Proceedings of ICILLP 2025 Symposium: Digital Governance: Inter-Firm Coopetition and Legal Frameworks for Sustainability
DOI: 10.54254/2753-7048/2025.BR27430

Study on Cross-departmental Collaborative Governance Mechanism in Major Public Health Events

Kangrong Lin

Financial Account, Griffith College, Cork, Ireland
simondrx@163.com

Abstract. Connecting the dots of the W County case and the empirical reality of the COVID-19 pandemic, this paper thoroughly examines the structure of cross-departmental collaborative mechanisms, and the practical contradiction and optimization orientation of cross-departmental collaborative governance. The study reveals that while the dual functionality of structural-procedural mechanisms forms modern governance's foundational framework, current systems may partly suffer from weak horizontal collaboration, poor information sharing and the absence of collaborative zeal at present. The underlying reasons are incomplete legal mechanism, structural power constraints, deficiency of supporting mechanisms and basic capability weakness. Based on this, it is recommended to optimize the collaborative governance system from the fields of legal system, structural organization, information sharing, incentive supervision, and capacity building for the purpose of providing theoretical and practical references for improving the efficiency in dealing with major public health incidents.

Keywords: major public health events, cross-departmental collaboration, governance mechanism, SFIC model, emergency management

1. Introduction

As the first Public Health Emergency of International Concern (PHEIC) declared by WHO in the 21st century, the COVID-19 pandemic emerging in late 2019 became China's most severe public health crisis since 1949, characterized by unprecedented transmission velocity, cross-border penetration, and containment complexity [1,2]. Statistics show that the global COVID-19 pandemic has caused more than 64 million cases and 1.5 million deaths, and is projected to cause $82 trillion in losses for the global economy over five years [3,4]. Such events are marked by high professionalism, wide spread, complex threats and high comprehensive governance. Their response needs multiple departments such as health, transport, public security and commerce, and a single department cannot respond effectively [5]. The government has displayed "one country, one chessboard" collaborative power in epidemic prevention and control but also exposed problems such as a shortage of grassroots coordination and insufficient information sharing. With the "last mile" of emergency management, the grassroots government's capacity for cross-departmental coordination has a direct impact on the quality of prevention and control [6]. Being a touristy county with fame, W County receives more than 3,000 tourists a day and up to 30,000 tourists in peak tourist season.

© 2026 The Authors. This is an open access article distributed under the terms of the Creative Commons Attribution License 4.0 (https://creativecommons.org/licenses/by/4.0/).

DOI: 10.54254/2753-7048/2025.BR27430

Its establishment of the cross-departmental coordination mechanism has typical reference value for other similar areas.

At present, domestic research focuses on collaboration capabilities, dilemmas and mechanism building. Zhang Hongzhen identified structural cost-benefit asymmetry and institutional support deficits as primary constraints to interagency coordination [7]; While extant literature predominantly examines macro-level governance frameworks, granular analyses targeting grassroots administrations in high-mobility zones (e.g., tourist cities) remain scant. Conversely, international scholarship systematically investigates three collaborative dimensions: public value creation, networked organizational architectures, and real-time information symbiosis. Simo and Bies pointed out that cross-departmental collaboration is an effective solution to the inadequacy of single-department response [8]; Koliba et al. proposed to build an emergency management network covering the federal government to the community vertically and various departments horizontally [9]; Comfort and Kapucu emphasized the key role of information sharing in collaboration [10]. Existing research focuses on emergency capacity assessment or single department analysis, and there is a lack of systematic research on grassroots cross-departmental collaboration. This paper integrates collaborative governance theory and the SFIC model to construct a multi-dimensional analysis framework, enriching the theoretical system of emergency management of major public health events. In practice, the improvement of grassroots government cross-departmental collaboration capabilities will help improve the national emergency management system, especially for epidemic prevention and control in tourist cities and other areas with dense population mobility.

2. Theoretical basis and analytical framework

2.1. Definition of core concepts

Major public health events refer to sudden incidents such as major infectious disease outbreaks, mass unexplained diseases, and significant food or occupational poisonings that cause or may cause severe harm to public health. These events are characterized by their professionalism, diversity, and complexity [11].

Cross-departmental collaborative governance: the process of collaborative governance between different functional departments within the government and local governments in response to major public health events, across management boundaries, through resource integration, information sharing, and joint actions [12].

