

PERSPECTIVE

From guidance to practice: Promoting risk communication and community engagement for prevention and control of coronavirus disease (COVID-19) outbreak in China

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Abstract

Integrating risk communication and community engagement into the national public health emergency response is crucial. Considering the difficulties and challenges faced by China in the prevention and control of coronavirus disease (COVID-19) and based on interim guidelines from the World Health Organization, this article makes several recommendations addressing the outbreak in China. These include improvements in the internal governmental risk communication systems, enhancing the coordination between internal and partner governmental emergency management, and promoting public communication in response to societal concerns. Regarding these recommendations, we emphasize community engagement in joint prevention and control, confronting uncertainty and countering rumors effectively, and strengthening international cooperation and evidence-based decision making for prevention and control measures.

KEYWORDS

community engagement, COVID-19, risk communication

1 | INTRODUCTION

Risk communication and community engagement (RCCE) is an integral aspect of emergency response to health emergencies.^{1,2} On 31 December 2019, the health administration of Wuhan City, Hubei Province in China, reported numerous cases of viral pneumonia, causing great concern both in China and abroad.³ On 8 January 2020, a novel coronavirus strain initially identified as the pathogenic agent⁴ was labeled as the “coronavirus disease (COVID-19)” by the World Health Organization (WHO). Subsequently, imported cases from China were reported in Thailand, Japan, South Korea, the United States, Vietnam, and Singapore.⁵

The WHO released technical guidance on RCCE readiness and response to the novel coronavirus (COVID-19) in January 2020.⁶ It includes recommended RCCE strategies for countries preparing to tackle COVID-19 cases and for countries that have confirmed COVID-19 cases. Based on the RCCE crisis and control checklist for countries with ongoing transmission, we reviewed the evolving outbreak and containment measures in China, as well as the difficulties and challenges faced by the government at the national and regional levels.

The objective of this article is to indicate actionable measures that would have improved the effective implementation of RCCE practices for infection prevention and control in the context of COVID-19.

2 | HIGH-LEVEL INITIATIVES TO IMPROVE INTERNAL GOVERNMENTAL RISK COMMUNICATION SYSTEMS

The establishment and effective response of governmental internal risk communication systems are a prerequisite for sharing information and opinions both internally and with partners in public health emergency responses. Since 2003, health administrative departments at all levels in China have gradually established risk communication systems for public health emergency management.^{7,8} They have since contributed to the prevention and control of the imported Middle East respiratory syndrome and H7N9 avian influenza.^{9,10}

Leaders at the highest level have issued important guidelines on disease prevention and control since the disease escalated from a local outbreak to a national epidemic.¹¹ Internal governmental risk

communication systems should shift from being locally based to a high-level centrally led initiative that includes RCCE in a national response agency. Special working groups should be established at central and provincial levels with clearly delineated tasks and responsibilities. A unified, authoritative, timely, and efficient information release process that includes principal activities and timetables should be established and continuously improved. As far as possible, agencies should not conduct their risk communication strategies. Instead, a central working group should develop unified and clear working specifications for essential information, such as the timing of releasing the disease statistics and the format of recommendations for disease prevention and control, whereas provincial working groups should supervise regional implementation. However, the systems in China were not active and well organized within the first few weeks, and the reasons are not yet clear.

Containment measures for the outbreak should be legally based. Considering the inclusion of COVID-19 among class B infectious diseases and the implementation of disease prevention and control measures for class A infectious diseases in China,¹² the media and public should pay attention to the disease surveillance and reporting systems strictly implemented according to the law. Additionally, the WHO's guidance provides general recommendations. However, in the context of this outbreak becoming a public health emergency of international concern,¹³ how China can establish a risk communication and response system that leverages the dominant social and ideological systems unique to China remains to be answered.

