection' phase of the pandemic (on pandemic phases, see World Health Organization 2009; 2018). And yet it is in this phase – in China – that a highly-centralized political system fell short, enabling Covid-19 to spread out of control and become a global pandemic (Yanzhong Huang 2020). A local government (Wuhan city) prevented cases from being accurately identified and reported upward to the central government and ignored National Health Commission (NHC) instructions to restrict mass gatherings. If centralization helped China in the pandemic response phase from around January 20 onwards – facilitating a swift and decisive top-down mobilization of resources to contain

the outbreak and then eradicate it – why it did not work better in the early detection phase when centralized systems might also be expected to have an advantage?

In what follows, we first show that even in China's highly centralized political system there are elements of decentralized authority. Here we build on work that has argued that although the People's Republic of China is not a federal system, it combines elements of centralization and decentralization – with the mix varying over time and across policy areas (e.g., Mertha 2005; L. C. Li 2010). We show that after SARS, China adjusted the central–local balance of authority over systems to handle both the detection and early response phases of health emergencies. In an attempt to overcome problems revealed by the SARS outbreak, it sought both to *centralize* early infectious disease reporting and to *decentralize* authority to respond to local health emergencies. But these adjustments in the central–local balance of authority in fact reinforced local authority and undermined central authority, helping local governments to override the health emergency detection and response system. Moreover, the adjustments did not change the "normal times" incentive structures for local leaders. These leaders' political career advancement is conditional on their success in maintaining stability (preventing social unrest) and promoting economic growth, rather than their good handling of a health crisis. Thus, the Chinese political system's particular blend of centralization and decentralization, reinforced by post-SARS reforms, led to disastrous results in the early phases of the Covid-19 outbreak. We conclude that China's efforts to balance central and local authority shows just how difficult it is to get it right in the early detection phase of a pandemic. Because post-SARS reforms did not change "normal times" authority relations and incentives in the system, similar problems recurred but in different forms in the early detection phase of Covid-19.

**Balancing centralization and decentralization in China**

China's leaders face challenges governing a country that is both vast and diverse in terms of population and territory. To maintain central control, they have organized the political system in a five-level hierarchy running vertically from the top (national) level to the lowest (township) that concentrates political power in a small number of Chinese Communist Party (CCP) leaders and top officials at the center. At each level in the political system's hierarchy, there exist two distinct bodies – the government and the Party Committee. Party leadership and one-party rule is ensured through the arrangement that at each level, the Party Committee leads the government with the Party Secretary being the de facto top leader and key positions in the government, such as the head and deputy heads of the government, being determined by the Party (Luo 2014). Through this arrangement, the CCP centralizes its power and ensures governments at all levels follow the Party's line and direction. In the event of an emergency, this arrangement also allows the CCP to quickly centralize decision making and coordinate a centralized response as it did during the Covid-19 pandemic after January 20, 2020 (Xing and Zhang 2021).

Yet if the central leadership is to encourage economic development and local initiatives, it must delegate some authority and responsibilities to local governments, especially provincial governments, giving them autonomy and power within their administrative jurisdictions (Mertha 2005). The result of this is the co-existence of vertical and horizontal authority (Chung 2000). Local officials in government departments at all levels within the political system are accountable to two types of leaders – their local leaders at the same administrative level (e.g., the governor, mayor or party secretary of their locality, referred as horizontal leaders) and the leaders of their functional bureau at the next level above in the hierarchy (e.g., health commission, referred as vertical leaders). These two types of leaders – the horizontal and vertical leaders - have different kinds of authority over local officials. The horizontal leaders

possess a leadership role and issue binding orders to local officials. The career advancement of local officials hinges on how they carry out these binding orders from the horizontal leaders. The vertical leaders have professional relations with local officials, based on non-binding instructions that are intended to ensure the implementation of central policies (Mertha, 2005). Therefore, local officials normally prioritize binding orders from their horizontal leaders over non-binding instructions from their vertical leaders (Zhong 2003).

