

Perspectives

Improving Risk Communication and Community Engagement for Public Health Emergencies in China: A State-guided Cooperative Trust Model

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ABSTRACT

Risk communication and community engagement (RCCE) constitutes a mandatory core capacity under the International Health Regulations (IHR 2005). However, dominant RCCE frameworks are rooted in Western institutional contexts and lack theoretical adaptation to China's state-led governance system. Drawing on an integrated multi-theoretical RCCE framework, this paper systematically examines the context-specific features and the limitations of China's present RCCE model in public health emergencies (PHEs). It identifies critical institutional, adaptive, and trust-related gaps by implementing literature review, policy analysis and case studies in China's RCCE practice, and proposes a state-guided cooperative trust model to reconstruct China's RCCE system. This study addresses the theoretical misalignment between global RCCE frameworks and China's institutional context, providing actionable implications for PHE preparedness and global health security.

Risk communication and community engagement (RCCE) are mandatory core capacities under the International Health Regulations (IHR 2005) and are widely acknowledged as a foundational pillar of effective prevention, preparedness, response, and recovery (PPRR) for public health emergencies (PHEs) (1). Pandemics delivered a pivotal global lesson: Even surveillance and emergency response systems may falter when RCCE implementation is insufficient, communities lack meaningful engagement, and response strategies are misaligned with local social, cultural, and institutional contexts (2).

RCCE effectiveness is shaped by a country's political institutions, cultural norms, resource availability, and state-society relations. In 2023, WHO released the IHR benchmarks for PHEs, which suggest actions to adapt to the country's context (3), and address the limitations of the one-size-fits-all model used in

previous guidelines (4). These IHR guidelines offer valuable insights tailored to the countries whose RCCE systems remain under-theorized and under-examined.

China's response to large-scale PHEs has fostered a distinct state-led RCCE model (5). This model exhibits unparalleled scalability and implementation efficiency in rolling out nationwide public health and social measures (PHSMs). Nevertheless, it also reveals deep-seated systemic challenges, including inadequate institutionalization of community engagement, structural gaps in vulnerable group coverage, and intermittent trust deficits between authorities and local communities (6–8). The study employed legal policy analysis, systematic evidence synthesis, and comparative institutional analysis to draw on the WHO normative guidelines, China's national health statutes and policy documents, and peer-reviewed empirical literature published between 2020 and 2025 to examine the contextual fit of global RCCE frameworks within China's state-led governance system.

Theoretical Evolution of RCCE in PHEs

The theoretical RCCE underpinnings have undergone three sequential paradigm shifts. Aligned with Arnstein's ladder of citizen participation, these shifts have fundamentally redefined the role of communities in crisis responses, from passive recipients of top-down guidance to active collaborative stakeholders, and ultimately to equal co-producers of sustained crisis resilience (9). Early RCCE models were dominated by the knowledge deficit model, which attributed low public compliance with public health measures to insufficient scientific literacy and prescribed one-way factual communication (10). It prioritizes short-term behavioral compliance over long-term trust-building.

A paradigmatic turning point in RCCE was driven by empirical evidence from responses to PHEs, which demonstrated that the partnership-centered, two-way

RCCE consistently outperformed the command-and-control model in enhancing PHE response effectiveness. Building on these insights, the WHO's RCCE framework established four core principles — trust, transparency, early announcement, and respect for public concerns — to be implemented through community-centered, inclusive participatory approaches during PHEs (3). Despite the standardized guidelines in the WHO framework, RCCE systems across member states and local communities exhibit significant heterogeneity.

This cross-contextual heterogeneity in RCCE warrants systematic delineation and contextual explanation at the national and community levels to unpack social capital, foster trust, and sustain community resilience within an integrated multi-theoretical framework (Figure 1) (11–13). Analytically, this framework is constructed along dual logical axes. Trust theory was adopted as the vertical analytical thread, connecting the interactions across dimensions of institutional trust in governmental authorities, epistemic trust in scientific evidence and public health guidance, and interpersonal trust in neighbors,

frontline community workers, and local leaders; social capital theories were used as the horizontal analytical foundation. Thus, this analytical framework characterizes the specific social context of RCCE from three domains: relational structure, institutional norms, and trust cognition.