3 | ENHANCING THE COORDINATION OF EMERGENCY MANAGEMENT BETWEEN INTERNAL GOVERNMENT AGENCIES AND PARTNER AGENCIES

Public health emergency is widely interrelated with economic and social development, and outbreaks have affected the survival and growth of various industries. Adequate preparation for RCCE not only emphasizes stronger coordination among government agencies but also accentuates coordination with external partners. During the early stage of COVID-19 regional transmission epidemic in Wuhan City, local government agencies introduced public policies that were contradictory to the local outbreak.¹⁴ Unfortunately, the policies unintentionally increased the risk of spreading disease and social instability. Effective coordination between government agencies would have helped avoid this situation.

Infectious diseases have an extremely strong externality. Therefore, cooperation and coordination of emergency management between internal and partner governmental agencies is an important cornerstone for containment measures. The inclusion of relevant societal interests (including governmental agencies, NGOs, and businesses) into the RCCE response and ensuring its effective and timely communication is essential for the success of joint containment measures. Guidance from the WHO recommends the formulation and adoption of

standard operation procedures (SOPs) in implementing the roles and responsibilities of various parties in the RCCE response. We agree with the recommendation and recognize SOPs as essential in effectively improving the coordination of onsite outbreak control, especially in the early stage of community outbreak.

On 23 January 2020, public transportation in Wuhan City was locked down, and the airport and outbound rail stations were temporarily closed.¹⁵ Many local hospitals faced the challenge of inadequate basic protective equipment and relied primarily on donations from various NGOs. Concurrently, there was a lack of efficient logistic channels for a large number of third-party aid supplies. This case highlights the urgency and necessity of having a unified plan for a coordinated RCCE response.

4 | PROACTIVE PROMOTION OF PUBLIC COMMUNICATION AND TIMELY RESPONSE TO SOCIETAL CONCERNS

The panic caused by an infectious disease outbreak among the public has profound economic and social consequences.¹⁶ The timely disclosure of the information is the top priority in infectious disease prevention and control. Panic among the public, including health care personnel, results from the fear of unknown and uncertain risks. The proactive promotion of public communication and the timely response to social concerns are essential for quelling panic and gaining the support of the public. Whether located in a high-risk area where local transmission and community outbreaks have occurred, or an area where only sporadic cases have occurred, governmental agencies should communicate with the public in time, about the known information and the measures being undertaken. This is also an essential first step for proactive risk management by governmental agencies.

After the SARS outbreak, governmental health agencies at all levels in China had established a spokesperson system, and they relied on it for timely release of health risk information to the public. Additionally, updates were released promptly based on the results of a risk assessment and the perception of risk by the public. These are essential foundations of the localized application of the RCCE guidelines' recommendations. Compared to the circumstances during the 2003 SARS epidemic, the current popularity of mobile applications has increased the speed at which information is released, and the accessibility of transmission channels is at an unprecedented pace. The general public can obtain information from the diverse channels available for information dissemination.

Compared to China's official epidemic reporting and news briefing channels on the national and local levels, third party's social media-based news briefing services are featured for rapid, highly dynamic, and interactive as supplement information release channels with distinguished performance. Moreover, key opinion leaders in domestic and international social media platforms have the advantage of high community engagement, strong community mobilization, and widespread social influence. Governmental agencies should take the

initiative to strengthen their communication and cooperation with the parties mentioned above further to improve the effectiveness of risk communication with the public.

5 | ESTABLISH THE JOINT PREVENTION AND CONTROL MECHANISM IN COMMUNITIES THROUGH COMMUNITY ENGAGEMENT STRATEGIES

Several other affected cities in China's Hubei Province also announced the implementation of public transport outages and road closure measures since traffic closure was implemented in Wuhan.¹⁷ The cities were on lockdown. Large-scale social control measures during the traditional Chinese New Year holiday contained the outbreak, but also impacted the daily life of the general public and the nation's economy. Under these circumstances, we realized that the WHO's recommendations for crisis response concerning community engagement did not wholly meet the actual needs of the ongoing public health emergency in China.

