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RESEARCH ARTICLE



## Public governance mechanism in the prevention and control of the COVID-19: information, decision-making and execution\*

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### ABSTRACT

In China, sub-provincial governments are responsible for managing public health emergencies. In the context of coordinating multiple stakeholders, the role of the local government can be defined as ‘meta-governance’. It shall provide rules to facilitate collective action and co-produce quality public services. However, the case of Wuhan suggests that some local governments still rely on the traditional administrative system, which hampers them in terms of issuing a sufficient response to the COVID-19 outbreak. Three measures can be taken to facilitate a public governance mechanism in public health emergency management. First, local governments can use the ICTs to create a more transparent information mechanism. The free flow of information could alert all stakeholders to potential emergencies, while the open government data form the base for cross-border collaboration. Second, a more comprehensive Public Health Emergency Preparedness is constructive for local governments in making quality and immediate decisions. This preparedness shall clearly define the responsibility of the involved agencies based on a careful evaluation of their qualification and capability. Third, the local government shall note that good governance requires more than an executive capacity based on command-and-control. It is necessary to develop the ability to work with stakeholders outside the bureaucratic system.

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## Introduction

In January 2020, the novel coronavirus disease 2019 (COVID-19) spread from Wuhan to Hubei Province and the rest of China, eventually spreading globally, within a short period. As of 8 February, when this article was completed, there had been 37,198 confirmed cases and 811 deaths in mainland China, figures that continue to increase daily. In the early hours of 31 January (Beijing time), the Emergency Committee of the World Health Organization (WHO) decided to list the COVID-19 outbreak as a ‘public

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health emergency of international concern' (PHEIC). Since then, the United States and other countries have issued travel warnings related to China.

The COVID-19 outbreak is a typical public health emergency. Its rapid spread has not only affected the lives of hundreds of millions of families, but it has also disrupted the pace of economic and social development, resulting in incalculable economic and social losses. In light of this, the question arises of whether the public administrators could have prevented the outbreak. On the other hand, if the outbreak and spread were unavoidable, what measures can we take to control the spread of the outbreak as far as possible? Furthermore, if the epidemic has already spread, how can we put a stop to the losses and reduce the economic and social costs through adopting more efficient public policies? In response to public health emergencies, the government is required to move quickly in a relatively short period, and effectively coordinate the division of labour and cooperation at all levels and departments within the administrative system. Besides, the government also need to work with the Medicare institutions, hospitals, other related private sector, non-profit organizations, as well as community members. It should increase public awareness of the spread of the epidemic without generating panic and suspend certain economic and social activities while ensuring that all of the basic living and human and material needs are met. Every public health emergency constitutes a significant test to the local government and its ability to handle it, which urgently requires the building of a Public Governance Mechanism with the participation of multiple stakeholders.

In response to such a sudden, specialised public health event involving multiple stakeholders, local governments need to shift their role from dominance to governance. This means that governments are no longer the sole providers of public services, but should instead set rules and establish an order for the interaction of multiple stakeholders for collective action.<sup>2</sup> In particular, information, decision-making, and execution are vital elements for local governments in building and running public health emergency management mechanisms. Using the theoretical framework of the public governance mechanism, this paper analyses the case of Wuhan (and Hubei Province) in responding to the coronavirus; the data and materials employed are derived from authoritative media reports, professional papers published in academic journals, official documents, and official organisations' self-reports, with source descriptions attached. This study conducts an academic analysis of the local governments' practices in responding to the novel coronavirus outbreak and aims to improve China's public governance mechanisms. In the short term, this work will help us to respond more effectively to the development of the epidemic and, in the medium to long term, it will help us to accumulate knowledge of public management, to prepare for a future in which we can respond to similar events in a less costly, more efficient way.

### **The governance mechanism for coping with public health emergency management: an analytical framework**

Public health emergencies caused by infectious viruses often quickly affect the entire population of a community within a short period of time. Public health emergencies may also have an impact on the health of citizens outside the community due to

population movements, amongst other factors. Therefore, public administrators need to respond quickly to public health emergencies, make professional, accurate judgments as swiftly as possible, and decide what level of emergency response mechanisms ought to be initiated. In general, emergency responses to public health emergencies include prevention, problem identification and risk determination, decision-making, execution, performance evaluation, recovery, and programme optimisation. This process requires not only the in-depth involvement of public health professionals but also the proactive diagnosis and treatment of patients by hospitals, doctors and social workers, as well as adequate medical supplies and extensive collaboration between the private sector, voluntary groups and community members. Based on the impact of public health emergencies, local governments also need to decide whether to act within administrative jurisdictions or even to interact with the surrounding area and higher levels of government in response to changes in the outbreak to achieve the necessary cross-regional, multi-level response. In the context of globalisation, some of the more significant public health events also require cross-border cooperation or assistance from international organizations, such as the WHO. Thus, responding to public health emergencies requires the establishment of a public governance mechanism with the participation of multiple stakeholders.

Despite the large number of participants, the government, especially local governments, remains a key stakeholder in initiating the public health emergency management mechanism and needs to assume the role of meta-governance. In public governance with multiple stakeholders, the responsibility of the government has not been weakened, merely transformed. As the government is no longer the sole undertaker of all of the work, it can extend its collaboration with actors outside the bureaucratic system. Recent studies on New Public Management, New Public Governance and Co-production suggest that cooperation across the sectors could provide quality public services and also reduce costs.<sup>3</sup> However, the critical role of the government in governance is to provide a communication platform and establish a regular order for the interaction of diverse stakeholders. In other words, the government shall build a governance mechanism to achieve the 'governance of governance'; that is, to assume the role of meta-governance and coordinate the collective actions of the participants by establishing rules.<sup>4</sup>

It is important to note that the government's role in coordination is not always achieved through authority. In public administration, the government is a bureaucratic system that has established a stable structure consisting of various sub-levels and departments, each of which has clearly defined responsibilities and operational procedures. Governments can decide on the actions of all levels and departments by relying solely on the internal structure and operating rules of the administrative system and using the command-and-control chain to issue authoritative instructions. However, as external actors may also participate, the government is now required to implement governance in a network-based environment. This change entails the government's need to leverage its authority to 'control' the other stakeholders carefully. Instead, it should pay more attention to how it can 'influence' the behaviour of other independent stakeholders through communication, or the establishment of a principle-agent approach to provide participants with new incentives and constraints.<sup>5</sup> Although the authority of the

government has weakened in the public governance mechanism that includes multiple stakeholders, this has not diminished the overarching responsibility of the government.