The cadre evaluation system determines how local government leaders – whose orders local officials prioritize – are evaluated. Local government leaders are evaluated according to their performance of differently-weighted tasks. At times when local officials with limited resources and attention are assigned contradictory tasks, they will selectively implement central policy and directives (L. Li and O'Brien 1999). Tasks with clear and measurable policy goals (such as economic growth) are more likely to be prioritized, sometimes at the cost of lower-weighted or harder to measure tasks such as those relating to environmental protection (Mei and Pearson 2014). Social stability and economic growth are the two most important performance targets that will seriously affect local leaders' political career. Of these, social stability is the most crucial because political protests or street demonstrations – particularly during important political events – can end a leader's career (Edin 2003; Nie, Jiang, and Wang 2013).

The central government is aware that giving authority along the horizontal line to local governments might undermine central control and implementation of some national policies. There is ample evidence of local officials in China failing to comply with directives from the center (Mei and Pearson 2014). But decentralized authority, which has empowered local officials to make decisions over economic policies since the 1980s, has been seen as a key driver of rapid economic development (Oi 1999; Yasheng Huang 2002; Heilmann 2008). Too much centralization through the vertical line is seen as running the risk of stifling local growth

and undermining local government initiatives, coordination and responsiveness to local conditions. As a result, the Chinese leadership is torn between a desire to centralize power vertically and decentralize power horizontally, and has shifted the balance over time and across policy areas (Heilmann 2008; Schubert and Alpermann 2019; Mertha 2005; L. C. Li 2010).

The co-existence of vertical and horizontal authority and the shifting balance between the two are evident when we look at changes in central versus local authority in China's infectious disease and emergency response systems. After the SARS epidemic of 2003, China's infectious disease reporting was centralized, but its public health emergency response system was decentralized (Qi 2020). The central government set up a Disease Prevention and Control Information System (DPCIS) under the China Centre for Disease Control (China CDC) to centralize the flow of infectious disease information and prevent local governments from hiding outbreaks as they had done in the early phase of the SARS epidemic (China CDC 2007). The system was officially launched on January 1, 2004, to promote real-time surveillance and accurate reporting of infectious diseases, and its role was first legalized by a 2004 amendment to the Infectious Diseases Law (Standing Committee of the National People's Congress 2004). In contrast with past practice, whereby disease information was reported upwards monthly, level by level, the new system was designed to provide real-time case reporting and sharing between local and central levels. This system aimed to centralize disease information.

*Insert Figure 1 about here*

In the post-2003 system, DPCIS surveillance works through a hierarchical reporting structure that runs upwards from hospitals and clinics to the local and national China CDCs and local health commissions and the NHC (Figure 1). Doctors do not have direct access to the DPCIS; instead, designated offices within hospitals and clinics – usually the "Public Health

Department" – are authorized to use it. Once disease information is reported electronically on this online system, the CDC branch of the district or county where the hospital is located will automatically be alerted. The information is stored centrally in the national disease database, where it is accessible to all relevant health authorities, including the China CDC and its local branches and the NHC and its local health commissions.

After 2003, China also shifted to a horizontal response system that empowered local governments to coordinate work across many functional authorities in an attempt to facilitate a faster, more efficient and holistic emergency response (Standing Committee of the National People's Congress 2007). Before SARS, the NHC and local health authorities would have led a health emergency. But SARS showed that this vertical response system was inefficient in managing responses to complex emergencies that involved other parts of the governmental system. After SARS, in 2007, the national legislature therefore promulgated the "Emergency Response Law of the People's Republic of China" (Standing Committee of the National People's Congress 2007), establishing a new emergency response system (ERS). This law categorizes public health emergencies into four levels, from Level I ("especially serious") through to Level IV ("ordinary") (Standing Committee of the National People's Congress 2007). In a Level I emergency, the national government (State Council) is responsible for organizing and implementing the emergency response, but in Level II, III and IV health emergencies, responsibility rests with the local government (State Council 2006). Local health authorities – the local health commission and local CDC – must then obey the local government (see the horizontal line in Figure 1), which has the authority to direct disease surveillance, determine the emergency level, decide when public warnings are issued, and coordinate the emergency response. As a result, the NHC can advise but has no decision-making authority in emergencies below Level I. Instead, it is responsible for formulating technical standards and guidance for

new infectious diseases, providing training, and inspecting and supervizing local emergency responses in key localities (State Council 2006).