To enhance the equity orientation and sustainability of the framework, the Community Cultural Wealth (CCW) framework reframes marginalized communities not as resource-deprived intervention targets but as bearers of context-specific endogenous assets (13). Most critically, community resilience — defined as a community's capacity to resist, absorb, adapt to, and recover from acute shocks while sustaining essential core functions — elevates RCCE from a peripheral element of the PHE response to a core strategic pillar of long-term pandemic PPRR and health system strengthening, serving as the ultimate outcome dimension of the entire integrated framework. Accordingly, this integrated multi-theoretical framework provides a foundational analytical tool for identifying gaps in real-world RCCE practices for PHEs in China.

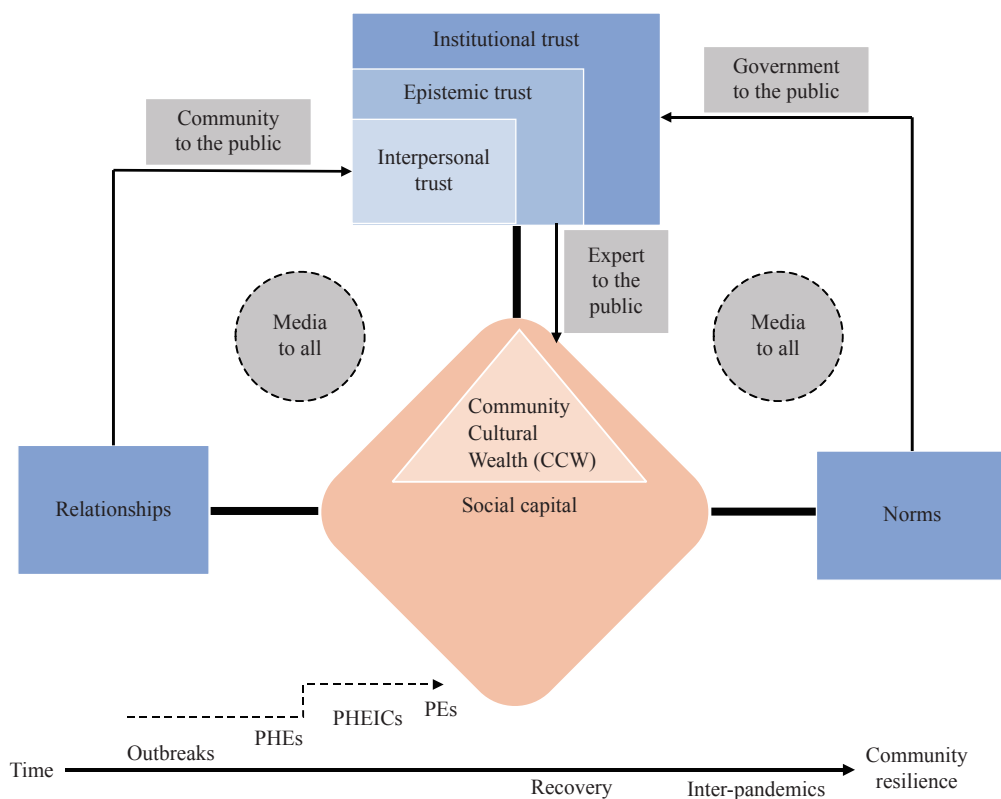


FIGURE 1. An integrated multi-theoretical framework: Three-level trust, social capital, and community resilience across the PHE cycle.

Abbreviation: PHE=public health emergencies; PHEICs=public health emergencies of international concerns; PEs=pandemic emergencies.