Since WHO's recommendations focus on gaining a timely understanding of the different demands of the stakeholders (such as medical staff, patients, the general public, and socially vulnerable groups), the China national health commission activated the "12320 health hotline" and provided an effective feedback channel to improve the compliance of the affected population with the public health emergency response. Meanwhile, as a socialist country, China strived to establish the joint prevention and control mechanism in communities through community engagement strategies with the strong national administrative system to ensure all the social approaches needed for epidemic containment.

As a typical example, most local community response teams included members not only from the primary healthcare facility and quarantine office but also from many mass, grass-roots, and self-governing organizations in an urban or rural community. The teams are very familiar with the residents and more effective in conducting screenings of suspected cases and epidemiological investigation of community outbreak. Taking advantage of the interconnections between communities and social organizations, the local teams can implement appropriate measures to contain the spread of the virus at a community level in a timely manner as well as provide health education for the susceptible and general population. The traditions and unique advantages of the Patriotic Health Campaign in China have also been utilized as an important strategy to promote the government approaches actively engaged in joint prevention and control mechanisms to contain the epidemic. These mechanisms worked reasonably well, which shows that maintaining a simultaneous two-way community engagement should be acknowledged as a high priority for a successful RCCE strategy. In the future, promptly sharing the most recent situation with the community's trusted influencers timely and engaging them in the community-level RCCE team would be helpful in strengthening the consistent feedback mechanism.

6 | THE EARNEST CONFRONTATION OF UNCERTAINTY EFFECTIVELY COUNTERS RUMORS AND MISUNDERSTANDINGS

The WHO's guidance on the RCCE in response to the COVID-19 outbreak⁶ clearly states that an important intervention for RCCE is proactive communication of what is known and what is unknown. The most effective results, including reducing the spread of rumors and misunderstandings that may undermine the disease prevention and control response, would also minimize the social disorder caused by the epidemic. These are important cornerstones for the governments of various countries for mobilizing social engagement and building public trust in dealing with the disease outbreaks.

COVID-19 is a novel coronavirus strain that has not been found in humans before. To understand this, it will require extensive basic and clinical medical research, which will be a gradual and in-depth process. Leaving the response to chance is not an effective strategy. Instead, an initiative must be taken to communicate and explain uncertainty in time. Thus, the central government in China engaged senior experts to develop our understanding of the virus in order to enhance COVID-19 containment and made press releases in the early stage of the outbreak. Meanwhile, the state council provided hotline and web-based channels to help the general public to respond to requests for help. These measures contributed to addressing uncertainty and rumors. Nevertheless, the participation of public health experts in the release and interpretation of epidemic information was limited, so the government was unable to meet the public's expectation regarding information disclosure fully. Public perception of the limitations and gaps in drugs and vaccine development could be underestimated. Public education and risk communication considering these uncertainties require more attention. We also noticed that, due to the lack of effective monitoring tools and mechanisms, the domestic authorities at the regional or city level had difficulty determining the issues that might be causing rumors. We recognized that the insufficient preparedness needed to be addressed, and lessons could be learned from China.

Rumors are usual features during outbreaks and spread of diseases; therefore, we must not only rely on the open and transparent disclosure of information to effectively counter rumors and misunderstandings but also seek ways to make the information more accessible and comprehensible. As the basis of risk communication, establishing an official and unified information dissemination channel on the national level in China is necessary, as well as for countries where one or more COVID-19 cases have been identified. For the local authorities implementing containment measures, we suggest that they should not only establish synchronous monitoring, verification, and response mechanisms for rumors and misunderstandings but should also establish timely and effective channels for understanding the risk perception and knowledge of different groups. In the collective sense-making process that occurs on social media platforms, using expressed uncertainty to detect rumors has been proven to be possible¹⁸; using "official" accounts on the social media platforms, they should participate in the propagation and correction of online rumors, and it would also benefit in improving and implementing RCCE strategy.¹⁹

7 | ENHANCING INTERNATIONAL EXCHANGE, COOPERATION, AND EVIDENCE-BASED DECISION MAKING ON PREVENTION AND CONTROL MEASURES

Information on COVID-19 cases in China was reported daily to the WHO from 3 January 2020. Subsequently, the full genome sequences of the new virus were shared with the international community after the pathogen was identified on 7 January 2020.⁵ We must recognize that international information sharing and interregional cooperation would be of utmost importance in addressing and controlling the pandemic.