Collaborative governance mechanism: including structural collaborative mechanisms (such as organizational structure settings) and procedural collaborative mechanisms (such as workflow design), which are institutional arrangements to ensure the effective operation of cross-departmental collaboration [13].

2.2. Theoretical basis

Collaborative governance theory emphasizes that multiple stakeholders address complex public issues through cooperation. The comprehensive nested analytical framework developed by Emerson and Nabatchi includes dimensions such as the system environment, driving factors, collaborative dynamic mechanisms, and output effects. This framework offers a systematic perspective for analyzing cross-departmental collaboration [14]. The SFIC model, proposed by Ansell and Gash, encompasses four dimensions: starting conditions, catalytic leadership, institutional design, and collaborative process [15]. It focuses on promoting the collaborative process through catalytic

DOI: 10.54254/2753-7048/2025.BR27430

leadership and institutional design, making it suitable for analyzing multi-stakeholder collaboration in major public health events [15].

4R Crisis Management Theory: The Reduction, Readiness, Response and Recovery model proposed by Robert Heath provides guidance on the time dimension for the design of collaborative mechanisms for the entire emergency management process [16].

2.3. Construction of the analytical framework

Based on the above theory and combined with the case of W County, a four-dimensional analytical framework of "environment-structure-process-effectiveness" is constructed (Figure 1):

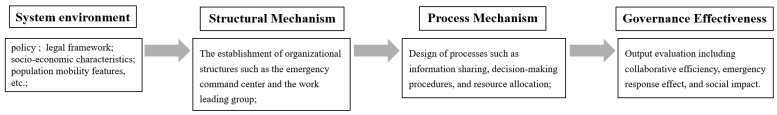


Figure 1. Analytical framework

3. Mechanism composition and operation status of cross-departmental collaborative governance

3.1. Structural coordination mechanism

To build an emergency command system, W County established a special emergency command for public health events under the Emergency Committee, with the deputy county magistrate in charge as the commander-in-chief. The member units include more than 40 departments and units, which are responsible for risk prevention, plan preparation and emergency response. This permanent institution provides an organizational carrier for cross-departmental coordination.

During the epidemic, a temporary leadership organization played a crucial role. A working leadership group was established, with the county party secretary as the commander-in-chief. This group oversaw 13 working subgroups, which covered comprehensive coordination, medical treatment, traffic control, and other functions, forming a "wartime" coordination structure. This temporary organization was instrumental in the rapid response to major events. A hierarchical coordination network was established, vertically spanning the county, township, and village levels, and horizontally covering departments such as health, public security, and transportation. This network forms a "strip-block combination" coordination structure. For example, W County set up a joint isolation point in the scenic area, where personnel from cultural tourism, health, public security, and other departments were stationed to facilitate on-site coordination.

3.2. Procedural coordination mechanism

The meeting decision-making mechanism relies on "leadership authority" to hold special work meetings, such as the joint prevention and control meetings held every day during the epidemic prevention and control period in W County, to coordinate the allocation of materials, information notification and other matters to ensure efficient decision-making. A "tiered responsibility" information reporting and sharing system is established, and grassroots units report data to the emergency command center every day, and report to the superior after summarizing. At the same time, data sharing between departments is realized through the government affairs platform, such as the health, medical and health departments and the transportation department sharing the flow of people in the epidemic area. Formulate a homogeneous emergency plan linkage mechanism for

DOI: 10.54254/2753-7048/2025.BR27430

public health emergencies, and clarify the responsibilities of each department in the early warning, response and recovery stages. The plan of W County covers special plans for epidemic prevention and control during the peak tourist season, reflecting the characteristics of the tourism industry.

3.3. Governance effectiveness analysis

Emergency response efficiency: At the onset of the COVID-19 epidemic, W County swiftly activated its emergency plan and implemented measures such as closing scenic spots and enforcing traffic control within 72 hours. This response was 30% faster than that of non-tourism cities.

Resource integration capability: through cross-departmental collaboration, medical supplies, police force, volunteers and other resources are deployed to achieve centralized and unified dispatch. For example, during the epidemic, a "three-person team" consisting of medical staff, public security and community workers was formed to be responsible for home isolation management.

Maintaining social stability: The coordination mechanism effectively mitigated public panic. W County disseminated information through multiple channels, including press conferences and new media platforms. The public satisfaction rate exceeded 85%, with 9.50% indicating that improvements were necessary and 5.20% expressing dissatisfaction.

