Research on the optimization of collaborative mode under normalized epidemic prevention and control background in maternal and child health care institutions

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Abstract

Under the background of normalized epidemic prevention and control,Enhancing the coordination ability within maternal and child health care institutions can effectively reduce the losses caused by COVID - 19 outbreak and ensure the diagnosis and treatment activity in hospital orderly. This paper introduces the theory of collaboration governance and constructs the internal collaboration system of "policy collaboration, information collaboration, relationship collaboration and technology collaboration", which provides reference for institutions to improve emergency management ability.

Keywords

collaboration governance,internal collaboration, epidemic prevention and control, maternal and child health care institutions

The novel coronavirus pneumonia (NCP) is an acute respiratory infectious disease caused by the novel coronavirus infection. Due to its strong infectivity and widespread susceptibility, it has been included as a Class B infectious disease and is managed as a Class A infectious disease [1]. The Opinions on the Standardization Construction and Standardized Management of Maternal and Child Services and Institutions (54) [2] issued in 2015 pointed out that maternal and child health is related to the improvement of the overall quality of Chinese population and the comprehensive implementation of the strategy of healthy China. Since the outbreak of COVID-19, it has brought great challenges to all medical institutions. In 2020, The State Council successively issued the Notice on Prevention and Control of Novel Coronavirus Pneumonia in Children and Pregnant Women (Pneumonia mechanism (2020) No. 17 [3] and the Notice on Strengthening Treatment of Diseases and Safe Midwifery during the Prevention and control of novel Coronavirus Pneumonia (pneumonia mechanism (2020) No. 25) [4] And other relevant documents require that, based on the particularity of the population served by maternal and child health institutions, maternity inspection and hospital delivery must be guaranteed, but there are still many problems in the actual work. For example, in December 2021, there was one abortion in Xi 'an. In March 2022, the pediatric clinic of a hospital in Beijing was closed. Therefore, against the background of regular epidemic prevention and control, how to fight the epidemic, carry out maternal and child health services and guarantee the safety of mothers and children in accordance with the work deployment of the NHC has become a difficult task. Based on this, this study took the theory of collaborative governance as the entry point and combined with the current situation of regular epidemic prevention and

control in maternal and child health care institutions to explore suggestions and optimization strategies for the establishment of internal collaborative governance system.

1 Theoretical basis of collaborative governance

Collaborative governance theory is a new theory formed by the cross integration of collaborative governance theory in natural science and governance theory in social science, which has strong explanatory power for the collaborative development of social system [5]. In the process of public decision-making, multiple subjects such as the government, companies and the public may be involved in order to achieve public goals that cannot be achieved by a single force [6]. The theory of collaborative governance is mainly used to study the overall or collective effect produced by the interaction between different groups in the system. Its purpose is to improve the overall quality and efficiency through its own internal synergy and interaction. It is one of the ways to solve systems and complex problems, as well as one of the theoretical bases for building various systems [7].

In this paper, the collaborative governance of regular epidemic prevention and control in maternal and child health care institutions is regarded as a composite system, which is formed by the combination of internal collaborative governance subsystem with different attributes and external collaborative governance subsystem. The int ernal coordination of the organization takes itself as the main body, and through the effective interaction of the key management elements of the internal system, the management goal of regular epidemic prevention and control can be achieved. Institutional external coordination is to cooperate with external relevant entities (government agencies, health authorities, medical consortials, communities, etc.) to jointly achieve the management goal of regular epidemic prevention and control. Continuous, close and stable internal coordination is the basis and guarantee of external coordination. The establishment and improvement of internal synergy mechanism is helpful to improve the degree of synergy between internal and external synergy, as well as the establishment of the overall synergy mechanism. Therefore, the development of internal synergy and external synergy is a process of mutual action and promotion. (Figure 1)

Internal governance involves multiple and multi-partner governance in a wide range of fields within the organization [6]. The main body of the internal governance system of maternal and child health care institutions includes the Party committee leadership system, the administrative management system, and the medical, administrative, information, logistics and third-party service systems. Therefore, how to realize the coordination among the internal systems and maintain the normal diagnosis and treatment order requires the establishment of the internal collaborative governance system of maternal and child health care institutions.