China's RCCE in PHEs: Features and Challenges

Building on an integrated multi-theoretical framework, this study diagnoses the structural features and practical gaps in China's RCCE system along three interlocking analytical dimensions: institutional and resilience, social capital and networks, and three forms of trust.

Context-specific features. China's RCCE in PHEs exhibits three interconnected, institutionally embedded features that adapt global guidelines to local contexts. First, it is underpinned by a state-led and party-guided organizational system anchored in community grid-based governance, which operates as a formalized bridging social capital infrastructure aligned with the social capital dimensions of the integrated framework. Second, the model employs collectivist-oriented civic mobilization through culturally congruent risk communication, a strategy built on and sustained by high institutional trust (the foundational pillar of the three-dimensional trust framework) to foster high public adherence. Third, pervasive crosscutting digital technology enablement constructs a decentralized and rapid information diffusion network that aligns with the social network theory dimension and the dynamic communication domain of the integrated framework.

Taken together, these three features endow China's RCCE model with distinctive strengths in scalability, implementation speed, and nationwide coordination during acute emergency responses; however, they also generate corresponding structural limitations that manifest over sustained governance horizons across trust building, social capital adaptation, and resilience, which are systematically discussed in the following section.

Gaps of China's RCCE practice against the integrated theoretical framework. China's hierarchical top-down governance structure delivers exceptionally high implementation efficiency. However, when assessed against an integrated framework and its own institutional and cultural context, China's RCCE system lacks institutionalized bottom-up feedback mechanisms and incentives for community engagement, confining community stakeholders solely to the implementation stage of the decision-making cycle. Communities lack formal avenues for participating in the full cycle of policy formulation, implementation, evaluation, and adjustment, thereby creating structural constraints that undermine the model's long-term effectiveness and equity.

Institutional and resilience dimension: Full-cycle

implementation gaps and weak long-term resilience. From the perspective of community resilience theory, China's RCCE system prioritizes acute-phase implementation efficiency but lacks institutionalized mechanisms for full-cycle governance and building long-term community resilience. The study identified structural institutional gaps across the legal governance system that are skewed heavily toward emergency responses. China's RCCE operations rely on a clear hierarchical statutory foundation anchored in its national legal system, providing supreme legal legitimacy, a standardized implementation framework, dedicated emergency provisions, infection control-specific regulations, and overarching institutional support for RCCE practices.

However, the legal system offers a top-down governance framework and guiding principles for the RCCE, it fails to stipulate operational rules for full-cycle implementation, particularly clear provisions for empowering and facilitating community engagement. This creates a notable legal gap and leaves an insufficiently enforceable legal basis for implementing RCCE-related statutory requirements. Beyond statutory provisions, the system also lacks institutionalized routine capacity-building for frontline RCCE personnel. This preparedness gap further undermines the structural foundation of long-term community resilience.

Social capital dimension: Adaptive deficit across heterogeneous community contexts. As predicted by the social capital domain, the one-size-fits-all RCCE strategy fails to account for divergent social capital endowments and network structures across community types, resulting in highly uneven mobilization outcomes. China's culturally congruent collectivist framework cannot accommodate fundamental disparities in population structure, social relations, lifestyles, and governance foundations across four distinct types of residential communities in China.

In urban communities, this homogeneous strategy fails to adapt to the dual engagement logic driven by bonding social capital for internal community affairs and bridging social capital for external public affairs, hindering broad-based grassroots mobilization (14). In rural communities, top-down mobilization cannot adapt to the collapse of traditional acquaintance societies and the erosion of bonding social capital caused by the large-scale outmigration of young adults, failing to mobilize the residual social capital of left-behind groups (15). In rural-to-urban resettlement communities, the standardized RCCE model fails to

address the "field-habitus mismatch" that describes the disjuncture between residents' internalized behavioral dispositions and their new urban living environment, resulting in pervasive long-term engagement apathy (16). In multi-ethnic inter-embedded communities, the administrative mobilization model cannot accommodate diverse cultural norms and differentiated needs, leading to superficial mobilization and a lack of broad-based public engagement (17).