In theory, the DPCIS and ERS should complement each other to produce an efficient and timely response to a severe infectious disease-related emergency. The ERS should enable local governments to coordinate containment measures when an infectious disease remains a local problem, while the DPCIS should allow the central government and health authorities to track an infectious disease and to promptly intervene if it exceeds the emergency response capacity of the local government and an escalated response is needed.

However, China's post-SARS DPCIS and ERS reforms actually undermined each other in the detection phase of the Covid-19 pandemic when the emergency level was below Level I, contributing to a delayed emergency response before January 20, 2021. As we will demonstrate, the decentralized ERS gave Wuhan (city) and Hubei (provincial) governments the legal authority to handle the initial Covid-19 outbreak, including diagnosing and reporting cases, which in effect overrode the centralized DPCIS system running vertically (vertical line in Figure 1). This overriding was possible because local health authorities and hospitals, who are assigned the task of reporting to the DPCIS system, prioritized binding orders from their local leaders at the same administrative level (the horizontal line) over their professional leaders of the functional bureau at the next level above in the hierarchy (the vertical line). This loophole allowed local governments to undermine efforts to centralize disease reporting in the early detection phase.

**Centralized disease reporting: a passive system overseen by a powerless China CDC**

Two problems in the DPCIS undermined efforts to centralize disease reporting. First, the DPCIS's surveillance and reporting role relies heavily on hospitals, clinics and local CDC branches to report cases in a timely way, but the authority that manages the system – the China

CDC – has no administrative authority to enforce reporting. The China CDC establishes, manages and provides technical support to the DPCIS (State Commission Office of Public Sector Reform 2018). It also provides technical guidance to local CDCs and collaborates with hospitals and clinics to offer technical services (H. Zhang et al. 2017). However, it has only an advisory role in the political system. It has no authority to make and enforce health policies and measures and no administrative authority over its local branches or hospitals and clinics (see the vertical line in Figure 1).

Second, both the infectious disease reporting system and the emergency response management system require agencies to *report* but do not require them to report *via* the DPCIS. Although the 2004 and the 2013 amendments to the Infectious Diseases Law stipulate penalties for concealing the truth about – or making a false report, or delaying report on – an epidemic situation, regulations on the use of the DPCIS have no similar clause relating to legal responsibility and penalties if hospitals or other organizations do not use it (Standing Committee of the National People's Congress 2004; 2013; State Council 2006). Although the Infectious Disease Information Reporting Management Standards clearly stipulate that unknown infectious diseases shall be reported through the system within two hours (NHC 2015), these standards are not set out in law and so are not legally binding.

These two problems can potentially undermine centralization of disease reporting, especially in the early detection phase of a pandemic. From December to mid-January 2020, the DPCIS failed to track the emergence of the Covid-19 because hospitals in Wuhan did not use it to report the early suspected cases of "unknown viral pneumonia". Although doctors in Wuhan began to report cases to their hospitals' Public Health Departments in late December, hospitals reported these cases verbally via phone calls to their local CDC instead of using the DPCIS (Xin et al. 2020).

From at least the end of December, as we demonstrate below, ample sources suggested that the Wuhan local health authorities instructed hospitals to refrain from reporting cases directly through the DPCIS. On December 30, Wuhan Municipal Health Commission (WMHC) issued an "Urgent Notice" to all clinics and hospitals in Wuhan ordering them to survey cases of unknown pneumonia admitted in the past week and report the cases to the WMHC via email by 4pm the same day (Jingshu Zhang and Wang 2019). Subsequently, in early January, only when Wuhan and then Hubei Provincial Health Commission gave their approval could confirmed cases be reported upwards via the DPCIS (Yang 2020). Doctors from Wuhan Central Hospital also revealed that instructions to report cautiously in their hospital turned into "trying not to report at all" (Fan 2020). As a result, the WMHC reported no new confirmed cases in Wuhan between January 5 and January 17 (China CDC 2020). Local governments' actions undermining the centralized of disease reporting system are likely to have prevented the NHC and State Council from fully understanding the spread of the disease and delayed their decision to intervene.