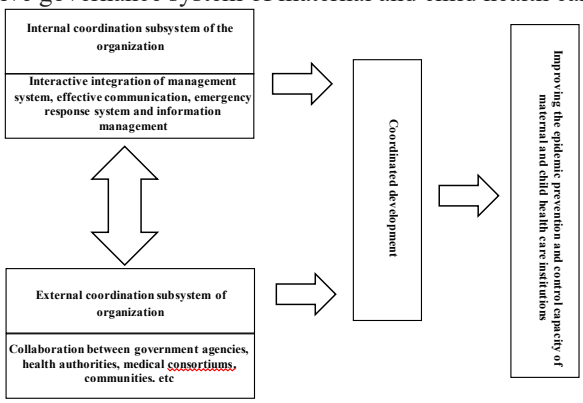


FIG. 1 Mechanism of internal and external synergies and interactions in maternal and child health care institutions

2 Problems in epidemic prevention and control in maternal and child health care institutions

Based on the theory of collaborative governance, this study uses one-to-one interview and observation method to explore the problems, and tries to analyze the existing problems of epidemic prevention and control in maternal and child health institutions from the perspective of collaborative governance. In the one-to-one interview, 7 Party secretaries and 7 deans of maternal and child health institutions of different levels and 12 persons in charge of functional departments of epidemic prevention and control (including medical department, nursing department, hospital sensory department, emergency office, General Affairs Department, etc.) were mainly interviewed, with more than 30,000 words of interview records. To observe the epidemic prevention and control process and disposal measures in designated institutions. In the normal epidemic prevention and control, maternal and child health care institutions need the joint participation and coordination of multiple departments (Figure 2). Due to the complex system, there are many difficulties, which are mainly reflected in the following aspects.

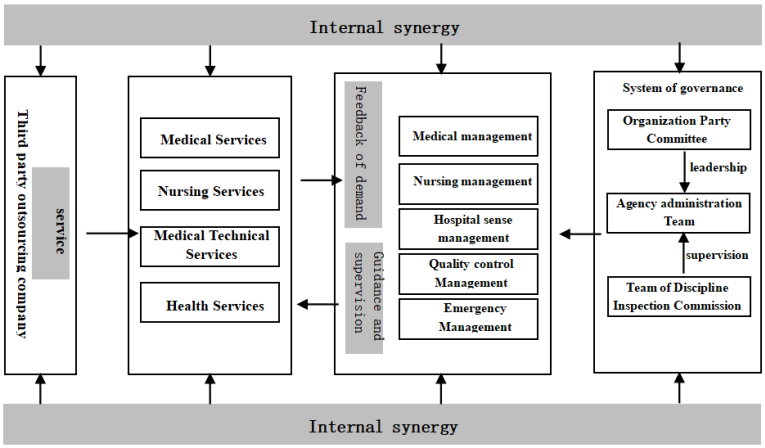


FIG. 2 Internal collaborative governance logic and model structure of maternal and child health care institutions

2.1 System level: The management system is segmented

When maternal and child health care institutions face the COVID-19 epidemic, the internal coordination of the system and process system is not perfect, resulting in the work of all departments lack of systematic and unified constraints. Therefore, the system coordination level is segmented and part of the system is inconsistent. In addition, there are also problems such as updating the system, not timely training and education, and lack of assessment of system implementation. As a result, the epidemic prevention and control management system will become useless, unable to play a normative, guiding and supervising role.

2.2 Information level: internal information communication is difficult

Professor Haken found a new type of information called "collaborative information" when he referred to the concept of information to solve the problem of self-organizing system emerging macro structure through non-equilibrium phase transition [8]. In order to ensure that all departments are informed of the epidemic

prevention and control information in a timely and comprehensive manner, it is necessary to establish an information collaborative operation mechanism to ensure that the management priorities of the organizations are adjusted in a timely manner according to the development of the epidemic situation. From the perspective of horizontal communication, due to different powers and responsibilities and work tasks, functional departments have different information, work tasks and requirements, so the communication effect is poor. From the perspective of vertical communication, the approval process of different levels, such as the management level, management level and executive level, is complicated, resulting in communication difficulties. Due to the lack of efficient information coordination, the organization as a whole suffers from effective communication barriers, which cannot ensure that all departments within the organization can timely grasp epideia-related information and leadership decisions, and adjust their governance behaviors accordingly.