Trust dimension: erosion of three-form trust and cognitive bias. China's RCCE practices exhibit structural weaknesses across three forms of trust. First, top-down official risk communication weakens responsiveness to institutional trust. Without formalized bottom-up feedback channels, unmet public concerns gradually erode confidence in governance authorities, thereby holding out the institutional trust foundation for large-scale RCCE mobilization. Second, the disconnection between expert technical discourse and practical public demand drives the persistent erosion of epistemic trust. Driven by technological elitism bias among technical experts, communication strategies prioritize scientific rigor and normative correctness over public acceptance and emotional needs. Third, fragmented information spreads in a fission-like manner across social media during PHEs and disrupts interpersonal trust at the community level. Digital tools enable fast and timely risk communication, efficient service delivery, and real-time situational awareness. However, they also act as major infodemic vectors. These structural trust deficits are further amplified by cognitive biases across the four stakeholder groups: the power-centric bias of governments, excessive self-interest bias of enterprises, technological elitism of technical experts, and irrational fear bias of residents.

Reshaping China's RCCE in PHEs

Based on integrated theoretical frameworks and a diagnosis of China's context-specific challenges, this study proposes a state-guided cooperative trust model representing a systematic context-adaptive reconstruction tailored to China's legal, political, and social institutional settings (Figure 2).

Domestic multi-layered reciprocal trust building. This module embeds a closed-loop, bottom-up feedback system into the existing state-led governance hierarchy. Vertically, the system connects four types of stakeholders with three interdependent trust dimensions as its core pillars: interpersonal trust built between the public and community workers, which

forms the micro-foundation of community collective action; epistemic trust fostered by translating scientific evidence from experts into context-specific solutions that address public concerns; and institutional trust strengthened when expert insights inform evidence-based decision-making and government policies are transparently communicated back to the public. Complementing this vertical trust chain, a dual-track media system facilitates horizontal information flow: official media serve as an authoritative channel for government announcements and public feedback collection, whereas social media enable real-time communication and community self-organization.

Embedded safeguard mechanism for infodemic governance. Tailored to China's state-led internet regulatory context, infodemic governance is embedded as a cross-cutting safeguarding mechanism to mitigate trust erosion caused by misinformation diffusion. The government exercises normative oversight over social media platforms through two complementary pathways: one is by formulating targeted legislation to clarify the full-chain responsibilities of social media platforms, including mandatory real-time traceability mechanisms for public health misinformation and hierarchical accountability for core accounts that disseminate false content; the other is by guiding platforms to establish priority dissemination channels for evidence-based authoritative information and incentive mechanisms for verified content sharing. This regulatory framework not only mitigates infodemic risks, but also safeguards the public's right to accurate health information, thereby sustaining the three-tiered trust system.

International mutual communication mechanism. Institutional trust acts as a critical bridge connecting China's domestic RCCE system with the international community. The model embeds parallel two-way communication channels with a broad range of international stakeholders, including foreign governments, the WHO in line with the IHR, academic institutions, medical and public health agencies, and international media. These channels address long-standing communication barriers such as linguistic discrepancies and information asymmetry, enabling mutual learning and coordinated global responses to PHEs.

Theoretical innovation and model positioning. China's RCCE practice has exposed four core theoretical misalignments between global frameworks and their context: the misfit of the binary state-society presupposition, normative mismatch of the linear