Accordingly, when the government constructs an emergency mechanism for public health emergencies, its task is not to determine a fixed structure and operational procedure, but to find approaches to affecting the actions of other stakeholders in the network and ensure the quality of governance. Here, information, decision-making and execution have become the critical links for the government to build a public governance mechanism for emergencies. First, the information mechanism is an essential complement to the traditional command-control chain. Recent studies suggest that 'information asymmetries exist commonly between public organizations and individual citizens and influence coproduction adversely.'<sup>6</sup> The information mechanism is the most critical tool for the government to influence the behaviour of the other stakeholders at a relatively low cost and foster spontaneous coordination between different stakeholders. Second, as a meta-governor in public governance, the government needs to improve the decision-making mechanism. It should work closely with the medical institutions and professionals to identify the problems, evaluate the risks and assess the need for resources to make appropriate response decisions. Third, given the need to assume the role of a 'gatekeeper' when dealing with a public health emergency, the government should also focus on the overall execution of its decisions. It needs to ensure that all agencies have sufficient capacity to implement the policies and coordinate the relationships with suppliers, the voluntary sector, and other bodies.

First of all, the government should pay attention to building an information mechanism for handling a public health emergency. Based on the decision-making model with bounded rationality, information can influence individual behaviour by changing individuals' understanding of alternatives and their consequences.<sup>7</sup> In public governance, it is difficult for the government to use its authority to replace the independent decision-making of the other stakeholders, but it can influence stakeholders most by adequately managing information. Among them, the government's information management mainly serves three objectives: first, for the decision-making of the government and its departments. After the outbreak of the public health emergency, the government lacks the time to collect information, but medical information from the front-line medical institutions can provide clues to help the government to identify the problem and assess the risk. With the development of the Internet, social media posts by early-stage patients and their family members can also provide a complementary alert.<sup>8</sup> The second objective is internal cooperation within the administrative system. Responding to public health emergencies requires the government to coordinate the actions of various departments in a short period, establish a cross-departmental network for the dissemination of information, and enable departments to cooperate proactively, rather than simply awaiting administrative instructions. The third objective is to coordinate with the public. Governments can guide the actions of the public, voluntary sector, suppliers, etc. by publishing reliable information. In recent years, the development of the Internet has made it more difficult for governments to manage information yet, at the same time, it provides a new channel for the release of government

information. Empirical studies have shown that social media can effectively guide citizens to respond to government emergencies following outbreaks of public health emergencies.<sup>9</sup>

Second, the government needs to establish a decision-making mechanism that can respond quickly and make professional judgments. As the meta-governor, the government is responsible for determining the level of response after a public health emergency in order to mobilise adequate and appropriate resources for the response. In public health emergency management, the government's decision-making mechanism needs to meet the two primary conditions of rapid response and professional judgment. Regarding rapid response, the virus can spread fast during public health emergencies and, if the government delays the decision-making or responds slowly, this can lead to the spread of the epidemic, which in turn will cause higher costs for society. It is worth pointing out that rapid response here not only refers to local governments' measures but also how proactive they are in developing operational emergency plans in advance. In terms of professional judgment, public health emergencies generally originate from a specific infectious virus. Thus, government officials in the relevant departments require the necessary knowledge of public health (especially of infectious diseases), or at least establish decision-making mechanisms that accommodate experts in public health and medical institutions and make professional judgments based on accurate information.

Third, governments need to establish efficient execution mechanisms. Mechanisms of governance in public health emergencies need to be implemented by a diverse group of stakeholders that includes, but is not limited to, the government. For specific tasks, such as the treatment of patients by specialised medical institutions and self-protection of potentially affected residents, the government's execution mechanism needs to provide the necessary material and resource support to the relevant stakeholders. To ensure effective implementation, the following three aspects are included; first, the government needs to ensure the implementation capacity of the administrative system itself, and check that the functional departments possess sufficient expertise to respond to public health emergencies adequately. Second, the government needs to make preliminary assessments regarding the role, responsibilities, resources and capabilities of other participating stakeholders to determine whether the qualifications of the stakeholders are sufficient to meet the needs when responding to public health emergencies. For stakeholders with inadequate capacity or resources, governments need to address the local needs by deploying external forces or providing resource support. Third, the government needs to coordinate its relationships with its suppliers, the voluntary sector, and other actors, by providing a platform for participation.

### **Public governance mechanism to deal with the COVID-19: the case of Wuhan**

The COVID-19 is not the first virus infection crisis that China has faced in recent years. In 2003, the outbreak of Severe acute respiratory syndrome (SARS) reminded China that it should strengthen its emergency response systems within the field of public

health. Since then, China has been challenged by Middle East Respiratory Syndrome (MERS), the Ebola virus, and other epidemics. As a public health emergency, it would be difficult to avoid the impact of the COVID-19 outbreak on manufacturing and people's lives, but the government can still improve the public governance mechanisms to predict the risks, control the epidemic, and reduce the losses. However, the outbreak and development of the COVID-19 has exposed many problems and shortcomings within the local governments' public governance mechanisms. In the early stages of the outbreak, local governments intentionally blocked the information provided by the front-line medical institutions to the public and the Chinese Center for Disease Control and Prevention (CCDC), and missed opportunities for intervention, which led to the rapid spread of the epidemic as a result of travel associated with China's Spring Festival. After decisions were made to seal off the city, the local government did not achieve the intended goal of controlling the population's movement. While implementing the policies, the local government failed to coordinate the relevant parties effectively, which resulted in a shortage of hospital supplies and caused social panic. The root cause of these problems lies in the fact that local governments still continued the exclusive policy practice, and failed to realise that the vigorous development of the market mechanism, the rapid growth of social forces and the widespread application of digital technology considerably broadened the boundaries and scope of governance. In other words, responses to the COVID-19 provided a new scenario of professional and diversified public governance, but local governments still adopted a relatively closed approach to information management and decision-making. In the process of execution, local governments had adopted an administrative command-and-control chain even when the administrative system was under-supplied and relied on the voluntary sector for resource support. The mismatch between the governance approach and the reality of the situation ultimately affected the response to the epidemic.