**Decentralized emergency response: hijacked by local interests**

A key argument against decentralization is that the response to a potential pandemic is likely to be hijacked by local interests. Lizardo (2020) argues that local authorities are mandated to represent local interests, while a central government is mandated to represent the whole nation's interests. In the context of a pandemic when localities might engage in a zero-sum game against each other, only the central government can have a holistic view of the problem, facilitate collaboration between localities, and achieve an optimal outcome.

China's response to Covid-19 in the early detection phase encountered precisely this problem. Contrary to the intentions behind the new system, the Wuhan and Hubei governments first hid the outbreak and then played down its severity. Not only did they order hospitals and

local health authorities to bypass the DPCIS and report cases only to them, they also ignored advice from the NHC and the expert teams it sent to Wuhan in January. The WMHC made exposure to the Hua'nan seafood market a necessary condition for confirming “unknown viral pneumonia” cases, changing the NHC expert teams' official diagnosis and treatment protocol (Fan 2020; Gao 2020; Xin et al. 2020; Yang 2020). This prevented cases from being accurately identified and so led to underreporting.

Local officials also ignored advice from the NHC. For example, on January 15, Ma Xiaowei, the NHC director, reportedly suggested several proactive measures, including controls on outward transportation and restrictions on mass gatherings (State Council Information Office 2020). Yet the Wuhan Administration of Culture and Tourism went on to launch Spring Festival tourist activities, and local authorities organized an annual New Year banquet in the “Baibuting” residential community that was subsequently confirmed to have accelerated the spread of the disease. Hubei's Provincial Party Secretary, Governor and other top leaders even attended the Hubei Provincial Spring Festival Gala (Ding, He, and Mo 2020; Wuhan Municipal Bureau of Culture and Tourism 2020; Jin Zhang 2020; Zhao 2020).

Local leaders in Wuhan and Hubei acted as they did because they were incentivized by the “normal times” cadre evaluation system. January was the time of the annual meetings of the local legislature and a high-profile advisory body (the so-called “Two Sessions”), which deliver and discuss an annual government report with the local legislature approving policies and passing local legislation. During Wuhan's 2020 Two Sessions (January 6 to 10), the WMHC provided no official update on unknown viral pneumonia cases. During Hubei's Two Sessions (January 11 to 17, held in Wuhan because it is the provincial capital), the WMHC reported no new confirmed cases in its daily official update (China CDC 2020). The same social stability imperative encouraged officials to go ahead with the annual New Year banquet in Baibuting on January 18. Baibuting had been given a national model residential community

award in 2001, and its annual banquet is a showcase for social stability (People's Daily 2001; Zhao 2020). Spring Festival is also an important holiday season for local governments, as it helps boost the tourist economy. Restricting mass gatherings, controlling outward transportation, and revealing the outbreak's actual status would have potentially undermined local economic growth. This explains the distribution of free tickets for tourist attractions in Wuhan.

**Conclusion**

As we have demonstrated, China's decentralized emergency response system delegated authority to the local governments for handling the initial Covid-19 outbreak. With local leaders' relations with local officials unchanged, this adjustment reinforced local authority. In the early detection phase, it enabled the local governments of Wuhan and Hubei to override the centralized infectious disease reporting system that is in the charge of the vertical health authorities. The cadre evaluation system incentivized the local leaders of Wuhan and Hubei to continue to prioritize stability and economic growth, rather than tackle the health crisis. As a result, they missed an important window of opportunity to keep the initial spread of Covid-19 under control. Adjustments in the central–local balance of authority after SARS did not change "normal times" authority relations and incentive structures in the system. Local leaders had both the incentive and the authority to prioritize tasks that determine their political advancement at the costs of handling the spread of Covid-19.

