

Collaboration and Cooperation of Public Health Service Management in China

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ABSTRACT

Objectives: Collaboration and cooperation are critical for public health management. Nevertheless, collaboration and cooperation between government departments, as well as other entities, are still in a weak condition in China. This article analyzes the status of collaboration and cooperation in the management of public health services in China and explores the problems and gives strategic suggestions for strengthening collaboration and cooperation in the development of public health service systems in China, in order to provide a reference for improvement of public health management in the future.

Methods: This study uses a qualitative case study approach, including documents review, in-depth interview, and focus group.

Results: The main problems of collaboration and cooperation in public health service management in China include problems of effective collaboration and cooperation between institutions and relevant departments, public information platform, and implementation of public health and health promotion. On this basis, several relevant policy recommendations are put forward.

Conclusions: Collaboration and cooperation are critical for the overall coordination and sustainable development of public health in China, and there is still work to be done in order to achieve appropriate cooperation and collaboration between different entities in the provision of public health services.

Key Words: collaboration, cooperation, health management, public health, public health service

Public health serves the people of different social classes, and its nature is diversified. When all components within a system address the same task, they need to collaborate and cooperate to solve any problems reasonably and achieve the ideal outcome. To promote the health of all, all components of a system must cooperate and collaborate; this is 1 of the core tenets of modern public health theory and practice.¹ In Beaglehole's 2004 definition, public health is a collective action aimed at improving human health for a long time.² This definition also reflects the need for organized collective cooperation and collaborative action in modern public health.² Modern public health service management derives from ideas and methods of public governance. Public health service proposes the diversification of governance and diversity of governance methods. This not only pays attention to the function of the public service, but also pays attention to mutual collaboration between all stakeholders and joint management of activities.³

Collaboration and cooperation are critical for achieving the goal of "health for all" and an important guarantee for the overall coordination and sustainable development of public health. The World Health Organization's (WHO's) promotion of "Health in

All Policies" requires collaboration and cooperation between different government departments. To promote the integration of public health in the formulation of all policies by various relevant departments, it is necessary for each policy to take into account the improvement of human health and the mitigation of unfavorable factors.⁴ Developed countries, such as the United States and the United Kingdom, attach great importance to cooperation and assistance among various relevant entities in the management of public health service systems, and have gradually established cross-departmental, cross-regional cooperative management systems and coordination mechanisms to build a public health information system that enables the different entities to cooperate and communicate with each other.^{5,6} However, in China, despite the improvements in public health systems, there is still work to be done in order to achieve appropriate cooperation and collaboration between different entities in the provision of public health services.

In recent years, in China, to strengthen departmental collaboration and cooperation and information communication, a good prevention and control system has been formed, and a government-led mechanism has been established and improved. The Chinese

government has established the State Council⁷ Inter-Ministerial Joint Conference System for the Prevention and Control of Major Diseases, and established an inter-ministerial coordination mechanism, a provincial linkage mechanism, and a regional joint prevention and control mechanism. It has also established information communication and technical exchange mechanisms with the WHO and relevant countries to effectively prevent outbreaks of acute infectious diseases, such as dengue fever. This international cooperation enabled the successful prevention of the Middle East respiratory syndrome, Zika virus disease, yellow fever, and other infectious diseases. The most important international achievement was to overcome the Ebola hemorrhagic fever epidemic in West Africa.

In the 21st century, there will always be challenges and the emergence of new problems. China's public health service system is unbalanced and inadequately developed. The system cannot satisfy the people's need for a better life. In response, China has put forward the key national strategy of "Healthy China" and has a target of improving the health of the whole population,^{8,9} which puts forward 5 strategies: (1) popularizing healthy life, (2) optimizing the health service, (3) improving health protection, (4) building a healthy environment, and (5) developing a healthy industry, from the perspectives of health effects of personal life and behavior, health care and security, production, and the living environment.¹⁰ The new concepts of "big health"¹¹ are physical health, mental health, behavioral health, intellectual health, moral health, and environmental health – and "Health in All Policies" will be fully applied in public health work practice.