For the RCCE readiness and initial response, the disease control agency in Thailand established a hotline for those returning from China with relevant symptoms and issued risk communication guidelines for the public. The National Institute of Infectious Diseases of Japan immediately initiated a revision of risk assessment methods (including the definition of close contact) and enhanced public risk communication. The government of South Korea increased the four-level national emergency management alert system from blue (level 1) to yellow (level 2). International agencies, such as the WHO collaborating centers, also released related research progress and working recommendations swiftly.^{20,21} Concerning RCCE preparation, Singapore, the Philippines, and other Southeast Asian countries have also developed effective measures.²²

These experiences from different countries remind us that enhancing international exchange and cooperation promptly, as well as sharing the response and preparedness measures with the international community, would be beneficial in addressing critical gaps in knowledge on COVID-19 and promoting evidence-based decision making for effective risk communication.²³

8 | CONCLUSION

It has been 17 years since the SARS outbreak. The origin of the SARS coronavirus was not confirmed until 2017, and to date, no effective targeted drugs exist. However, we believe that China's public health and healthcare system has the ability to control the COVID-19 epidemic. China's command-and-control political economy and its containment efforts are unique. However, we should be aware of and identify barriers to engaging in RCCE practices in different countries with diverse political affairs. China's experience provides valuable lessons for other countries. The strategies, including ensuring the organization and accountability of public health system and healthcare system, respecting science, universal rules and common practices of the pandemic countermeasures, resolutely implementing effective and comprehensive public health intervention, and emphasizing RCCE, will finally help us to constrain the COVID-19 pandemic.

REFERENCES

1. Dickmann P, Abraham T, Sarkar S, et al. Risk communication as a core public health competence in infectious disease management: development of the ECDC training curriculum and programme. *Euro Surveill.*