There are potential alternative explanations to the delayed response if, as rumored, the virus had emerged in the Wuhan Institute of Virology (WIV). However, our evidence on the local authorities' actions seems to indicate that they were unaware of that and their actions were not driven by it. The WIV is an institute of the Chinese Academy of Sciences (CAS) under the central government, and thus local governments in Wuhan and Hubei have neither

an incentive nor the authority to cover up for it. If the WIV was the source of the leak, and this was known to the CAS but not the central government, the CAS would not have had the authority to instruct the local governments on how to act. As we saw, the NHC, which is part of the central government, was ignored by the local governments in Hubei and Wuhan. So, if the Hubei and Wuhan governments were being instructed to cover up the outbreak, then it would have been by another authority separate from the NHC. While it is possible that some other central authority did this, the Hubei and Wuhan authorities' actions do not seem consistent with that. For example, they would not have closed Hua'nan seafood market on January 1, 2020 one day after publicly confirming cases of viral pneumonia in Wuhan (China CDC, 2020). They would not have made exposure to the Hua'nan seafood market a necessary condition for confirming "unknown viral pneumonia" cases. And a secret national "patriotic health campaign" would not have targeted markets in mid-January (National Patriotic Health Campaign Commission 2020; Snape 2020).

There are important implications of our paper for China's political system and response to public health emergencies. Our findings suggest that local leaders' silencing of the DPCIS system and prioritization of social stability and economic growth over handling infectious disease are deep-rooted in China's political system. To make the DPCIS work, one potential solution would be to give professional health authorities in the vertical line legally-binding authority over disease reporting and setting public health emergency levels. At the same time, the DPCIS should be connected to hospitals' diagnostic and treatment systems to allow automatic detection of infectious disease outbreak and big data analysis. These measures would take away local governments' authority over the release of important disease information and the activation of appropriate emergency response. However, there are limitations to even these measures. As long as horizontal leaders still have authority to issue binding orders and their performance evaluation prioritizes economic growth and social stability, the same problem

might recur, perhaps in different forms. Also, these measures assume the China CDC will act in the national interest and would not be affected by the Party's concerns and interests.

Although the one-party system allows the central government and the Party to step in and assert control in the event of a national emergency like Covid-19 (Xing and Zhang 2021), our findings also suggest caution about the conclusions on the role of the central government and the Party. The recentralization by the central government and the Party in the response phase of Covid-19 did not eradicate the tension between vertical and horizontal authority or changed the incentives faced by local officials completely. Policy implementation in the response phase also varied at local levels and tensions between different authorities still persist, the discussion of which is beyond the scope of this article.

Our findings also have important implications beyond China for the question of whether centralized or decentralized political systems handle public health emergencies better. Centralization or decentralization is not the key of the problem; instead, the key lies in the incentives created by the system – intergovernmental relationships and how officials are evaluated. Given the incentives built into a political system, some functions might be better centralized and some decentralized. The allocation of functions also depends on the phases of the pandemic. More generally, containment measure standards, coordination of healthcare resources across the country, and data should be centralized, perhaps particularly in the detection and early response periods, as our findings have suggested. Yet, there are functions that can only be allocated to the local authorities, especially where adapting to local circumstances is important. For example, implementation of the standards, allocation of medical resources and surveillance of the status of the pandemic should rely on local expertise and networks, especially once the response is under way.