This requires further development of departmental collaboration and cooperation in the public health service system, and motivates the government to establish an inter-departmental coordination mechanism as soon as possible. The relevant departments, agencies, organizations, and individuals of the government will further strengthen exchanges, clarify responsibilities, and strengthen collaboration and cooperation between departments.¹²

Nevertheless, collaboration and cooperation between government departments, as well as other entities, are still in a weak condition in China. This paper will explore the problems and strategic suggestions for strengthening collaboration and cooperation in the development of public health service systems in China, in order to provide a reference for improvement of public health management in the future.

METHODS

Data were collected in this research through a document review, in-depth interviews, and focus groups.

The review drew on a wide range of data sources, including journal articles, government documents, and policy reports.

TABLE 1

In-Depth Interview Key Informant Details			
Participants	Officers ^a	Heads ^b	In total
Department of Disease Control and Prevention	1	–	1
Science and Education Department	1	–	1
Grassroots Health Department	1	–	1
Health Promotion Department	1	–	1
Women and Children Department	1	–	1
General supervision division	1	–	1
Emergency Office	1	–	1
Information Statistics Department	1	–	1
Center for Diseases Prevention and Control	–	1	1
Maternal and Child Health Care Institution	–	1	1
Tuberculosis Control Institute	–	1	1
Mental Health Institution	–	1	1
Health Inspection Institute	–	1	1
Health Information Center	–	1	1
Red Cross Blood Center	–	1	1
Emergency Medical Center	–	1	1
In total	8	8	16

^a Officer of the Public Health Departments of Beijing Municipal Health Commission

^b Head of the municipal-level specialized public health institutions in Beijing

Journal article searches were made from the Library Catalog of Chinese Academy of Medical Sciences, and reference lists of retrieved articles and electronic literature databases, such as China National Knowledge Infrastructure, PubMed, and Web of Science. Government documents and policy reports came from the public health institutions, national, and local health departments in Beijing.

In-depth, semi-structured interviews were conducted with 16 key informants,^{13–15} including heads of relevant public health departments of Beijing Municipal Commission of Health and Family Planning (BMCHFP) and heads of the municipal-level specialized public health institutions in Beijing (Table 1). We asked key informants about the problems and suggestions for strengthening collaboration and cooperation in the development of public health service systems in China (see Appendix 1). Each interview lasted about 30 minutes.

Three focus groups were conducted to investigate participants' views and understand the status of collaboration and cooperation in the development of public health service systems in China (see Appendix 2). The first focus group addressed the development of the public health system at district and county levels, which was attended by the main leaders of the Health and Family Planning Commissions and disease control centers in 10 districts of Beijing. The second focus group addressed the major problems and challenges for the development of the public health system in Beijing, which was attended by 8 public health experts from the National Health and Family Planning Commission (NHFP), the Development Center for Medical Science and Technology of the NHFP, China's Center for

TABLE 2

Focus Group Interview Key Informants Details

Participants	National Organizations	Research Institutes and Universities		Associations	In Total
NHFPC	2	–	–	–	2
Development Center for Medical Science and Technology of the NHFPC	1	–	–	–	1
Chinese Center for Disease Control and Prevention	1	–	–	–	1
Institute of Microbiology Epidemiology, Academy of Military Medical Sciences	–	1	–	–	1
School of Public Health, Peking University	–	1	–	–	1
Chinese Medical Association	–	–	–	1	1
Chinese Preventive Medicine Association	–	–	–	1	1
In total	4	2	–	2	8

NHFPC = National Health and Family Planning Commission.

Disease Control and Prevention (CDC), the Peking University, the Academy of Military Medical Sciences, the Chinese Medical Association, and the Chinese Preventive Medicine Association (Table 2).

The third focus group addressed public health planning and the problems existing in the management work. It was attended by leaders from the Beijing Municipal Center for Disease Prevention and Control, the Municipal Health and Family Planning Inspection Institute, the Information Center and the Comprehensive Supervision Office of the BMCHFP, and the relative departments of the BMCHFP (Department for Disease Prevention and Control; Information Statistics Department; Health Promotion Department; Grassroots Health Department; Department for the Elderly, Women and Children Department; Science and Education Department; Emergency Office; the Finance Department; and the Personnel Department).

The participants of in-depth interviews and focus groups were identified and recruited with the assistance of the Beijing Municipal Health Commission, using informal networks of local public health institutions. This study analyzes the in-depth interviews and focus group by coding the main points of each participant from the transcripts and comparing those results to what other researchers have found in order to increase their validity. The qualitative data were analyzed through the following steps: (1) dividing the information according to the objectives; (2) categorizing the information; (3) developing a matrix and flow chart to sum up the information; (4) identifying the variables and relationship between variables; (5) determining the confounding variables or intervening variables; and (6) finding links, chains, and facts logically.