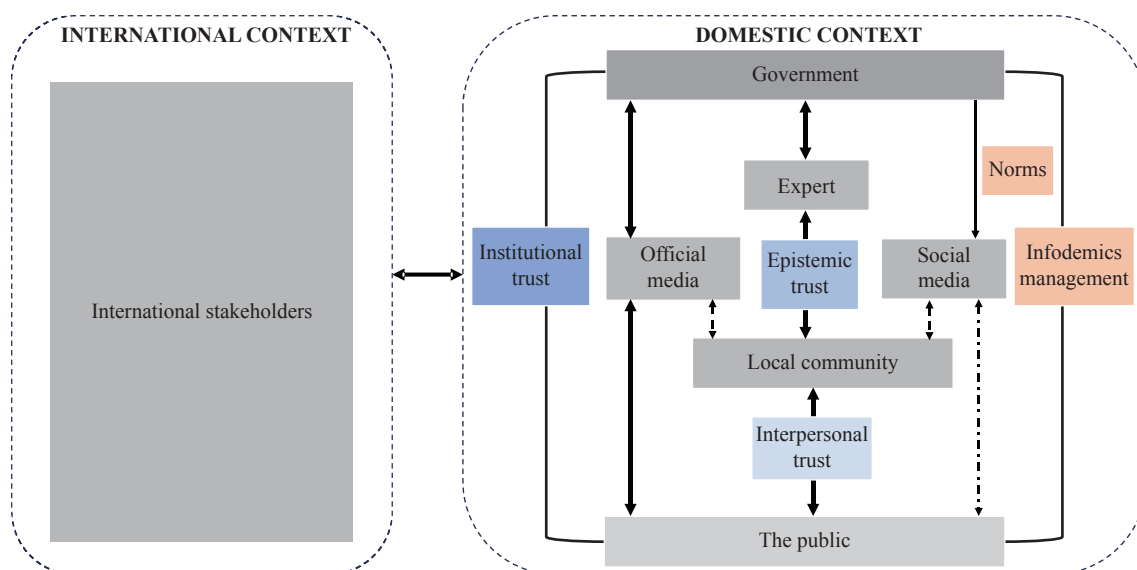


FIGURE 2. A state-guided cooperative trust model: Multi-stakeholder trust building, dual-track media, and infodemic governance across international and domestic contexts.

participation ladder, generalized trust theory's neglect of China's differential mode of association, and insufficient localization of the CCW framework for China's diverse communities. Anchored in a localized integrated theory of state-guided cooperativism and differential trust-building, this framework aims to retain the core strengths of China's hierarchical coordination model, address its structural weaknesses, advance health equity and community resilience, and contribute to China's experience in global health security governance.

CONCLUSION

As an exploratory theoretical analysis aligned with the context-adaptation principle of global RCCE frameworks, this study develops an integrated multi-theoretical analytical lens to diagnose practical gaps in China's RCCE system and proposes a context-adapted state-guided cooperative trust model tailored to China's governance context. This study has the notable limitation of not using primary field data or on-the-ground pilot verifications. Follow-up research will include empirical testing, pilot validation, indicator refinement, scale development, and cross-regional surveys to enhance the theoretical rigor and practical policy relevance.

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REFERENCES

1. COVID-19 National Preparedness Collaborators. Pandemic preparedness and COVID-19: an exploratory analysis of infection and fatality rates, and contextual factors associated with preparedness in 177 countries, from Jan 1, 2020, to Sept 30, 2021. *Lancet* 2022;399(10334):1489 – 512. [https://doi.org/10.1016/S0140-6736\(22\)00172-6](https://doi.org/10.1016/S0140-6736(22)00172-6).
2. Haldane V, De Foo C, Abdalla SM, Jung AS, Tan M, Wu SS, et al. Health systems resilience in managing the COVID-19 pandemic: lessons from 28 countries. *Nat Med* 2021;27(6):964 – 80. <https://doi.org/10.1038/s41591-021-01381-y>.
3. World Health Organization. WHO benchmarks for strengthening health emergency capacities. Geneva: World Health Organization; 2023. <https://iris.who.int/server/api/core/bitstreams/8883ae92-ecbe-4cc6-8ad4-500297ef1df9/content>.
4. World Health Organization. Communicating risk in public health emergencies: a WHO guideline for emergency risk communication (ERC) policy and practice. Geneva: World Health Organization; 2017. <https://iris.who.int/server/api/core/bitstreams/27ef4bb6-61ab-4870-b609-c09b2710633a/content>.
5. Zhu J, Cai Y. Engaging the communities in Wuhan, China during the COVID-19 outbreak. *Glob Health Res Policy* 2020;5(1):35. <https://doi.org/10.1186/s41256-020-00162-3>.
6. Xu BJ. "Participation of Party Organizations": an interpretive