- 2016;21(14). <https://doi.org/10.2807/1560-7917.ES.2016.21.14.30188>.
2. World Health Organization. *Risk Communication and Community Engagement (RCCE) Considerations: Ebola Response in the Democratic Republic of the Congo*. Geneva: World Health Organization; 2018.
3. Wang C, Horby PW, Hayden FG, Gao GF. A novel coronavirus outbreak of global health concern. *Lancet* 2020;395:470-473.
4. National Health Commission of the People's Republic of China. *Proactive Prevention and Control of Novel Coronavirus Pneumonia by the National Health Commission*. Available from: <http://www.nhc.gov.cn/yjb/s7860/202001/de5f07afe8054af3ab2a25a61d19ac70.shtml> (accessed 20 January 2020).
5. World Health Organization. *Novel Coronavirus (2019-nCoV) Situation Reports*. Available from: <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports> (accessed 10 February 2020).
6. World Health Organization. *Risk Communication and Community Engagement Readiness and Initial Response for Novel Coronaviruses (nCoV)*. Available from: [https://www.who.int/publications-detail/risk-communication-and-community-engagement-readiness-and-initial-response-for-novel-coronaviruses-\(ncov\)](https://www.who.int/publications-detail/risk-communication-and-community-engagement-readiness-and-initial-response-for-novel-coronaviruses-(ncov)) (accessed 26 January 2020).
7. Sun L, Ma Y. Development and experience of health risk communication in China. *Chin J Health Educ.* 2012;28(03):233-234.
8. Mao QA. *Risk communication of public health emergency*. People's Medical Publishing House, 2013.
9. Qiu WQ, Hou XH, Mao AY, et al. Application of WHO risk communication principles in prevention and control of the first imported Middle East respiratory syndrome case in China. *Chin J Public Health.* 2017;33(02):342-344.
10. Qiu WQ, Chu C. Application of risk communication in prevention and control of human infection by H7N9 bird flu in China. *Chin J Dis Control Prevent.* 2018;22(04):429-430.
11. China Internet Information Center. *Xi Jinping: Do our best in the prevention and control of disease as well as the treatment of patients, resolutely fight against the epidemic*. Available from: http://news.china.com.cn/txt/2020-01/21/content_75635709.htm (accessed 21 January 2020).
12. National Health Commission of the People's Republic of China Public Bulletin. Available from: <http://www.nhc.gov.cn/jkj/s7916/202001/44a3b8245e8049d2837a4f27529cd386.shtml> (accessed 20 January 2020).
13. World Health Organization. *Statement on the Second Meeting of the International Health Regulations (2005) Emergency Committee Regarding the Outbreak of Novel Coronavirus (2019-nCoV)*. Available from: [https://www.who.int/news-room/detail/30-01-2020-statement-on-the-second-meeting-of-the-international-health-regulations-\(2005\)-emergency-committee-regarding-the-outbreak-of-novel-coronavirus-\(2019-ncov\)](https://www.who.int/news-room/detail/30-01-2020-statement-on-the-second-meeting-of-the-international-health-regulations-(2005)-emergency-committee-regarding-the-outbreak-of-novel-coronavirus-(2019-ncov)) (accessed 30 January 2020).
14. The Paper. *Wuhan Mayor: Why is the Wanjia Banquet Still Happening and 15 Medical Personnel Infected?* Available from: https://www.thepaper.cn/newsDetail_forward_5598149 (accessed 22 January 2020).
15. General Office of Hubei Provincial People's Government. *Wuhan City Novel Coronavirus Infection Prevention and Control Headquarters Bulletin (No. 1)*. Available from: http://www.hubei.gov.cn/zhuanti/2020/gzxxgzbd/zxtb/202001/t20200123_2014402.shtml (accessed 23 January 2020).
16. Perlman Stanley. Another Decade, Another Coronavirus. *New England Journal of Medicine.* 2020;382(8):760-762. <https://doi.org/10.1056/nejme2001126>.
17. Jiemian News. *Public Transport Suspended in 18 Cities and Counties during the Hubei City Lockdown*. Available from: <https://www.jiemian.com/article/3909677.html> (accessed 24 January 2020).
18. Starbird K, Spiro E, Edwards I, et al. Could this be true? I think so! Expressed uncertainty in online rumoring. In: *Proceedings of the*

- 2016 CHI Conference on Human Factors in Computing Systems, 2016; 360-371.
19. Andrews CA, Fichet ES, Ding Y, et al. Keeping up with the Tweetdashians: the impact of 'official' accounts on online rumoring. In: *ACM Conference on Computer-Supported Cooperative Work (CSCW)*, 2016; 452-465.
 20. Imai N, Dorigatti I, Cori A, et al. *Estimating the Potential Total Number of Novel Coronavirus Cases in Wuhan City, China*. Available from: <http://hdl.handle.net/10044/1/77149> (accessed 17 January 2020).
 21. Bogoch Isaac I, Watts Alexander, Thomas-Bachli Andrea, Huber Carmen, Kraemer Moritz U G, Khan Kamran. Pneumonia of unknown aetiology in Wuhan, China: potential for international spread via commercial air travel. *Journal of Travel Medicine*. 2020;27(2). <https://doi.org/10.1093/jtm/taaa008>.
 22. Liu JC, Li J. Concept and inspiration of risk communication in the Singapore and Philippines health fields. *China Health Ind*. 2019;16(12): 99-101.
 23. Fischhoff B, Brewer NT, Downs JS. *Communicating Risks and Benefits: An Evidence-Based User's Guide*. Rockville, MD: Food and Drug Administration (FDA), US Department of Health and Human Services;2011.

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