### *Information mechanism for the identification of and response to the COVID-19*

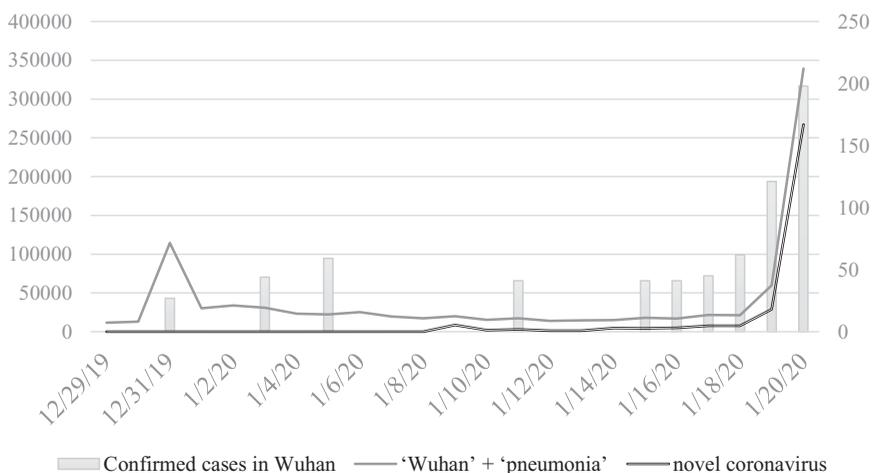
In the public governance mechanism of emergencies, in which multiple stakeholders are involved, information is the crucial factor influencing the actions of various stakeholders. In the classical public administration paradigm, governments monopolise authoritative information, which is mainly generated, circulated, stored and used to assist decision-making within the administrative system, and stakeholders outside the government are on the passive, receiving end. Under the new scenario of public governance, governments cannot and should not monopolise information, and instead need to pay more attention to the information resources provided by the external stakeholders and to publish information in a timely manner, based on the principle of transparency and the coordination of the actions of diverse stakeholders. However, a vital mistake made by the Wuhan municipal government in responding to the COVID-19 originated from the information mechanism. The local government has neither allowed the free, open flow of information from the front line and the grass-roots level, nor has it released accurate, sufficient information promptly; this led to the failure by all sectors of society to take measures to contain the impact.

First, the government affected the judgment of whether the COVID-19 could be transmitted human-to-human because it had blocked information from the front-line medical institutions and even curbed the sharing of information within communities by doctors and patients. In this public health emergency, a hospital was the first to discover a case of the COVID-19. Following this, between 27 and 29 December 2019, Hubei Provincial Hospital of Integrated Chinese & Western Medicine admitted seven patients with similar symptoms and soon reported this to the Health Commissions at both the Hubei Provincial and Wuhan Municipal levels on 29 December.<sup>10</sup> Following an investigation, the Wuhan Municipal Health Commission issued a 'Briefing on the current pneumonia epidemic situation in our city', on 31 December. It demonstrated that 'many cases of pneumonia were found to be related to the Wuhan Seafood market', while stressing that 'no human-to-human transmission has been found and no infected medical personnel have been detected'.<sup>11</sup> Since then, the Wuhan Municipal Health Commission reiterated that there was no infection of medical personnel and no clear evidence of human transmission in the next three briefings. On 15 January 2020, the Wuhan Municipal Health Commission adjusted its statement in the 'Q&As Regarding the Novel Coronavirus-infected Pneumonia Epidemic', indicating that 'no clear evidence of human-to-human transmission has been found, and the possibility of limited human-to-human transmission cannot be ruled out, but the risk of sustained human-to-human transmission is relatively low'.<sup>12</sup> Until 19 January, the Wuhan Municipal Health Commission repeatedly stressed that no cases were found as a result of close contact with other infected people.

On the other hand, the medical staff held different views. After the discovery of pneumonia from an unknown cause in the Hubei Provincial Hospital of Integrated Chinese & Western Medicine, several doctors had shared information on social media, warning relatives and friends 'not to go to the Hua'nán seafood market in the short term', 'to pay attention to wearing masks and ventilation', that 'quite a few people suffered from unknown pneumonia (similar to SARS)', etc.<sup>13</sup> Regarding the information posted on social media, the Wuhan Municipal Public Security Bureau released the news that 'eight rumour-spreaders were being investigated following the law' on 31 December (the day of the first 'Briefing') and three doctors were interviewed. This response may have been intended to avoid public panic, but such authoritative information control hindered the timely dissemination of useful information. Retrospective studies had shown that, in the confirmed cases of COVID-19 before 31 December, Wuhan had had quite a few cases of people who had not had direct contact with the Hua'nán seafood market; there were also seven cases of health care workers who had been infected with the virus between 1 and 11 January 2020.<sup>14</sup> Moreover, a member of medical staff interviewed by the public security alerted front-line health care workers to use protection through social media: 'medical practitioners who experienced the SARS in 2003 would know what I mean', as he noted the transmission between close contacts (family members) in the case of unexplained pneumonia treated on 8 January.<sup>15</sup> Even worse, the local government not only had blocked the information for the public but have stopped the hospitals from reporting cases to the Chinese Center for Disease Control and Prevention (CCDCP) as well. Local hospitals are stipulated to report unknown pneumonia via an online system to the CCDCP directly. The hospitals

in Wuhan did report these unknown cases from 3 to 10 January 2020. Since 11 January, however, the Hubei Provincial Health Commission instructed local hospitals to be prudent and do not report these unknown cases until they were jointly confirmed by the provincial and the municipal health commission.<sup>16</sup> The early information may be insufficient to support the ‘human-to-human transmission’ feature of the COVID-19 but was adequate to alert the government, hospitals and community residents to the precautions required.<sup>17</sup> Not to mention that accurate information is the base for epidemiologists to make a professional judgement. However, with information channels under tight control, the public and the specialists did not have access to useful information, and local governments also lost the diverse sources of information that are needed for informed decision-making.

Second, in the process of handling the COVID-19, local governments have been unable to establish an open, transparent and real-time information dissemination mechanism, or even adequate information sharing within the administrative system, making it difficult for the government agencies and members of society to adapt based on accurate information. Besides the early stage of problem identification, information mechanisms run through the whole process of public health emergency management, which can guide the administrative system and community residents to take protective measures to avoid the spread of infection, and also coordinate the suppliers, voluntary sector and other assistance to help to supply medical resources to patients. However, the information mechanism in Wuhan’s response to the COVID-19 failed to achieve these objectives. The government’s failure to release data on the cases transparently and openly, in turn, has led to a failure of the government agencies and community members to pay sufficient attention to the event and adopt preventive measures. Figure 1 shows the number of confirmed COVID-19 cases, published by Wuhan Municipal Health Committee, from 29 January 2019 to 20 January 2020,



**Figure 1.** Number of confirmed COVID-19 cases published in the Briefings of Wuhan Municipal Health Commission and Baidu Search Indexes.

Data source: The number of confirmed COVID-19 cases in Wuhan city comes from the Briefings of Wuhan Municipal Health Commission from 31 December 2019 to 20 January 2020, and the Baidu Search Indexes from the Baidu Index ‘keyword search trend’.

and the search results of 'Wuhan + pneumonia' and 'novel coronavirus' in the Baidu index. In comparison, Baidu users had the first 'Wuhan + pneumonia' search peak after the Wuhan Municipal Health Commission issued the first 'Briefing'. Since then, between 3 January and 16 January 2020, the number of cases reported by the Wuhan Municipal Health Commission remained at a relatively low level (41 cases), and it pointed out that there was no 'human-to-human transmission'. The Baidu index of 'Wuhan pneumonia' also reverted to a lower level; On 19 January, the Health Committee, for the first time, reported that the number of confirmed cases had exceeded 100 and, after the academic Mr Zhong Nanshan confirmed 'human-to-human transmission' on 20 January, the public paid rapidly increasing attention to 'the novel coronavirus pneumonia' and 'Wuhan + pneumonia'. This fact shows that the public has a high degree of trust in official information, although the Wuhan municipal government betrayed this trust. Data from retrospective studies confirm that COVID-19 cases did not stagnate between 3 and 16 January.<sup>18</sup> Regardless of the reasons why the Wuhan Municipal Health Commission failed to disclose the actual number of cases before 19 January, its Briefing led the public and relevant government departments to regard the pneumonia as less severe than it was. As a result, some functional departments in Hubei Province and Wuhan did not put a stop to collective activities until 22 January.<sup>19</sup>