3.4. Analysis of the actual difficulties and causes of cross-departmental collaborative governance

Main difficulties: There is a significant "segmentation" between departments. For example, overlapping responsibilities between the health and medical departments and the market supervision departments in regulating cold chain food lead to regulatory loopholes. Interviews in W County show that 62% of departments believe that horizontal coordination is less efficient than vertical coordination, 28% believe that horizontal coordination is more efficient than vertical coordination, and 10% believe that both are equally efficient.

There are "data barriers", such as the population mobility data of the public security and the epidemic monitoring data of the health and medical departments not being fully connected, which affects the accuracy of risk assessment. An official from a department mentioned, "The technical standards of different systems are not unified, and data docking is time-consuming and labor-intensive." In normalized prevention and control, the enthusiasm of departments to participate in coordination has declined. After the epidemic eased in W County, the frequency of duty at the joint quarantine point decreased by 40%, reflecting the lack of continuous coordination motivation. Some emergency plans are out of touch with reality. For example, emergency drills at tourist attractions are often mere performances, failing to simulate complex real-world scenarios. Drill evaluations show that only 38% of departments believe the plans are feasible, while 46% believe they are ineffective.

Analysis of causes: The legal framework is imperfect. The current "Regulations on Emergency Response to Public Health Emergencies" and other laws and regulations have vague divisions of responsibilities and powers for cross-departmental collaboration and lack mandatory clauses. For example, there is a lack of a clear accountability mechanism for departments that refuse to collaborate. The power structure restricts the response to emergencies. The "responsible to superiors" logic under the bureaucracy leads departments to pay more attention to instructions from superiors and pay insufficient attention to horizontal collaboration. Although the W County Emergency Command is a permanent institution, it lacks direct personnel management rights over member units.

DOI: 10.54254/2753-7048/2025.BR27430

The lack of supporting mechanisms, such as incentive, supervision, and compensation mechanisms, needs further improvement. Some departments reported the absence of a commendation system for outstanding collaborative departments. For example, W County did not include collaborative performance in departmental performance appraisals. Additionally, the collaborative process lacks transparency, making it difficult for the public and the media to effectively supervise. There is also a lack of economic compensation plans for departments whose interests are damaged during collaboration (for example, the cultural and tourism departments' income has decreased due to the closure of scenic spots) [17]. The basic capabilities are weak, and the performance in personnel quality and technical support is outstanding. Grassroots personnel lack cross-departmental collaboration training. Only 21% of emergency management personnel in W County have received system collaboration training; the construction of information systems lags behind, and most departments still rely on manual data reporting, with a low degree of automation.

3.5. Optimize the cross-departmental collaboration governance mechanism

Promote the revision of the "Law on Response to Public Health Emergencies", set up a special chapter to stipulate the organizational structure, information sharing, and accountability of cross-departmental collaboration, and enhance the legal binding force. Issue cross-departmental collaborative work specifications, and clarify technical details such as data format, interface standards, and collaborative processes, such as unified data collection standards for population mobility and medical monitoring. Prepare a list of cross-departmental collaborative rights and responsibilities, clarify the specific responsibilities of health, public security, transportation and other departments at different emergency stages, and reduce overlapping functions.

Upgrade permanent institutions by transforming the emergency command center into a physical institution and granting it personnel recommendation and assessment authority. For example, the secretary of the W County Party Committee could concurrently serve as the commander-in-chief to enhance the level of collaboration. Build a cross-regional collaborative alliance, such as establishing a collaborative mechanism for epidemic prevention and control between tourist cities, sharing tourist flow data, and jointly formulating prevention and control standards. Integrate social forces and incorporate enterprises and social organizations into the collaborative system, such as cooperating with tourism platforms to obtain tourist trajectory information and improve monitoring accuracy.

Unify the data middle platform, build a cross-departmental emergency data middle platform, integrate system data such as health, public security, and transportation, and achieve "one-stop viewing". W County can rely on the existing government cloud platform and invest special funds to upgrade and transform the system. Introduce big data analysis technology, model passenger flow, epidemic data and other data in real time, and provide scientific support for collaborative decision-making, such as predicting the peak period of tourists in scenic spots and deploying prevention and control forces in advance. Establish a collaborative work progress announcement system to regularly publish cross-departmental action results through government new media, thereby accepting social supervision.

