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The collaborative mechanism of multiple subjects participating in community epidemic prevention and control

El mecanismo de colaboración de múltiples sujetos participantes en la prevención y control de las epidemias en la comunidad

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With the acceleration of the process of globalization, the speed and scope of the spread of infectious diseases have expanded significantly. The community, as the front line of epidemic prevention and control, is under tremendous pressure.[1] The occurrence of the COVID-19 pandemic has brought severe challenges to the global public health system, making the complexity and arduousness of community prevention and control work obvious. Relying solely on the single subject of community committees has been unable to deal with many problems caused by the spread of the epidemic.[2] In the process of community epidemic response, government departments, medical and health institutions, community organizations, social organizations, property management companies, and individual residents are all linked together. How to coordinate and link the management subject, service subject, and self-management subject has become an important issue to improve the effectiveness of community infectious disease prevention and control.

Through literature-based research, we found that the subjects involved in community infectious disease epidemic response include community medical service institutions, government departments, community and social organizations, and individual residents, etc., who play an important role in infectious disease epidemic prevention and control. Based on in-depth interviews and comprehensive analyses of multiple subjects, we clearly recognize that in the field of grassroots infectious disease prevention and control, the coordinated linkage mechanism among multiple subjects is of crucial importance. These multiple subjects mainly cover three core aspects: management subjects, service subjects, and self-management subjects (Fig. 1).

Among them, management subjects play a leading and coordinating role. They mainly include local governments, which are the formulators and promoters of macro policies and can allocate resources and formulate strategic directions for prevention and control as a whole. Health administrative departments, relying on their professional knowledge and authority in health management, are responsible for formulating and implementing specific infectious disease prevention and control strategies and regulations. Community committee, as important units of grassroots governance, can penetrate deep into the community, organize and coordinate various prevention and control affairs, and convey information both upward and downward. Social groups can fully utilize their flexibility and professionalism to provide powerful supplementary support in aspects such as material donations, volunteer service organization, and publicity and education. These jointly constitute an organic whole of management subjects, laying a solid management foundation for grassroots infectious disease prevention and control.

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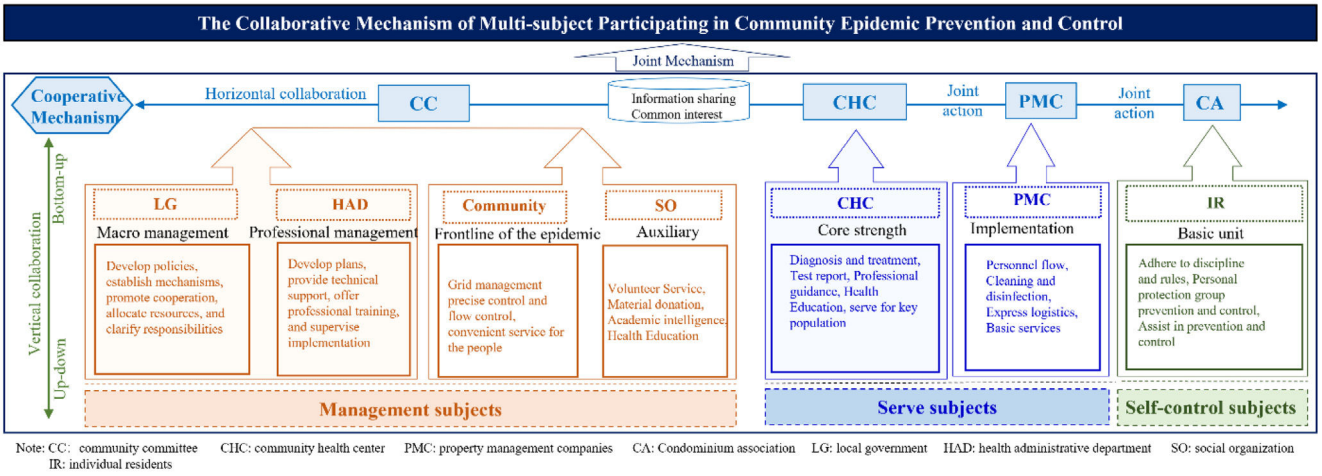

Figure 1 The collaborative mechanism of multiple subjects participating in community epidemic prevention and control.

Service subjects mainly involve community health service centers and property service companies. Community health service centers are the professional strongholds for grassroots infectious disease prevention and control. They have professional medical staff and medical resources and undertake key tasks that are directly related to the prevention and control effect, such as disease monitoring, diagnosis and treatment, vaccination, and health education. Property management companies are responsible for the cleaning of public areas in the community, disinfection, management of the entry and exit of people and vehicles, and so on, creating a safe and hygienic community environment for infectious disease prevention and control. These work closely together to provide all-round prevention and control services for community residents.

The self-management subject focuses on individual residents. As the basic units of the community, residents' improvement of self-protection awareness, practice of healthy lifestyles, and active cooperation with the implementation of various prevention and control measures, such as voluntarily reporting health conditions, cooperating with epidemiological investigations, and complying with home isolation requirements, are the key factors for the effective implementation of community infectious disease prevention and control and an important basis for achieving the goal of mass prevention and control.

To achieve efficient coordination and linkage of these three types of entities, we must not only form a top-down and bottom-up coordination system vertically, but also establish a coordination mechanism for information exchange and resource sharing horizontally. However, it can be seen that there are still problems in the multi-subject participation in community epidemic prevention and control, including poor communication and coordination of the subject, unclear division of subject responsibilities, insufficient resource integration, and lack of long-term incentive mechanisms.[3] These factors also restrict the operation of the multi-subject collaborative linkage mechanism and affect the effect of community epidemic prevention and control. In the future, a community-based multi-subject collaborative linkage mechanism should be built to better a path for community public health governance. To enhance community coordination, it is advisable to focus on the following areas: First, establish a regular communication platform. Utilize information technology to create an online communication platform that includes all management entities, service providers, and resident representatives. For instance, develop dedicated mobile applications with sections for information release, problem feedback, and online meetings. This will enable real-time communication among all parties about epidemic prevention, resource needs, and work progress, thereby breaking down information barriers and enhancing communication efficiency. Second, clarify the boundaries of the subject's responsibilities. Clearly define the responsibilities of management entities, service providers, and residents in infectious disease prevention and control through comprehensive laws, regulations, and community rules. Draw a detailed work flow chart and mark the responsible entities of each link to avoid gaps in responsibilities or cross-blame phenomenon, so that all subjects clearly know ''when to do, what to do, and how to do it''. Third, strengthen the integration and allocation of resources. Establish a community resource coordination center to be responsible for aggregating and sorting out the human, material and financial resources of each subject. During the epidemic prevention and control period, according to the key areas of prevention and control and task needs, uniformly allocate medical materials, volunteer services, emergency funds, etc., to maximize resource utilization. Additionally, create a resource reserve and sharing system to encourage all subjects to stockpile essential emergency resources regularly and to communicate during emergencies. Fourth, design a long-term incentive system. From both spiritual and material aspects, reward the subjects who perform well in community infectious disease prevention and control. Fifth, carry out joint training exercises. Give full play to the role of community public health committees, carry out training for residents, and provide professional opinions for community epidemic prevention and control; drills simulate epidemic outbreak scenarios, test the ability of all subjects to coordinate response, find problems and timely rectification and optimization, constantly running in the coordination mechanism, and improve the level of actual combat.

Ethical considerations

This study has passed the review of the Medical Ethics Committee of Capital Medical University, and the review batch number is Z2023SY103.

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Conflict of interest

The author and corresponding author declare no competing interests.

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