

Research Article

A Comparative Study of Public Health Governance Mechanisms and Performance in China and the United States During Routine COVID-19 Governance

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Abstract

As COVID-19 has entered the stage of routine governance, public health system development has gradually shifted from emergency response toward the strengthening of long-term governance capacity. This study compares public health governance mechanisms in China and the United States and examines the differences in governance performance between the two countries. Taking their public health governance practices during the routine COVID-19 governance stage as the research object, the study employs literature review, policy analysis, and comparative analysis to construct a three-dimensional analytical framework comprising organizational coordination, collaborative operation, and resource support. The findings indicate that China demonstrates strong institutional advantages in vertical organizational coordination, resource integration, and overall mobilization, whereas the United States has developed practices that provide useful reference in public health data standardization, cross-agency interoperability, and digital governance. Public health governance performance is not the direct result of any single governance measure but depends on whether organizational coordination, collaborative operation, and resource support can achieve effective and institutionalized coordination. On the basis of consolidating its strengths in centralized coordination, organizational mobilization, and resource integration, China may selectively draw on useful experience from the United States in data governance and digital infrastructure development. Further efforts should be made to improve cross-departmental collaboration, information sharing, and support mechanisms, thereby strengthening the long-term governance capacity of the public health system, enhancing its ability to respond to major public health risks, and continuously improving long-term public health governance performance.

Keywords

COVID-19, Public Health Governance, Governance Mechanisms, Governance Performance

1. Introduction

As coronavirus disease 2019 (COVID-19) entered the stage of routine governance, the development of public health sys-

tems has gradually shifted from emergency pandemic response toward the strengthening of long-term governance ca-

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capacity. The latest surveillance information released by national disease prevention and control authorities indicates that SARS-CoV-2 continues to circulate, underscoring the continuing practical importance of strengthening public health governance capacity [1-3]. Meanwhile, the focus of relevant research has gradually shifted from short-term crisis response to health system resilience and long-term governance capacity building [4, 5]. China and the United States represent different models of public health governance. Both countries have continued to improve their governance arrangements in areas such as disease prevention and control systems, coordination between medical services and public health institutions, and emergency preparedness, thereby providing representative cases for comparing the governance performance generated by different governance mechanisms.

Existing studies have primarily summarized public health governance experience in relation to pandemic response, institutional adjustment, and health system resilience, while proposing policy measures such as strengthening governance integration, maintaining sustained investment, and enhancing system-wide coordination [6, 7]. However, previous research has focused more extensively on specific reform measures and institutional arrangements, and a unified explanation of how governance mechanisms continuously influence governance performance remains lacking. In particular, further research is needed to clarify how organizational coordination, collaborative operation, and resource support jointly shape public health governance performance.

Accordingly, this study examines public health governance practices in China and the United States during routine COVID-19 governance. It constructs a three-dimensional framework of organizational coordination, collaborative operation, and resource support to compare how different governance mechanisms shape performance. The study argues that governance performance does not result from any single reform measure, but from the continuous improvement and coordinated operation of multiple mechanisms. China shows institutional strengths in organizational coordination and resource integration, while the United States offers useful experience in public health data interoperability. Together, these cases provide practical insights for improving public health governance systems.

2. Research Design

To address the question of how different public health governance mechanisms affect governance performance, this study develops its research design around three components: the research approach, research methods, and analytical framework. The purpose of the research design is not to provide a comprehensive assessment of the relative strengths and weaknesses of the public health governance systems in China and the United States, but rather to identify differences in the operation of governance mechanisms and their effects on governance performance within a unified analytical framework.

2.1. Research Approach

After COVID-19 entered the stage of routine governance, both China and the United States continued to improve their public health governance systems, although their governance pathways and operational performance differed. The two countries are selected as comparative cases to examine the governance mechanisms underlying specific governance measures, rather than to compare their national systems or pandemic control outcomes. The study follows the analytical sequence of “constructing an analytical framework—comparing governance practices—explaining performance differences.” Organizational coordination, collaborative operation, and resource support are used as the principal analytical dimensions to examine how different governance mechanisms influence the long-term governance capacity of public health systems.

2.2. Research Methods

This study primarily employs literature review, policy analysis, and comparative analysis. The research materials include policy documents and official reports issued by the World Health Organization (WHO), Chinese government authorities, the United States Centers for Disease Control and Prevention (CDC), and the United States Department of Health and Human Services, as well as peer-reviewed literature on public health governance and health system resilience. Using a consistent set of comparative dimensions, the study analyzes public health governance arrangements, changes in governance mechanisms, and observable operational performance in the two countries, and on this basis explains how governance performance is generated.