- framework and path selection for effective community governance led by Party building. *Truth Seek* 2025(1):78 – 90,111-2. <https://doi.org/10.3969/j.issn.1007-8487.2025.01.006>.
7. Wang JX, Zhou YN, Liu XL. Information, trust and confidence: mechanism for constructing the risk community. *Social Stud* 2020;35 (4):25-45,241-2. http://sociology.cssn.cn/shxsw/shx_keyan/yjcg/xslw/202604/W020260428652010560085.pdf. (In Chinese).
8. Zhu ZW, Wang Q, Wu J. The occurrence and evolution logic of NIMBY Conflict: based on the Empirical Investigation of the local people of a coal mine facilities. *Nanjing J Soc Sci* 2017(3):81 – 9. <https://doi.org/10.15937/j.cnki.issn1001-8263.2017.03.011>.
9. Arnstein SR. A ladder of citizen participation. *J Am Plann Assoc* 2019;85(1):24 – 34. <https://doi.org/10.1080/01944363.2018.1559388>.
10. Simis MJ, Madden H, Cacciatore MA, Yeo SK. The lure of rationality: why does the deficit model persist in science communication?. *Public Underst Sci* 2016;25(4):400 – 14. <https://doi.org/10.1177/0963662516629749>.
11. Blair RA, Morse BS, Tsai LL. Public health and public trust: survey evidence from the Ebola Virus Disease epidemic in Liberia. *Soc Sci Med* 2017;172:89 – 97. <https://doi.org/10.1016/j.socscimed.2016.11.016>.
12. Norris FH, Stevens SP, Pfefferbaum B, Wyche KF, Pfefferbaum RL. Community resilience as a metaphor, theory, set of capacities, and strategy for disaster readiness. *Am J Community Psychol* 2008;41(1-2): 127 – 50. <https://doi.org/10.1007/s10464-007-9156-6>.
13. Yosso TJ. Whose culture has capital? A critical race theory discussion of community cultural wealth. *Race Ethn Educ* 2005;8(1):69 – 91. <https://doi.org/10.1080/1361332052000341006>.
14. Fan PP. "Decoding" the dilemma of grassroots mass autonomy: a study on the logic of internal and external separation of public participation in urban communities. *Jiangsu Soc Sci* 2021;(6):80-8. <https://qikan.cqvip.com/Qikan/Article/Detail?id=00002GGLL33O7JP0MND03JP16PR>. (In Chinese).
15. Liang Y, He LL. From the perspective of empowerment theory farmers' community participation in western minority areas is studied. *J Anshun Univ* 2021;23(4):11 – 7. <https://doi.org/10.3969/j.issn.1673-9507.2021.04.004>.
16. He M, Wang WW. Field re-invention and habitual reshaping: "village rehabilitation" community residents' participation in the dilemma and breakthrough. *Innovation* 2024;18(2):53-61. <https://d.wanfangdata.com.cn/periodical/CiBQZXJpb2RyY2FsQ0hJU29scjkyMDI2MDcyNzAzMTgxMhLLY3gyMDI0MDIwMDYhCG00dWc4cXlz>. (In Chinese).
17. Zhao DH, Wei X. "Five societies linkage" participating in urban multi-ethnic embedded community governance: framework selection, implementation path and logical innovation. *J Beihua Univ (Soc Sci)* 2021;22(4):101 – 7,153-4. <https://doi.org/10.19669/j.issn.1009-5101.2021.04.009>.