Third, the local government lacks sufficient openness regarding the necessary information when responding to the epidemic. In addressing the public health emergency, the most prominent challenges posed by the increasing number of cases are the treatment capacity of the medical institutions and the provision of medical supplies. In the early stages of the outbreak, many areas in Hubei Province experienced a shortage of masks, protective clothing, kits and other medical supplies, and a large number of reports even confirmed that the first-line doctors were fatigued from working overtime. On the other hand, many suspected patients failed to receive proper medical care because of inadequate hospital access. To be fair, these phenomena resulted from the shortage of resources after the outbreak. However, local governments could still have alleviated the situation by establishing an open data platform to guide residents to seek reasonable medical care, avoid structural imbalances in resource allocation, and seek the help of superiors, suppliers and the voluntary sector. The use of digital technology by local governments in some areas of China may still be in its infancy, but Wuhan is one of the leading areas for piloting 'Internet plus government services'. Nevertheless, the Wuhan municipal government failed to build an open data platform in time to respond to the early stages of the outbreak. Up to 7 February, Wuhan Municipal Services and the Big Data Administration jointly developed a 'Wuhan battles the Epidemic' programme with Tencent and began to provide Wuhan residents with integrated epidemic information, symptom self-checking, the number of available hospital beds and other information. However, the programme was still unable to update the data from the hospitals in real-time. Wuhan City, when releasing donation information on its official website and other platforms, only listed the type of urgently needed materials for epidemic prevention and control, such as 'medical devices and medical equipment, reagents, medicines, protective equipment, washing equipment, and consumables', without clarifying the specifics.<sup>20</sup> The lack of such

information has prevented many suspected patients from optimising their consultation plan and has also led to uncertainty about what should be donated. In the digital age, when 'Internet plus' has become an essential tool for governance, the Wuhan municipal government severely neglected the critical role of using information and communication technology to establish an open data platform for dealing with the epidemic.

### *Local governments' decision-making mechanism in the control of COVID-19*

On 27 January 2020, Zhou Xianwang, the Mayor of Wuhan, admitted in an interview with CCTV that 'the disclosure of the epidemic was not timely', and stated a hope that 'everyone understands that it is an infectious disease which has to be disclosed under the law of Infectious Disease Prevention and Control. As a local government official, when I have access to certain information, I can only disclose it after authorisation'.<sup>21</sup> In the management of a public health emergency, local governments need to respond quickly, identify the problems, assess the risks, determine the level of emergency response and set out contingency plans. However, Mayor Zhou's account propels us to dig deeper into the issues of decision-making power and the mechanisms that exist within local governments when responding to public health emergencies. In the face of a public health emergency that could trigger public panic, how should local governments handle information that has not yet been scientifically confirmed, within the framework of the established rule of law, and make contingency decisions as quickly as possible?

First of all, the decision-making power of local governments and their health committees for releasing information on infectious diseases and formulating contingency plans needs to be determined. There is no doubt that the administrative actions of local governments need to be in line with the national law. Article 38 of China's *Law on the Prevention and Control of Infectious Diseases* stipulates that 'in the event of an outbreak or epidemic of infectious diseases, the health department under the State Council shall be responsible for publishing information of the infectious disease to the public'. In March 2006, the Ministry of Health (MOH) issued a statement and clearly states that 'from the date of issuing this Programme, the Ministry of Health authorises the health departments of provinces, autonomous regions, and municipalities directly under the Central Government to publish information on statutory infectious disease outbreaks and public health emergencies, in a timely and accurate fashion, within their respective administrative areas in the event of an outbreak of infectious diseases, epidemics, and other public health emergencies'.<sup>22</sup> Thus, Hubei Province had already been authorised to declare infectious disease outbreaks, while the Wuhan municipal government could only do so after obtaining authorisation from the supervising leadership.

Nevertheless, the Wuhan municipal government still had the responsibility to report warning information regarding the outbreak, even if this meant bypassing the immediate leadership. Article 43 of the *Emergency Response Law* further stipulates that 'when the possibility of an imminent or occurring natural disaster, accident disaster or public health event that can be alerted increases the local governments at or above the county level shall, in accordance with the powers and procedures prescribed by the

relevant laws, administrative regulations and the State Council, issue the appropriate level of alert, decide to let the areas concerned enter into the early warning period and announce it; at the same time, they shall report to the government at higher level, and if necessary, bypass the immediate leadership and report to the local garrison and the government of adjacent or related areas that might be endangered'. This stipulation suggests that the Wuhan municipal government bears the responsibility for truthfully and accurately reporting to its superiors, as well as having the statutory authority to declare that the region has entered an early warning period. As mentioned in the above section, however, the Wuhan municipal government not only has prohibited the Medicare staff of sharing information with the public but had interrupted the hospitals' direct reporting of early-warning information of the COVID-19 outbreak to the national level.

Secondly, there are serious deficiencies within the decision-making mechanism of the Wuhan municipal government in responding to the COVID-19. Article 5 of the *Law on the Prevention and Control of Infectious Diseases* clearly states that 'the governments at all levels lead the work of preventing and controlling infectious diseases. The governments at or above the county level shall make plans for the prevention and control of infectious diseases, organise their implementation, and establish and improve the system of disease prevention and control, medical treatment and supervision of infectious disease prevention and control'. This clause once again specifies the role of the Wuhan municipal government in the fight against infectious disease. It also grants local governments at or above the county level the responsibility to make efforts to manage the prevention and control of infectious diseases within their administrative jurisdictions, determine the level of emergency response and take preventive measures. In other words, the Wuhan municipal government has the legal authority to intervene in the outbreak. Due to insufficient information, we have no way of understanding the decision-making process of the Wuhan municipal government but, based on the decision results, Wuhan did not activate the contingency response to public health emergencies until 22 January 2020. Hubei Province launched a level 2 contingency response to public health emergencies on 22 January and a first-level response on 23 January. Undoubtedly, the decision to make an emergency response came too late and its initial approach was insufficiently strong. According to the classification of public health emergencies laid out in article 1.3 of the *National Contingency Plan for Public Health Emergencies*, infectious atypical pneumonia and human cases of highly pathogenic avian influenza, which tend to spread, are particularly significant public health emergencies that require a level 1 response. Wuhan's *Contingency Plan for Public Health Emergencies* (the government office of Wuhan, No. 195, 2014) also specifies the applicable criteria for particularly significant public health emergencies, such as 'group diseases with unclear causes in several provinces and a trend of proliferating' in Article 3, and 'The occurrence or introduction of new infectious diseases or infectious diseases yet to be discovered in our country, and has a proliferation tendency' in Article 4. In addition to the prime factors of the inaccurate assessment of the infectiousness of the COVID-19 based only on the Briefing published by the local government, the Wuhan Municipal Health Commission adjusted its basic assessment of 'human-to-human transmission' on 15 January and officially deleted the statement