2.3 Mechanism level: The emergency management system is weak

As a public health emergency, the COVID-19 pandemic has posed major challenges to maternal and child health institutions. During the epidemic prevention and control work, many problems in the institutional emergency management system have been exposed. Unlike general hospitals and infectious disease prevention and control hospitals, maternal and child health institutions lack of experience in the treatment of infectious diseases. In the face of an outbreak, problems such as incomplete process management system, incomplete response guarantee system, incomplete data transmission system, and imperfect safety protection system were exposed. In addition, due to the special characteristics of maternal and child health care institutions, some medical personnel are not enough to carry out the knowledge of infectious diseases and clinical guidelines, and the ability to diagnose infectious diseases and the awareness of first-line clinical reports need to be improved [9].

2.4 Technical level: informatization construction lags behind

Information means play an important role in standardizing epidemic prevention [10]. The current information system still has shortcomings in supporting the routine epidemic prevention and control in maternal and child health care institutions. The types of personnel involved in the routine epidemic prevention and control are different, and there are the following problems. First, the data is distributed in different business systems and the data is relatively dispersed, making it difficult to manage the information of all personnel uniformly [11]. Second, it is difficult to coordinate the information systems outside the hospital. Third, the information systems within the institutions are independent of each other, and epidemic prevention materials cannot be monitored and predicted in real time, resulting in data errors and low extraction efficiency.

3 Optimization of epidemic prevention and control in maternal and child health care institutions

The Declaration of Alma-Ata clearly states that health for all is the most important social goal and that achieving this goal depends primarily on health systems and cross-sectoral action [12]. From the perspective of internal collaborative governance, in order to better cope with the normalization of epidemic prevention and control, this study believes that optimization can be carried out in the following aspects.

3.1 Policy coordination: Establish a dynamic adjustment mechanism for epidemic prevention policies

According to the synergy theory, it is necessary to establish the corresponding management system as the control parameters, so as to clarify the behavior pattern and correlation pattern of each subsystem of the internal governance system in the context of standardized epidemic prevention and control, so as to form an orderly internal governance system. Maternal and child health institutions should strengthen the construction and standardized management of the system, and timely revise and update the system process and emergency plan according to the epidemiological characteristics of the novel coronavirus infection and the development of the epidemic situation released by the health authorities. In addition, the characteristics of maternal and child health care institutions should be taken into account, and Measures for the Management of Green Channels for the Treatment of pregnant and pregnant women should be formulated to ensure that the needs of pregnant and pregnant women and children are guaranteed.

3.2 Information collaboration: Build an efficient and dynamic effective communication mechanism

ollaborative information can ensure that all departments in the system can timely grasp epidemy-related information, and timely adjust their governance and control activities according to the development of the epidemic situation. Maternal and child health care institutions can further improve the information sharing mechanism through the in-hospital information platform or communication platform, strengthen the disclosure of in-hospital information related to the epidemic, and ensure that all departments can timely adjust their management behavior according to the requirements of the organization. At the level of communication mechanism, firstly, from the perspective of horizontal communication, during the epidemic period, organizations should establish an information platform to collect and timely release relevant information, so as to achieve a high degree of coordination of the content, measures and requirements of the horizontal governance of various departments; Second, from the perspective of vertical communication, timely transfer of information from the management department to the executive department to reduce the problem of information transmission attenuation and management disconnection.

3.3 Relationship coordination: Establish timely adjusted departmental relationships

Synergy theory is a scientific theory that studies the competition and cooperation among various factors or subsystems in a complex system, and its research object must be complex, open and far from the equilibrium state [13]. Regular epidemic prevention and control is a complex system. "Peacetime" refers to the period between the end of the COVID-19 pandemic and the onset of a new epidemic. It is a period of preparation, prevention and mitigation. The period after the "wartime" COVID-19 outbreak is the emergency response phase. Maternal and child health care institutions should clarify the dominant and subordinate positions of their internal governance systems in "peacetime" and "wartime", and switch between "peacetime" and "war" according to the changing trend of the epidemic. (Figure 3)