Improve the incentive mechanism, incorporate cross-departmental collaborative performance into departmental performance appraisal, with a weight of no less than 15%, and give financial rewards to outstanding units. At the same time, build a supervision mechanism, establish a supervision committee composed of NPC deputies, experts and the public, and regularly evaluate the effectiveness of collaboration. For example, W County can publish a white paper on collaborative governance every quarter. Establish a special fund for cross-departmental coordination to provide

DOI: 10.54254/2753-7048/2025.BR27430

reasonable compensation to departments whose interests are damaged by coordinated actions, such as providing operating subsidies to cultural and tourism departments that close scenic spots.

4. Conclusion

Cross-departmental cooperative management of major public health incidents is a systematic project of multi-dimensional optimization of institutions, laws, technologies, and mechanisms. Through theoretical analysis and case study, this paper reveals the working rationale and realistic dilemma of structural and procedural collaborative mechanisms, and proposes specific optimization directions. Follow-up research can go on to emphasize: (1) how digital transformation affects collaborative governance; (2) collaborative model differences between different types of regions (e.g., first-tier cities and counties); and (3) the transformation of collaborative mechanisms between normalized prevention and control and emergency response. In addition to promoting the modernization of governing systems and governing capacity, cross-department collaborative governance systems will continue to improve and provide more stable assurance in addressing significant public health events.

References

[1] Y. Assefa, C.F. Gilks, et al., 2022. Analysis of the COVID-19 pandemic: lessons towards a more effective response to public health emergencies, Globalization and health 18(1) 10.
[2] K. DeSalvo, et al., 2021. Public health COVID-19 impact assessment: lessons learned and compelling needs, NAM perspectives. 10.31478/202104c.
[3] Y.S. Malik, et al. 2020., Coronavirus disease pandemic (COVID-19): challenges and a global perspective, Pathogens 9(7) 519.
[4] A. Mishrif, 2024. COVID-19 Effects on the Global Economy: An Overview, Economic Effects of the Pandemic: Implications for the Economy, Finance and Tourism. 3-23.
[5] K. Timmis, H. Brüssow, 2020. The COVID-19 pandemic: some lessons learned about crisis preparedness and management, and the need for international benchmarking to reduce deficits, Environmental microbiology 22(6) 1986-1996.
[6] H. Wang, J. Sun, Y. Shi, T. Shen, 2022. Driving the effectiveness of public health emergency management strategies through cross-departmental collaboration: Configuration analysis based on 15 cities in China, Frontiers in public health 10 , 1032576.
[7] H.-Z. Zhang, L.-Y. He, Z. Zhang, 2023. Can transverse eco-compensation mechanism correct resource misallocation in watershed environmental governance? A cost-benefit analysis of the pilot project of Xin'an River in China, Environmental and Resource Economics 84(4), 947-973.
[8] G. Simo, A.L. Bies, 2007. The role of nonprofits in disaster response: An expanded model of cross-sector collaboration, Public administration review 67, 125-142.
[9] C.J. Koliba, R.M. Mills, A. Zia, 2011. Accountability in governance networks: An assessment of public, private, and nonprofit emergency management practices following Hurricane Katrina, Public Administration Review 71(2) 210-220.
[10] N. Kapucu, V. Garayev, 2011. Collaborative decision-making in emergency and disaster management, International Journal of Public Administration 34(6), 366-375.
[11] A. Nicoll, et al. 2001. Managing major public health crises: Lessons from recent events in the United States and the United Kingdom, British Medical Journal Publishing Group, pp. 1321-1322.
[12] M. Hong, 2024. Research on Management Mechanisms of Cross-Departmental Collaboration in Solving Complex Public Problems, Open Journal of Social Sciences 12(12), 483-493.
[13] J. Newig, et al. 2018. The environmental performance of participatory and collaborative governance: A framework of causal mechanisms, Policy Studies Journal 46(2), 269-297.
[14] K. Emerson, T. Nabatchi, 2015. Collaborative governance regimes, Georgetown University Press.
[15] C. Ansell, A. Gash, 2008. Collaborative governance in theory and practice, Journal of public administration research and theory 18(4), 543-571.

DOI: 10.54254/2753-7048/2025.BR27430

[16] R. Heath, 1998. Dealing with the complete crisis—the crisis management shell structure, Safety Science 30(1-2), 139-150.
[17] Jiaqi Gan. 2021. Research on inter-departmental cordination of grass-roots gorverments in public health emergencices.