in the Briefing on 17 January. Earlier, neighbouring countries such as South Korea and Thailand reported similar cases in their countries in the period 9-13 January.<sup>23</sup> In an interview with CCTV on 20 January, Zhong Nanshan made it clear that 'yesterday, we were able to confirm the existence of human-to-human transmission formally and observed cases of infection in medical staff'.<sup>24</sup> Comparing this pivotal time and the practice of neighbouring areas, Wuhan city and even Hubei Province failed to respond quickly and accurately in their decision-making when dealing with the COVID-19. Outside Hubei Province, Zhejiang, Guangdong and Hunan provinces all launched a level 1 response to the significant public emergency on 23 January, while Hong Kong's Department of Health activated a 'severe response level' for public health as early as 4 January.<sup>25</sup>

The difference in emergency response level reflects a difference not only in terms of the emphasis placed on the outbreak from an abstract perspective, but also in the arrangement of specific measures of response. In this regard, the implementation mechanism for specific measures in the existing 'Contingency Plan for Public Health Emergencies' of Hubei Province and Wuhan City appear too theoretical, and lack systematic consideration and practicality. On the one hand, their contingency organisation still functions based on the departments in an administrative system. It merely lays out the responsibilities of each department based on what it should be on paper, without offering any guidance regarding interactions with medical institutions, communities, and other actors. On the other hand, the plan also failed to establish a cross-sectoral coordination mechanism to guide the necessary interventions in emergencies and ensure the normal or basic functioning of economy and society. On 23 January, Wuhan started to seal off the city to avoid a more significant impact on other regions and suspended the city's public transport operations. The lock-down was a necessary measure to contain the epidemic but, due to a lack of systematic preparation, on the one hand, the attempt caused panic, resulting in a large number of Wuhan's residents leaving Wuhan by car overnight, which aggravated the spread of the epidemic.<sup>26</sup> On the other hand, this move made it hard to guarantee the basic living or medical needs for the residents who remained in the city. The lack of an overall design and practicality in the Emergency Plan is not a unique deficiency of the Wuhan municipal government, but a common feature of most local governments. However, at the same time, some regions have shown more systematic strategies in their response to the epidemic. After overcoming this epidemic, it is crucial for cities to reflect on their experiences for practical reasons, to make precise arrangements for the governing bodies and their primary responsibilities, prepare, supply and allocate resources at every step in the contingency process, and be better prepared to face similar events in the future.

### ***Execution mechanism for coordinating multiple stakeholders in a joint response to the COVID-19***

In dealing with public health emergencies, local governments are no longer the sole providers of public services but need to coordinate the administrative departments, medical institutions, suppliers, community organisations, voluntary sector and

residents to join efforts to address the epidemic by establishing real-time, open information platforms. As the main body of meta-governance, local governments need to play the role of gatekeeper, pay attention to areas such as market failure and the lack of volunteer efforts in order to identify and mitigate the gaps, and ensure that emergency policies are put in place and that all stakeholders work effectively. From the practice point of view, there are still many problems and shortcomings associated with the Wuhan municipal government's execution mechanism, including the resource allocation capacity of the traditional administrative department and the cross-sectoral coordination in new contexts of governance.

First, in the traditional administrative system, the Hubei provincial and Wuhan municipal governments have failed to assess accurately the local resource supply capacity (and supply channels) and lack the necessary emergency deployment capacity. In response to the COVID-19, the government should first assess the responsibilities and resource supply capacities of the medical institutions and explicitly inform the public of real information to avoid public panic and facilitate targeted support from the high-level government departments, suppliers and voluntary sectors. After the outbreak, Wuhan City initiated the building of two hospitals, Huoshenshan (Fire God Mountain) and Leishenshan (Thunder God Mountain), in a short amount of time, and several mobile cabins to treat patients, which helped to alleviate the problem of a lack of hospital beds in Wuhan. However, during this process, the Wuhan municipal government has shown deficiencies in assessing the local emergency reserve resources and proper preparation, and the information released by different bodies at different times has been inconsistent. For example, in the 'Briefing on the novel coronavirus infection pneumonia in Wuhan City from the special command centre for prevention and control' (No. 2) issued on 23 January, the Wuhan municipal government clearly stated that 'Wuhan has sufficient storage and a steady supply of commodities, food, medical protective supplies and other necessities'. However, on the same day, Wuhan issued another 'Briefing' (No. 3), saying that 'the city now has 24-hour telephone lines to welcome donations from all sectors of society'. Briefing (No. 4) stated that 'there is an urgent need for materials used for epidemic prevention and control, including medical devices and medical equipment, reagents, medicines, protective equipment, cleaning equipment, consumables (particularly face masks that are in high demand) and others'. After receiving a large number of donations from society, the scarcity of resources in Wuhan has been alleviated, but the supply of medical resources in other municipals of the Hubei Province remains tight. As of 8 February 2020, the recovery rate of people who contracted the COVID-19 in Wuhan has been at a moderate level in Hubei Province, while the diagnosis and treatment capability in other areas of the province is significantly lower. This information indicates that strengthening the supply of resources and optimising the allocation capacity within the administrative system of local governments is a matter of urgency. As an emergency measure, the Central Government's leading taskforce for addressing the COVID-19 held a meeting on 7 February and decided to establish a counterpart support relationship between 16 provinces and cities outside Wuhan in Hubei Province, in order to alleviate the shortage of medical resources in those areas.

Another problem highlighted in response to the epidemic is that the administrative systems of Hubei Province and Wuhan cannot be coordinated in a way that includes the participation of diversified parties, as seen in the resource allocation issue with the

Red Cross (described below). In public governance, the market, society and government are complementary systems, and governments need to coordinate the horizontal relationships between multiple stakeholders. After the outbreak, the Wuhan Red Cross society became an essential platform for coordinating the voluntary sector and medical institutions, but the coordination mechanism was inefficient and incompetent. After Wuhan announced they would be accepting donations, the Red Cross Society of China's Wuhan branch soon received a large number of donated medical supplies, but hospitals had to contact the relevant administrative departments to obtain the corresponding supplies.<sup>27</sup> It was not until 1 February that Wuhan's Red Cross Society allowed hospitals and supporting organisations to 'bypass the Red Cross' and begin targeting donations. In this process, the Red Cross Society has been at the centre of controversy for publishing inaccurate sources and destinations regarding the donated materials. As a relevant department that coordinates both voluntary sector and professional medical institutions, the insufficient capacity of the Red Cross reflects the shortage of the administrative system in public governance; namely, it reflects their lack of ability to coordinate the relations between multiple stakeholders around common goals outside the traditional order control chain. On 4 February, the Hubei Provincial Commission for Discipline Inspection held three leaders of the Hubei branch of the Red Cross Society of China accountable, following an investigation.<sup>28</sup>