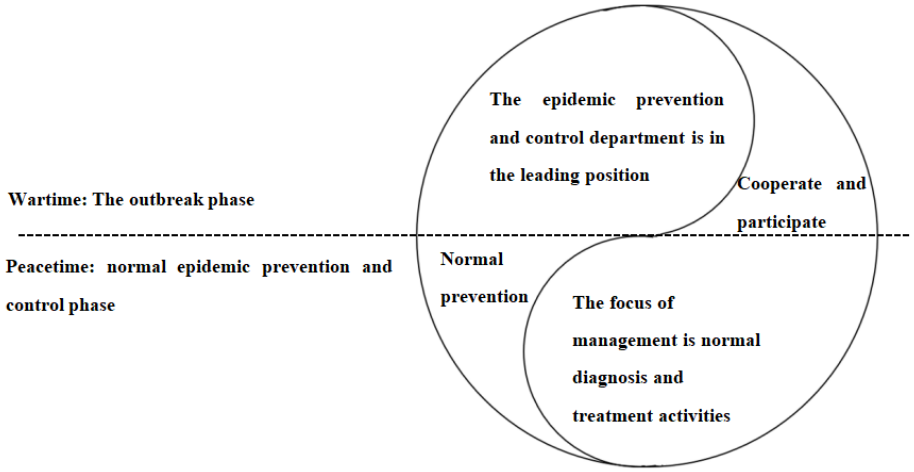


FIG. 3 Logical framework of internal emergency management system for epidemic prevention and control under the mode of "peacetime and war combined"

3.4 Technical collaboration: an epidemic prevention and control platform based on scientific and technological innovation

It supports normal epidemic prevention and control through informatization, focusing on the integration of data resources related to epidemic prevention and control, including personnel information, diagnosis and treatment information, material information, etc., and the rapid integration of relevant business system data [14]. First, promote the construction of Internet hospitals. For example, online consultation and consultation services can effectively reduce the gathering and stay time of patients and caregivers in the hospital, and effectively reduce the possibility of cross-infection in the hospital. The second is to strengthen the pre-hospital prevention and control platform, such as health code pre-hospital audit, to conduct risk screening of patients and family members in advance; Third, information management should be carried out on key materials and resources for epidemic prevention and control, including the use and surplus of consumable materials such as masks, face screens and isolation clothing, and the consumption of each department. Fourth, visual management of key medical areas in epidemic prevention and control, including fever outpatient clinic, isolation ward and intensive care unit, and real-time monitoring of escort conditions in intensive care unit through visualization [15]. In addition, it can also make full use of artificial intelligence technology, such as VR virtual reality technology accompanied by 5G technology, which can be applied to pregnant women's classes and newborn visitation platforms. Live broadcast of maternal health education and interaction on the platform, such as yoga classes for pregnant women; One-stop "Internet Plus maternal and child health" public services are provided to pregnant women and children. Regular epidemic prevention and control is a long-term task for the organization, which can play a huge role in integrating all epidemic prevention and control data in the hospital by means of information technology and issuing early warnings through various channels through the platform.

4 Research Conclusions

Based on the above description and analysis, this study proposed an optimization framework for the internal

coordination mode of regular epidemic prevention and control in maternal and child health care institutions from the perspective of collaborative governance, namely, the internal coordination system of maternal and child health care institutions. (Figure 5)

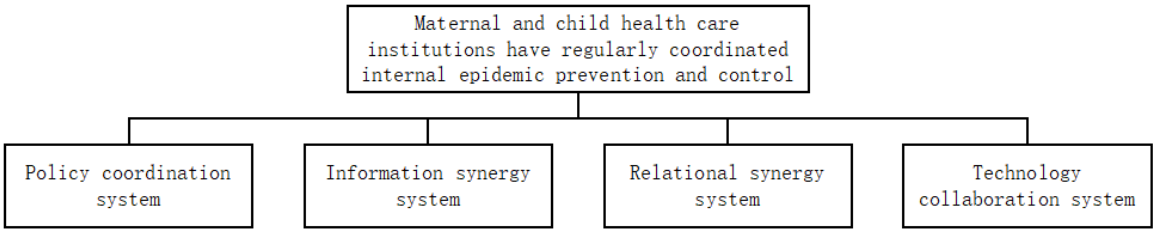


Figure 5 Internal coordination system of regular epidemic prevention and control in maternal and child health care institutions

To build the internal coordination system of regular epidemic prevention and control in maternal and child health care institutions, it is necessary to strengthen the top-level design. Based on the content and requirements of each independent internal coordination system, it is necessary to take practical problems as the guidance and start from the three aspects of policy orientation, establishment process and continuous optimization, so as to establish a benign interactive relationship among the systems in the institutions and constantly adjust and optimize the internal collaborative governance capacity. This is not only the inherent requirement of the coordinated system of normal epidemic prevention and control in maternal and child health care institutions, but also an important theoretical basis for promoting the coordinated internal management of normal epidemic prevention and control in maternal and child health care institutions.

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