2.3. Analytical Framework

In this study, governance mechanisms refer to the internal operational processes through which institutional arrangements, organizational relationships, and operating rules jointly influence public health governance performance. These mechanisms include institutional arrangements related to organizational coordination, collaborative operation, and resource support, as well as the ways in which these arrangements interact. Governance mechanisms are distinct from specific governance measures; their defining feature lies in their capacity to exert a sustained influence on public health governance performance through institutionalized operation.

Public health governance performance refers to improvements in public health governance capacity resulting from the operation of governance mechanisms. It is primarily reflected in enhanced governance efficiency, governance coordination, and system resilience. The organizational coordination mechanism refers to the institutional arrangements governing the allocation of authority and responsibility and the coordination of different administrative levels and organizational actors. The collaborative operation mechanism refers to the operating

rules that enable healthcare institutions, disease prevention and control agencies, and related government departments to share information, coordinate responsibilities, and undertake joint action. The resource support mechanism refers to the institutional arrangements for the sustained allocation and mobilization of financial resources, professional personnel, material supplies, and digital infrastructure.

The three governance mechanisms respectively emphasize the organizational, operational, and support capacities of public health systems. However, they do not correspond mechanically to individual dimensions of governance performance. Organizational coordination, collaborative operation, and resource support are interdependent and jointly determine whether governance measures can be translated into stable and sustainable public health governance performance [8-10].

3. Comparative Analysis

After COVID-19 entered the stage of routine governance, public health capacity building gradually shifted from emergency response toward the strengthening of long-term governance capacity. In addressing common challenges such as organizational coordination, interinstitutional collaboration, and resource support, China and the United States developed different governance pathways. This section compares the public health governance practices of the two countries through three mechanisms—organizational coordination, collaborative operation, and resource support—with particular attention to how these mechanisms influence public health governance performance.

3.1. Organizational Coordination Mechanisms and Governance Efficiency

Organizational coordination is an important institutional mechanism affecting public health governance performance. Its effectiveness depends primarily on whether authority and responsibilities are clearly allocated, organizational relationships remain stable, and coordination across administrative levels operates smoothly. Its function is not simply to add administrative layers, but to reduce coordination costs in information transmission, resource allocation, and policy implementation [4, 10].

China's public health governance places greater emphasis on improving the organizational system for disease prevention and control. The Guiding Opinions on Promoting the High-Quality Development of Disease Prevention and Control, issued in 2023, called for strengthening the four-tier disease control system at the national, provincial, municipal, and county levels; improving multi-departmental and cross-regional joint prevention and control mechanisms; and enhancing surveillance and early warning, risk assessment, and emergency response capacity [11]. By further clarifying the responsibilities of administrative authorities, disease control agencies, and healthcare institutions, these arrangements

strengthen vertical operational coordination and provide an organizational foundation for unified risk assessment, resource deployment, and policy implementation during major public health emergencies.

The United States retains a basic governance structure in which federal, state, and local authorities jointly assume public health responsibilities, while placing greater emphasis on improving information connections among organizations. In 2023, the United States Centers for Disease Control and Prevention launched the Public Health Data Strategy (PHDS), and in 2024 it updated its interim objectives. The strategy seeks to improve data exchange among healthcare institutions, public health departments, and federal, state, and local agencies through measures involving data, technology, policy, and administration [12]. Its underlying logic is to reduce organizational friction through common standards and data interoperability, thereby improving cross-level coordination while preserving local autonomy.

Overall, the two governance pathways exhibit distinct characteristics. China relies on a vertically integrated organizational structure to strengthen unified command and resource coordination, demonstrating substantial organizational mobilization capacity during major public health emergencies. The United States places greater emphasis on information sharing and data interoperability and has certain strengths in cross-agency collaboration, although its decentralized governance structure also increases coordination costs. The effect of organizational coordination mechanisms on governance efficiency does not depend primarily on organizational form itself, but on whether clear responsibilities, effective information flows, and sustainable coordination relationships can be established [9, 10].

3.2. Collaborative Operation Mechanisms and Governance Coordination

Collaborative operation is an important mechanism connecting different actors within public health governance. Its principal objective is to promote sustained information sharing, responsibility alignment, and joint action among healthcare institutions, disease prevention and control agencies, and related government departments. Compared with adjustments to organizational structures, its core function is to translate institutional arrangements into routine mechanisms of cooperation within public health governance [6, 7].

In China, coordination between healthcare services and disease prevention and control institutions serves as a major instrument of collaborative governance. The Guiding Opinions on Promoting the High-Quality Development of Disease Prevention and Control called for deeper cooperation between healthcare institutions and professional public health agencies, stronger mechanisms for personnel exchange, information sharing, and service integration, and the exploration of disease control supervisor systems within healthcare institutions [11].

By the end of November 2024, pilot programs for disease control supervisors had been implemented in 254 prefecture-level cities across all provinces. Approximately 8,700 full-time supervisors and 33,700 part-time supervisors had been selected and assigned to 28,200 healthcare institutions [2]. These developments indicate that coordination between healthcare services and disease prevention and control has gradually moved from institutional design to large-scale implementation, thereby establishing a foundation for stronger coordination in public health governance.