## Conclusion and implications

The disordered information, the lagging decision-making and the weak policy implementation in the Wuhan case suggest that some local governments are incapable of managing public health emergencies. Such incapability arises from both the traditional public administration and the new context of public governance. For one thing, the local government has failed to build a professionalized bureaucratic system with efficiency, which can implement orders effectively and in a timely manner. For another, the local government has failed to adapt to the new context of governance, where the traditional command-and-control approach has become invalid in influencing stakeholders beyond the scope of the administrative system. In public management, governance is not a vision but a fact. This means that the government is no longer the dominant authority in public affairs. Local governments must work with multi actors as partners, rather than perceiving them as subordinates. Improving the public governance mechanism does not mean that local governments should build a network across the sectors. The network already exists. What the local government should do is to become more adaptive to this network and to take responsibility for maintaining order, as well as provide quality public services to other stakeholders. Indeed, local governments' governance capacity is also constrained by the central-local relationship in a unitary system. In China, the central government must delegate more power to local governments. Nevertheless, it is equally important, if not more so, to empower the local legislative and judiciary agencies to check the power of the local administrators. In the event of a public health outbreak, the higher-level government can also intervene in local affairs to contain the virus' spread by providing all of the necessary resources and guidance. Despite this, local governments, referring to the municipal and county level, remain the

main responsible body and must seek good governance under constraints, and the public governance mechanism could be a useful governance instrument.

To date, the COVID-19 has not ended yet. Still, our examination of the Wuhan case provides some implications of how to improve the local governments' public governance mechanism in dealing with public health emergencies. These lessons we learned from Wuhan can not only be used in the concurrent emergency governance of the COVID-19, but also to introduce some institutional changes to the governance system for future preparation as well.

It is now clear that local governments in China shall make a response to the new scene of governance and formally establish a public governance mechanism that involves multi actors from both within and outside the administrative system. After 40 years of reform and opening up, a bundle of non-profit organizations and communities have participated in public governance such as the post-earthquake relief,<sup>29</sup> and contributed towards building a more inclusive public policy process.<sup>30</sup> This means that local governments should perceive the private sector and non-profit organizations as independent, responsible entities. Thus, local governments should conduct a more inclusive, rather than exclusive, governance mechanism to facilitate the potential of co-production in managing public affairs. It is in this process that the mechanism of managing information, making decisions and implanting policies shall be reconstructed systematically.

Concerning the characteristics of public governance, local governments should rebuild their information mechanism. One of the challenges in managing public health emergencies is to identify the problem and determine the possible risk. At the very first beginning of the epidemic, there are minimal cases of affected patients based on whom medical specialists can make an accurate judgement. Thus, local governments should initiate a mechanism for the flow of free information from multiple sources. The case of Wuhan suggests that local government' strict information management has cut off the possible support it could have received from the society and the professional agencies. It is a necessary strategy to develop several independent information sources, particularly those from the frontline of the Medicare service, to alert local governments during the early stage of risk determination. An information mechanism is also crucial in execution. Local governments could build online Open Government Data to share the demand and supply of Medicare resources and other cortical information. The high-quality data-sharing can not only avoid unnecessary public panic but guide the collective action of the numerous actors for voluntary work. The information mechanism is the basis for coordinating multiple actors in a governance network.

The essential responsibility of local governments as a meta-governor in public health emergency management is to make sound strategic decisions. This decision-making is not limited to onsite resolutions. An operational contingency plan is a key to improving local governments' decision-making ability. The case of Wuhan reveals that the current preparedness for public health emergencies is too vague and too limited. It is vague because the plan has failed to identify the vital public agencies in responding to public health emergencies, let alone their responsibilities, duties, and capability. It is limited because they have only included the agencies of the administrative system. There is no comprehensive description of what kind of professional

groups, voluntary organization, and communities should be included in the public governance mechanism, nor any statement about which public agency is responsible for managing volunteers and other partnerships. Without these preparations, the enthusiastic citizens, communities and social organizations might be able to make some contribution, but they will not give full play to their potential.

Another problem worth mentioning is the relationship between the professional agencies and local governments as the leading entity in making decisions. In China, local governments above the county level are authorized with the power to formulate and implement an anti-virus resolution. The main challenge of the local governments is not their lack of authority, but their lack of professional knowledge. The local CDC is the professional agency for public health emergency management, yet its role is that of a consultant, without any authorized decision-making powers. Without the necessary professional support, local governments are highly likely to mistime the making decisions as they are unable to diagnose the problem accurately. This could become worse when there is no free flow of open information, and the mayor of the local government must make decisions based on personal experience. The Chinese local governments should share their formal decision-making power with the professional agencies.

Last but not least, local governments also need to pay attention to their capacity building. In the context of public governance, local officials shall develop their professional administrative ability inside the bureaucratic system, and also their ability to coordinate with other actors outside the bureau. While professional training is urgently required at the individual level, the incentive structure of the government matters also. We noted that blame avoidance had become a common strategy among local officials in Wuhan. These officials awaited instruction from above at every stage, such as information delivery, decision-making and policy implementation, which hindered Wuhan from responding to the coronavirus epidemic effectively and in a timely manner. It is thus vital to create an incentive structure than can motivate local government officials to become more responsible public servants.

## Notes

1. Xiang and Yu, "Xinguan Feiyan Yiqing Fangkong zhong de Gonggong Zhili Jizhi: Xinxi, Juece yu Zhixing," 41–50.
2. Stoker, "Governance as Theory," 17–28.
3. Brudney, "Rethinking Coproduction," 8–27.
4. Jessop, "The Course, Contradictions, and Consequences of Extending Competition as a Mode of (Meta-)Governance," 167–185.
5. See note 1 above.
6. Li, "Communication for Coproduction," 110–135.
7. Simon, "A Behavioral Model of Rational Choice," 99–118.
8. Fung, et al., "The Use of Social Media in Public Health," 3–6.
9. Black, et al., "Do Social Media Have a Place in Public Health Emergency Response," 217–226.
10. Tian, "How Did They Find the New Pneumonia," 3.
11. The Health Commission of Wuhan, "Briefing on the Current Pneumonia."
12. The Health Commission of Wuhan, "Q&As Regarding the Novel Coronavirus-infected Pneumonia Epidemic."