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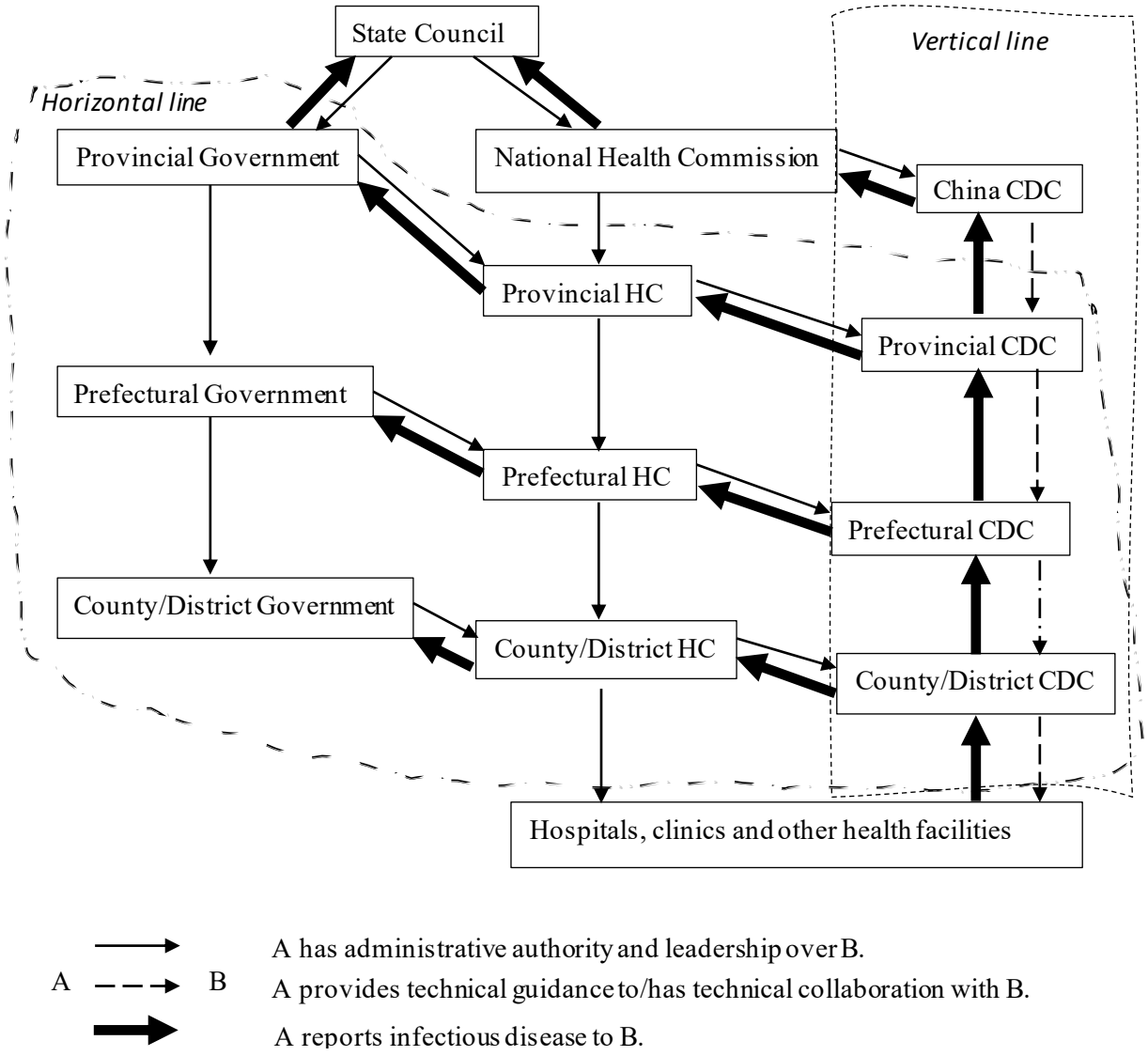


Figure 1 Institutional structure of China's disease control system and the reporting line for infectious diseases[1]

[1] Information on the relation between HCs and CDCs are from Wang, Liping, Xiang Ren, Benjamin J Cowling, Lingjia Zeng, Mengjie Geng, Peng Wu, Zhongjie Li, Hongjie Yu, and George Gao. 2019. "Systematic Review: National Notifiable Infectious Disease Surveillance System in China." *Online Journal of Public Health Informatics* 11 (1): e414. Xiong, Weiyi, Jun Lv, and Liming Li. 2010. "A Survey of Core and Support Activities of Communicable Disease Surveillance Systems at Operating-Level CDCs in China." *BMC Public Health* 10 (1): 704. Zhang, Honglong, Liping Wang, Shengjie Lai, Zhongjie Li, Qiao Sun, and Peng Zhang. 2017. "Surveillance and Early Warning Systems of Infectious Disease in China: From 2012 to 2014." *The International Journal of Health Planning and Management* 32 (3): 329–38.

## Appendix: an introduction to the media sources

**Mainstream official media with a Chinese government background**
*Freezing point* (*Bingdian*) is a weekly news magazine under the auspices of Communist Youth League. The articles cited in this paper were published on *Bingdian* Wechat account.

**Influential unofficial media**
*Caijing* is an independent magazine based in Beijing that covers societal, political, and economic issues, with a focus on civil rights, public affairs, and business. It was founded by Hu Shuli, who later left *Caijing* and establish *Caixin*.

*Caixin* is a leading news magazine for publishing investigative reports on political and financial topics. During Wuhan lockdown period, *Caixin* sent a journalist team to Wuhan and published series of onsite investigative reports.