Collaborative operation in the United States relies primarily on the development of public health data networks. The Public Health Data Strategy identifies data exchange among healthcare institutions, laboratories, and federal, state, and local public health departments as a major priority. By simplifying reporting processes, improving data quality, and increasing the timeliness of information, the strategy seeks to provide a common information base for case surveillance and risk-informed decision-making [12, 13]. This model can make effective use of the expertise of multiple actors, but its performance remains constrained by differences among information systems, inconsistent data standards, and unclear organizational responsibilities.

Overall, governance coordination does not depend on the number of participating actors, but on whether collaboration is supported by clearly defined responsibilities, common standards, and sustainable operating mechanisms. China is more likely to achieve stable coordination through its administrative organizational system, whereas the United States relies more heavily on cross-agency data sharing and network-based cooperation. The two models therefore reflect different institutional characteristics.

3.3. Resource Support Mechanisms and System Resilience

Resource support is a fundamental mechanism for maintaining the stable operation of public health governance systems. It includes not only emergency stockpiles, but also financial investment, professional personnel, laboratory capacity, and digital infrastructure. Its effectiveness depends less on the absolute scale of resources than on whether resources can be invested continuously, allocated dynamically, and rapidly converted into public health governance capacity during periods of risk and disruption [4, 9].

China's public health governance places greater emphasis on long-term capacity building. The Guiding Opinions on Promoting the High-Quality Development of Disease Prevention and Control called for establishing stable investment mechanisms and strengthening professional teams, research platforms, laboratories, and information technology capacity [11]. By the end of 2024, biosafety level 3 laboratories had been established in 26 provinces, the number of national emergency teams for acute infectious disease control had reached 25, and 3,380 primary-level infectious disease emergency response teams had

been established. Public hospitals at the secondary level and above were also deploying front-end software for intelligent infectious disease surveillance and early warning [2]. These measures indicate that China's resource support system has gradually shifted from temporary emergency investment toward routine capacity building, in line with the requirements of public health governance during the routine stage.

In the United States, resource support primarily centers on the Strategic National Stockpile (SNS), public health data infrastructure, and supply-chain capacity. In the fiscal year 2025 budget request submitted by the United States Department of Health and Human Services, US\$ 965 million was requested for the Strategic National Stockpile to maintain rapidly deployable reserves of medicines, medical supplies, and equipment [14, 15]. The SNS is designed to supplement state and local resources when routine supply channels are insufficient during major public health emergencies. Its effectiveness therefore depends not only on the quantity of stored materials, but also on procurement planning, inventory management, transportation capacity, and coordination among federal, state, and local authorities. Although a budget request does not necessarily equal the final appropriation, it reflects the important role of the Strategic National Stockpile in national public health preparedness and resource support.

Overall, system resilience is not the direct result of resource scale or short-term targeted investment. Instead, it depends on whether resource support mechanisms—including sustained financial investment, workforce development, material stockpiles, laboratory capacity, supply-chain preparedness, and digital infrastructure—can function continuously and effectively [4, 8]. It also requires resources to be allocated according to changing risk conditions and rapidly converted into operational capacity when emergencies occur. China places greater emphasis on resource integration and system-wide capacity building, whereas the United States gives greater priority to strategic stockpiles, supply-chain preparedness, and digital infrastructure. These two resource support models reflect different approaches to public health governance and offer distinct lessons for improving resource allocation, emergency preparedness, and the long-term resilience of public health systems.

4. Discussion

The comparative analysis indicates that public health governance performance during routine COVID-19 governance cannot be adequately assessed by the establishment of new institutions, the issuance of policy documents, or the scale of resource investment alone. These measures represent formal inputs into the governance system, but their effectiveness ultimately depends on whether they are translated into stable and coordinated operating mechanisms. In both China and the United States, governance performance is shaped by the interaction of organizational coordination, collaborative operation, and resource support. None of these mechanisms functions independently; instead, they jointly determine whether public

health governance arrangements can produce sustained improvements in efficiency, coordination, and system resilience.

Organizational coordination provides the institutional foundation for allocating authority, clarifying responsibilities, and reducing coordination costs across administrative levels and organizational actors. China's vertically integrated governance structure offers clear advantages in unified command, resource mobilization, and rapid policy implementation, particularly during major public health emergencies. These strengths allow governance decisions to be translated into coordinated action across multiple levels of government and public health institutions. However, organizational centralization alone does not guarantee long-term governance performance. Its effectiveness also depends on whether information can circulate efficiently, whether responsibilities are clearly defined, and whether coordination mechanisms can continue to operate after the immediate crisis has passed.