13. See Zhang, “The Exclusive Interview with One of the “Rumormonger”; Tan, “Li Wenliang, The Whistleblower of the COVID-19”; Tan and Wang, “The Third Whistleblower Shows Up.”
14. Li et al., “Early Transmission.”
15. See note 12 above.
16. Yang, “Why Did the Reports on the Epidemic Suspended in Wuhan.”
17. For instance, the Winner Medical Group noted the growing demand for surgical masks in early January and immediately increased production. See Hu, “The Competition between the COVID-19 and A Surgical Mask Company with Foresight.”
18. See note 13 above.
19. Without accurate information, the agencies in Wuhan failed to respond to the COVID-19 in time, and even organized a series of public gatherings. For instance, the Municipal People’s Congress was held between 6 and 10 January, while the Provincial People’s Congress was held between 11 and 15 January. Moreover, a community named “Baibu Ting” held a big feast that attracted 40,000 families. All of these gatherings led to the wild spread of COVID-19. The news report suggests that there are suspected cases among those families who participated in the “Baibu Ting” feast. See Bao and Ding, “Fever Cases are Identified in Baibuting Community.”
20. Wuhan Release, “The Wuhan Headquarter of Anti-COVID-19.”
21. CCTV, “Dong Qian’s Exclusive Interview with the Mayor of Wuhan.”
22. The Ministry of Health, “The Ministry of Health formulates the Programme for Releasing Information on Statutory Infectious Disease Outbreaks and Public Health Emergencies.”
23. Ma and Zhan, “The Wuhan Novel Coronavirus-infected Pneumonia Epidemic.”
24. CCTV, “National Health and Reform Commission High-Level Expert Group on the New Coronavirus Pneumonia.”
25. The Government of Hong Kong SAR, “Government launches Preparedness and Response Plan for Novel Infectious Disease of Public.”
26. Xiao et al., “Wuhan Announced Traffic Sealing before Dawn, Some Citizens and Tourists Choose to Go Out of the City Overnight.”
27. Huang, “The Red Cross Makes Way due to Lack of ability.”
28. “The Hubei Provincial Commission for Discipline Inspection informed about the Failure of the Leadership and Cadres in their Duties of the Hubei Red Cross.”
29. Teets, “Post-Earthquake Relief and Reconstruction Efforts,” 330–347.
30. Gao and Teets, “Civil society organizations in China.”

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## References

- "The Hubei Provincial Commission for Discipline Inspection Informed About the Failure of the Leadership and Cadres in Their Duties of the Hubei Red Cross." *The People*, February 4, 2020. <http://politics.people.com.cn/n1/2020/0204/c1001-31570739.html>. ["Hubeisheng Jiwei Jianwei Tongbao Hubeisheng Hongshizihui Youguan Lingdao he Ganbu Shizhi Shize Wenti." *Renminwang*, February 4, 2020. <http://politics.people.com.cn/n1/2020/0204/c1001-31570739.html>]
- Bao, Zhiming and Jie Ding. 2020. "Fever Cases are Identified in Baibuting Community, Most of Whom are Middle-age and Senior People." *Caixin*, February 5. <http://www.caixin.com/2020-02-05/101511617.html>. [Bao, Zhiming, and Jie Ding. 2020. "Wuhan Baibuting Shequ Duoge Mengdong Faxian Fare Huanzhe, Zhonglaonianren Weizhu." *Caixin*, February 5. <http://www.caixin.com/2020-02-05/101511617.html>.]
- Black, David R., J. Eric Dietz, Amanda A. Stirratt, and Daniel C. Coster. "Do Social Media Have a Place in Public Health Emergency Response." *Journal of Emergency Management (Weston, Mass.)* 13, no. 3 (2015): 217–226. doi:10.5055/jem.2015.0235.
- Brudney, Jeffrey L. "Rethinking Coproduction: Amplifying Involvement and Effectiveness." *Journal of Chinese Governance* 5, no. 1 (2020): 8–27. doi:10.1080/23812346.2019.1666542.
- CCTV. 2020. "Dong Qian's Exclusive Interview with the Mayor of Wuhan." *The Face to Face Program of CCTV News*, January 27. [Zhongyang Dianshitai. 2020. "Dongqian Zhuanfang Wuhan Shizhang." *Yangshi Xinwen Mianduimian*, January 27.]
- CCTV. 2020. National Health and Reform Commission High-Level Expert Group on the New Coronavirus Pneumonia. *CCTV News*, January 20. [Zhongyang Dianshitai. 2020. "Guojia Weijianwei Gaojibie Zhuanjiazu jiu Xinxing Guanzhuang Bingdu Feiyan da Jizhe Wen". *Yangshi Xinwen*, January 20.]
- Fung, Chun Hai., Z. T. H. Tse, and K. W. Fu. "The Use of Social Media in Public Health." *Western Pacific Surveillance and Response Journal* 6, no. 2 (2015): 3–6. doi:10.5365/wpsar.2015.6.1.019.
- Gao, Xiang, and Jessica Teets. "Civil Society Organizations in China: Navigating the Local Government for More Inclusive Environmental Governance." *China Information* (2020). doi:10.1177/0920203X20908118.
- Huang, Huizhao. 2020. "The Red Cross Makes Way Due to Lack of Ability." *Caixin*, February 3. <http://china.caixin.com/2020-02-03/101510768.html>. [Huang Huizhao. 2020. "Libucongxin Honghui Rangu." *Caixin*, February 3. <http://china.caixin.com/2020-02-03/101510768.html>]
- Jessop, Bob. "The Course, Contradictions, and Consequences of Extending Competition as a Mode of (Meta-)Governance: Towards a Sociology of Competition and Its Limits." *Distinktion: Journal of Social Theory* 16, no. 2 (2015): 167–185. doi:10.1080/1600910X.2015.1028418.
- Li, Huafang. "Communication for Coproduction: A Systematic Review and Research Agenda." *Journal of Chinese Governance* 5, no. 1 (2020): 110–135. doi:10.1080/23812346.2019.1695711.
- Li, Qun, Xuhua Guan, Peng Wu, Xiaoye Wang, Lei Zhou, Yeqing Tong, Ruiqi Ren, et al. "Early Transmission. Dynamics in Wuhan, China, of Novel Coronavirus-Infected Pneumonia." *New England Journal of Medicine* (2020). doi:10.1056/NEJMoa2001316.
- Ma, Danmeng, and Yan Zhan. 2020. "The Wuhan Novel Coronavirus-infected Pneumonia Epidemic: There is a Hope that the Inpatients Can Get Their Treatment Fee back." *Caixin*, January 9. <http://www.caixin.com/2020-01-09/101502539.html>. [Ma, Danmeng, and Yan Zhan.