RESULTS

There are many problems of collaboration and cooperation in public health service management in China.

Lack of Effective Collaboration and Cooperation Between Public Health Institutions, Medical Institutions, and Relevant Departments

Public health work is very extensive and involves different sorts of expertise and different departments of government. Coordination between multiple departments, especially when dealing with major outbreaks and public health emergencies, becomes very important.¹⁶ However, for a long time, the Chinese government lacked an overview and guidance in the development of various public health institutions. The public health agencies were developed independently, so the lack of common interests and goals, coupled with the lack of government management, has led to serious shortcomings in the public health system. The functional positioning of professional public health service networks and medical institutions in areas such as disease prevention and control, health education, maternal and child health care, mental health, emergency treatment, blood collection and blood supply, health supervision, and family planning is not clear. The various types of business within the public health system also lack mechanisms for cooperation, there is little motivation for collaboration, and there is no effective mechanism for coordination between departments. In the face of complex and urgent situations, it is difficult to form a unified command mechanism, and it is not possible to effectively cope with the outbreak of infectious diseases and the health problems of more serious chronic diseases. The problems include such phenomena as duplication of law enforcement and duplication of supervision in day-to-day supervision and law enforcement. Lack of a unified data exchange platform and lack of information sharing between multiple monitoring systems cause difficulties in monitoring data sharing data with other departments.¹⁷ A lack of effective collaboration and cooperation mechanisms between health care institutions at all levels, the long-term separation of medical systems and public health systems that undertake public health work, the separation of prevention and treatment, and the emphasis on treatment over prevention have not been alleviated, and public health work is lacking in effective management.¹⁸ At the same time, there are difficulties in

coordinating the health system with other government departments such as the Ministry of Human Resources and Social Security, the National Development and Reform Commission, the Ministry of Finance, the Office of the Central Organ Establishment Committee, and the Ministry of Agriculture. The lack of coordination between various institutions has seriously affected the continuity and efficiency of public health services.

As mentioned by an officer of Women and Children Department: “It is very important for all sectors of public health to work together, but in terms of the overall nature of the work, overall coordination among the departments is sometimes weak.”

As mentioned by the Dean of the Red Cross Blood Center: “The focus of public health service planning is to facilitate the coordination of resources among the health system and other systems, so the public health service planning should be authorized by the national government to facilitate the comprehensive coordination and cooperation between the relevant systems for public health, and to solve the problems that the health system cannot solve itself. It should not be restricted to work only within the health system.”

Cooperation and Mutual Communication is Difficult for Public Information Platform

The information technology of medical and health institutions in China has been developed, but the establishment of a regional health information platform and the development of a data sharing mechanism are relatively slow. It is difficult to form the management and application of public health information resources across sectors, big health, and big data. The health information of existing residents has not been unified, and there is no uniform standard for the mutual circulation of health data, so it is difficult to manage and use resources. Many information systems, such as public health and medical services, in China, are built according to specific fields and scopes, and they are relatively closed systems. Their standards have not been unified, and there is a lack of mutual communication, information sharing, and coordinated public health information management platform. The problem of “information silos” – an information system that cannot interoperate or coordinate with other related information systems – has not been fundamentally resolved. At present, the needs of residents for comprehensive health management cannot be met.

As mentioned by an officer of the Information Statistics Department: “Public health requires multi-level coordination, such as cross-cutting joint committees, the electronic health records, medical emergency and public security counter-terrorism, all of which are cross-sectoral, including the issue of food and drug monitoring, as well as collaborative efforts.”

As mentioned by an officer of Emergency Office: “The linkage of the information platforms between the first-aid platform of

Beijing and the firefighting, public security, and transportation departments is not a problem, but there is no information sharing among the platforms, and the mechanism for coordination and cooperation of such data sharing has not been established.”