Collaborative operation serves as the mechanism through which formal institutional arrangements are converted into routine interorganizational practice. The Chinese experience demonstrates the importance of strengthening coordination between healthcare institutions and disease prevention and control agencies. Stable mechanisms for information sharing, personnel exchange, responsibility alignment, and joint action can reduce institutional fragmentation and improve the continuity of public health governance. The United States, by contrast, relies more heavily on cross-agency networks, standardized data systems, and digital interoperability. This model can mobilize the expertise of multiple institutions and preserve local flexibility, but its effectiveness may be constrained by fragmented authority, inconsistent technical standards, and unclear institutional boundaries.

The comparison therefore suggests that governance coordination is not determined by the number of participating organizations or by the formal structure of the governance system. Rather, it depends on whether participating actors operate under clearly defined responsibilities, compatible standards, and sustainable coordination procedures. China's administrative system is more conducive to stable vertical coordination, while the United States has accumulated valuable experience in data standardization, cross-agency interoperability, and digital governance. These differences should not be interpreted as evidence that one governance model is universally superior. Instead, they illustrate that different institutional systems generate different strengths and coordination challenges.

Resource support is equally important because organizational and collaborative mechanisms cannot function sustainably without stable financial investment, professional personnel, material reserves, laboratory capacity, and digital infrastructure. The findings suggest that system resilience does not result directly from the absolute scale of available resources. It depends on whether resources can be continuously invested, dynamically allocated, and rapidly converted into operational capacity when public health risks emerge. China has increasingly shifted from temporary emergency investment toward

system-wide capacity building, while the United States has placed greater emphasis on strategic stockpiles, supply-chain preparedness, and digital infrastructure. Both approaches demonstrate that long-term resilience requires institutionalized support rather than short-term project-based investment.

The findings also have practical implications for the modernization of China's public health governance system. China should continue to consolidate its strengths in centralized coordination, organizational mobilization, and resource integration. At the same time, selected elements of the United States experience may provide useful reference, particularly in public health data standardization, information interoperability, and digital infrastructure development. Strengthening these areas would not require adopting the broader decentralized governance structure of the United States. Instead, useful technical and managerial practices could be incorporated into China's existing governance framework to improve cross-departmental information exchange, risk identification, and evidence-based decision-making.

More broadly, public health governance has entered a stage in which long-term institutional performance is more important than temporary emergency mobilization. Future reforms should therefore focus on the coordination among governance mechanisms rather than isolated institutional adjustments. Clear authority structures must be supported by routine interorganizational collaboration, while both must be sustained by institutionalized resource support. Only when these mechanisms operate as an integrated system can governance inputs be converted into stable improvements in governance efficiency, coordination, and resilience.

The three-dimensional framework developed in this study provides a structured perspective for comparing public health governance pathways and interpreting differences in governance performance. Nevertheless, the study is based primarily on policy documents, official reports, and existing literature. Its findings therefore focus on institutional mechanisms and observable governance performance rather than direct causal measurement. Future research may further test the framework through quantitative indicators, subnational comparisons, or longitudinal analysis of public health governance reforms.

5. Conclusions

This study constructed a three-dimensional analytical framework consisting of organizational coordination, collaborative operation, and resource support to compare public health governance mechanisms and performance in China and the United States during routine COVID-19 governance.

The findings show that public health governance performance is not the direct result of any single reform measure. It emerges from the institutionalized and coordinated operation of multiple governance mechanisms. Organizational coordination improves the allocation of authority and governance efficiency, collaborative operation promotes information sharing and joint action among governance actors, and resource

support provides the material and institutional foundation for sustainable system operation.

China demonstrates notable strengths in vertical coordination, resource integration, and organizational mobilization, whereas the United States offers useful experience in public health data interoperability and digital governance. These findings suggest that China should preserve its existing coordination and mobilization advantages while selectively incorporating practices related to data standardization, digital infrastructure, and cross-agency information exchange.

As public health governance shifts from emergency response toward long-term capacity building, future reform should prioritize mechanism coordination, institutional continuity, and system resilience. Strengthening the interaction among organizational coordination, collaborative operation, and resource support will be essential for improving long-term public health governance performance and responding more effectively to future major public health risks.

Abbreviations

CDC	Centers for Disease Control and Prevention
COVID-19	Coronavirus Disease 2019
PHDS	Public Health Data Strategy
SARS-CoV-2	Severe Acute Respiratory Syndrome Coronavirus 2
SNS	Strategic National Stockpile

Author Contributions

Hao Yin: Conceptualization, Methodology, Investigation, Formal Analysis, Writing – original draft

Zuoming Yin: Supervision, Validation, Writing – review & editing

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Data Availability Statement

No new datasets were generated in this study. All policy documents, official reports, and published literature analyzed in this study are publicly available from the sources cited in the manuscript.

Conflicts of Interest

The authors declare no conflicts of interest.

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