2020. "Wuhan Xinxing Guanzhuang Bingdu Yiqing: Zhuyuan Huanzhe Youwang Tuihui Zhiliaofei." *Caixin*, January 9. <http://www.caixin.com/2020-01-09/101502539.html>]
- Simon, Herbert A. "A Behavioral Model of Rational Choice." *The Quarterly Journal of Economics* 69, no. 1 (1955): 99–118. doi:10.2307/1884852.
- Stoker, Gerry. "Governance as Theory: Five Propositions." *International Social Science Journal* 50, no. 155 (1998): 17–28. doi:10.1111/1468-2451.00106.
- Tan, Jianxing, and Yanyu Wang. 2020. "The Third Whistleblower Shows Up: Doctor Liu Wen is Still Working at the Front Line of Anti Disease." *Caixin*, February 7. <http://china.caixin.com/2020-02-07/101512901.html>. [Tan, Jianxing and Yanyu Wang. 2020. "Disanming Chuishaoren Xianshen: Liu Wen Yisheng Rengzai Kangyi Yixian." *Caixin*, February 7. <http://china.caixin.com/2020-02-07/101512901.html>]
- Tan, Jianxing. 2020. "Li Wenliang, The Whistleblower of the COVID-19: Facts is More Important than Redress." *Caixin*, 31 January. <http://china.caixin.com/2020-01-31/101509761.html>. [Tan, Jianxing. 2020. Xinguan Feiyan Chuishaoren Li Wenliang: Zhenxiang bi Pingfan Geng Zhongyao. *Caixin*, 31 January. <http://china.caixin.com/2020-01-31/101509761.html>]
- Teets, Jessica C. "Post-Earthquake Relief and Reconstruction Efforts: The Emergence of Civil Society in China?" *The China Quarterly* 198 (2009): 330–347. doi:10.1017/S0305741009000332.
- The Government of Hong Kong SAR. 2020. "Government Launches Preparedness and Response Plan for Novel Infectious Disease of Public Health Significance". January 4. <https://www.info.gov.hk/gia/general/202001/04/P2020010400179.htm?fontSize=1>
- The Health Commission of Wuhan. 2019. "Briefing on the Current Pneumonia Epidemic Situation in Our City." December 31. The official website of the Health Commission of Hubei: [http://wjw.hubei.gov.cn/fbjd/dtyw/201912/t20191231\\_1822343.shtml](http://wjw.hubei.gov.cn/fbjd/dtyw/201912/t20191231_1822343.shtml). [Wuhan Shi Weisheng Jiankangwei. 2019. "Wuhanshi Weijianwei Guanyu Dangqian Woshi Feiyan Yiqing de Qingkuang Tongbao." December 31. Hubeisheng Weijianwei Guanfang Wangzhan.]
- The Health Commission of Wuhan. 2020. "Q&As Regarding the Novel Coronavirus-Infected Pneumonia Epidemic." January 14. The official website of the Health Commission of Wuhan. <http://wjw.wuhan.gov.cn/front/web/showDetail/2020011509040>. [Wuhan shi Weisheng Jiankang Wei. 2020. "Xinxing Guanzhuang Bingdu Ganran de Feiyan Yiqing Zhishi Wenda." January 14. Wuhan Shi Weijianwei Guanfang Wangzhan. <http://wjw.wuhan.gov.cn/front/web/showDetail/2020011509040>]
- The Ministry of Health. 2006. "The Ministry of Health formulates the Programme for Releasing Information on Statutory Infectious Disease Outbreaks and Public Health Emergencies". March 21. [http://www.gov.cn/govweb/gzdt/2006-03/21/content\\_232280.htm](http://www.gov.cn/govweb/gzdt/2006-03/21/content_232280.htm). [Weishengbu. 2006. "Weishengbu Zhiding Fading Chuan'ranbing yiqing he Tufa Shijian Fabu Fangan." March 21. [http://www.gov.cn/govweb/gzdt/2006-03/21/content\\_232280.htm](http://www.gov.cn/govweb/gzdt/2006-03/21/content_232280.htm)]
- Tian, Qiaoping. 2020. "How Did They Find the New Pneumonia." *Yangzi River Daily*, February 2, 3. [Tian, Qiaoping. 2020. "Zenyang Faxian Zhezhong Buyiyang de Feiyan." *Changjiang Ribao*, February 2.
- Xiang, Gao, and Jianxing Yu. "A Study on the Public Governance Mechanism in the COVID-19 Prevention and Control: Information, Decision-Making and Execution." [Xinguan Feiyan Yiqing Fangkong zhong de Gonggong Zhili Jizhi: Xinxu, Juece yu Zhixing]. *Zhili Yanjiu* (Governance Studies), no. 2 (2020): 41–50.
- Wuhan Release. 2020. "The Wuhan Headquarter of Anti-COVID-19: Announcement No.4." January 23. [http://www.wuhan.gov.cn/hbgovinfo/zwgk\\_8265/tzgg/202001/t20200124\\_304136.html](http://www.wuhan.gov.cn/hbgovinfo/zwgk_8265/tzgg/202001/t20200124_304136.html). [Wuhan Fabu. 2020. "Wuhan Shi Xinguan Feiyan Fangkong Zhihui bu Tonggao (Di Si Hao)". January 23. [http://www.wuhan.gov.cn/hbgovinfo/zwgk\\_8265/tzgg/202001/t20200124\\_304136.html](http://www.wuhan.gov.cn/hbgovinfo/zwgk_8265/tzgg/202001/t20200124_304136.html)]
- Xiao, Hui, Gang Ding, and Yi Gao. 2020. "Wuhan Announced Traffic Sealing Before Dawn, Some Citizens and Tourists Choose to Go Out of the City Overnight." *Caixin*, January 23. <http://www.caixin.com/2020-01-23/101507541.html>. [Xiao, Hui, Gang Ding, and Yi Gao. 2020. "Wuhan Lingchen Xuanbu Jiaotong Fengcheng, Bufen Shimin Youke Xuanze Lianye Chucheng." *Caixin*, January 23. <http://www.caixin.com/2020-01-23/101507541.html>]

- Yang, Hai. 2020. "Why Did the Reports on the Epidemic Suspended in Wuhan." *China Youth Daily*, March 5. <https://news.sina.com.cn/c/2020-03-05/doc-iimxyqvz8101965.shtml>. [Yang, Hai. 2020. "Wuhan Zaoqi Yiqing Shangbao Weihe Yidu Zhongduan." *Zhongguo Qingnian Bao*, March 5. <https://news.sina.com.cn/c/2020-03-05/doc-iimxyqvz8101965.shtml>]
- Zhang, Xiaohui. 2020. "The Exclusive Interview with One of the 'Rumormonger' Doctor Xie Linka: My Story is Very Simple, and I Hope More Medical Supplies Will Be Provided to the Medical Workers." *The Economic Observer*, February 1. <http://www.eeo.com.cn/2020/0201/375357.shtml>. [Zhang, Xiaohui. 2020. "Zhuanfang Wuhan Zaoyaozhe Zhiyi Xie Linka Yisheng: Wo de Shiqing Qishi Hen Jiandan, Xiwang Gengduo Zhiyuan Yihu Renyuan Kangyi Wuzi." *Jingji Guancha Wang*, February 1. <http://www.eeo.com.cn/2020/0201/375357.shtml>]