The Implementation of Public Health Projects Lacks Management and Coordination Mechanisms

Public health practice needs to be directly oriented to the public. Thus, in the process of implementing many public health projects, the implementation agencies are mainly “grassroots” organizations, such as a community health center and village clinic. There is often a lack of mechanisms for management and coordination between disease control, community health, women and children, and so on. As a result, the projects often do not meet their targets, and sometimes the distance from the target is very large. Since the severe acute respiratory syndrome (SARS) outbreak in 2003, the provincial and regional governments have also begun to pay attention to public health issues. They carry out many public health projects, which play an important role in promoting population health and social and economic development. However, in the process of implementation of these projects, problems such as imperfect management and low efficiency in organization, cooperation, and coordination have become apparent.¹⁹ In particular, in some major national projects, the leading units belong to different institutions, lack effective management and coordination, and there is the possibility of duplication of effort, which increases the burden of duplication of work at the grassroots level and wastes limited project funding and opportunities for the public.²⁰ Due to the lack of an effective cooperation platform, the relevant government departments are independent and lack collaboration. The effectiveness and efficiency of public health project management in China are low, and the projects have not achieved the desired goals.²¹

As mentioned by an officer of Disease Prevention and Control Department: “For the work of the disease control office, many tasks need to be done together by multiple departments and society in order to accomplish our work; the prevention and control of chronic disease is a case in point. Chronic disease is currently managed in a multi-layered way, and the formation of a resultant task-force is most important.”

As mentioned by the Dean of Mental Health Institution: “Beijing has carried out multi-sector cooperation management in accordance with the national requirements in terms of mental health care. However, the cooperation between some districts and counties is still relatively weak.”

Lack of Comprehensive Collaboration and Cooperation in Health Promotion

Since the National Health and Wellness Conference, health work in China has gradually received the attention of governments at all levels, and various departments have strengthened

and carried out health promotion and education work. However, at present, resources are relatively scattered, there is no unified command, and collaboration and cooperation are poor, resulting in a waste of resources. Health education and health promotion work require the Health Department to organize, plan, and advocate, but there is still no cooperation or support from other departments and institutions. In the work of health education, although several methods of health promotion have been used, the multiple departments do not work together, and they have not accepted responsibility for their own part in promoting health. Due to the lack of an effective cooperation platform, the relevant government departments are independent and do not collaborate. Again, the result is the low level of effectiveness and efficiency for public health project management, which leads to the poor performance for projects.²¹ Situation of general lack of communication between actives, but the most needs of cooperation and collaboration are these.

As mentioned by an officer of the Health Promotion Department: “The health promotion work involves additional relevant departments of the Health Commission, as well as other departments outside of the Health Department. Cooperation with these groups is something that a health promotion department cannot accomplish by itself, and the matter needs to be taken to the Health Promotion Committee or the national government level to coordinate the Health Department and other relevant departments (such as the Environment Department, the Sports Department), as well as the education sector, and so on, with the introduction of policy-related work from the top level. The Health Promotion Service of the Health Department and Health Committee can be responsible for coordination only. It cannot achieve cooperation with external sectors. In fact, the mechanism for coordination and cooperation of the offices even within the health system is not very smooth.”

DISCUSSION

There are some suggestions for strengthening collaboration and cooperation in China’s public health service system

Improving the Coordinated Public Health Service System and Establishing an Effective Cooperation Mechanism for Multiple Departments

Effective implementation of the strategies of a “healthy China” and “integrate health into all policies,” National Health Commission and relevant departments should promote strategies of health China, policy support, and so on. Efforts will be made to build a platform for multiple entities to participate together, improve the mechanism for equal consultation between multiple entities, and further strengthen the integrity and synergy of the public health system. It is necessary to clarify the health responsibilities of health and related departments in relation to public health, and to further clarify the public

health service system: Clarify the functions of professional public health institutions, medical institutions related to public health, and other related institutions, and establish effective collaboration and cooperation mechanisms for multiple departments as much as possible. Promote the combination of medical care and prevention, and establish a collaborative, smooth, and diversified public health service system. Strengthen the cooperation between the CDC and the specialized disease prevention and control institutions, integrate resources, and promote the overall development of prevention, treatment, health, management, and protection of chronic diseases. Establish and improve the collaboration of disease control, hospitals, primary health care institutions, communication between departments, and complementary mechanisms. Organize regional medical resources, improve management system, and communication and cooperation mechanisms among multiple departments, and establish and improve health emergency management systems, regional medical emergency, and regional laboratory emergency collaboration networks. Formulate regional emergency medical rescue emergency plans. It would be useful to extend this collaboration to include disease control departments, hospitals, agricultural departments, and environmental protection departments.²²

Establishing and Improving the Communication and Mechanisms for Sharing Data Between Public Health Organizations as Well as Local Hospital

Informatization can further strengthen the reform of the medical and health system, improving the health and wellness service system, and building a healthy China. The sharing of public health data can further improve scientific decision-making and emergency handling capabilities, administrative management capabilities, and business processing efficiency at all service levels.²³ It is necessary to do an effective job in the planning and design of public health and residents’ health information in China, and establish a health information management platform that can facilitate communication between all stakeholders. It is necessary to strengthen the coordination mechanism of business and information departments in the construction of management systems, to strengthen coordination mechanisms between different departments, and to establish communication and sharing mechanisms. Reduce the “siloeing” of information systems, effectively integrate and systematically analyze public health and residents’ health records, electronic medical records, and other health resources information.

Strengthening Collaboration and Cooperation Mechanisms Between Public Health Projects and Health Promotion

There are many stakeholders in the implementation and management of public health projects. Doing a good job in organization, collaboration, and cooperation is an important guarantee for the smooth implementation and efficiency of

any project. It is necessary for health professionals to take the government as the leading factor to establish and improve the collaboration and cooperation mechanism of various departments in relation to public health projects, and to improve the management and effectiveness of the project. Health departments should strengthen a full collaboration and cooperation between the basic public health service projects and major public health service projects and adhere to the principle of national and departmental level cooperation. Health and other relevant departments should establish an effective collaboration and cooperation mechanism, and strengthen the health and education promotion systems.

Strengthening Global Research on Public Health Governance and Strengthening International Cooperation and Collaboration

The sustainable development of public health work is closely related to the cooperation and assistance of the international community. The Department of International Affairs must coordinate mechanisms for domestic and international health cooperation, cooperate with the national “One Belt, One Road” strategy, strive to cooperate with the Association of Southeast Asian Nations, Shanghai Cooperation Organization, BRICS and other disease prevention and control mechanisms, actively participate in and support the global health emergency mechanisms and emergency teams established by the United Nations and the WHO to effectively address major infectious diseases, establish cooperation agreements with countries along the “One Belt, One Road” in the field of disease control work, establish information communication mechanisms for common and emerging infectious diseases in relevant countries, and strengthen cross-border prevention and control mechanisms. Actively participating in the establishment of the African Center for Disease Control and Prevention, strengthening south-south health cooperation, sharing the reporting and management techniques and experience of infectious diseases in China with other countries and regions, to improve the capability of disease control in the international community, organizing and conducting planned and strategic global public health research to guide international health communication and disease prevention and control cooperation, and efforts are made to share Chinese disease control technology and wisdom for global health governance.²⁴

CONCLUSION

Collaboration and cooperation between government departments, as well as other entities, are still in a weak condition, which is critical for the overall coordination and sustainable development of public health in China. There is still work to be done in order to achieve appropriate cooperation and collaboration between different entities in the provision of public health services.

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Author Contributions

Wuqi Qiu contributed to the study design, data collection, data analysis, and writing of this research; Cordia Chu contributed to the study design, data analysis, and writing; Kun Wang was responsible for the study design, data analysis, and writing; Yujie Yang was responsible for the study design and data analysis; Yueli Meng was responsible for the data collection and writing; and Ayan Mao was responsible for the study design, data analysis, and writing.

Availability of Data and Materials

The data sets generated and/or analyzed in this study are available from the first author or corresponding author on reasonable request.

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Conflict of Interest Statement

The authors have no conflicts of interest to declare.

Consent to Publish

All authors have approved this manuscript for submission and claim that none of the material in the paper has been published or are under consideration for publication elsewhere.

Ethics Approval and Consent to Participate

The Chinese Measures for the Ethical Review of Biomedical Research Involving Humans issued by the National Health and Family Planning Committee of the People's Republic of China on October 12, 2016. According to the definitions in the article 3 of the first chapter of this regulation, the questionnaire and in-depth interviews of this study don't need to be reviewed, so this study would not require ethical approval under Chinese regulations. Interviews among participants were performed only when the written informed consent was obtained from the respondents. Participation was entirely voluntary, and the anonymity of responses was guaranteed.

Supplementary Material

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