

## Perspectives

## China's Initiatives and Achievements in Enhancing the Professional Capabilities of CDCs

Hao Chen<sup>1</sup>; Ying Cui<sup>1</sup>; Kaixuan Liu<sup>1</sup>; Chengyu Lai<sup>1</sup>; Yuan Wang<sup>1</sup>; Qingfeng Chen<sup>1</sup>; Zhi Zeng<sup>1</sup>; Yang Mei<sup>2, #</sup>

Capacity building is essential for developing a robust disease control and prevention system (1). Recognizing this, on December 25, 2023, the General Office of China's State Council issued the "Guidelines for Promoting the High-Quality Development of Disease Control and Prevention" (hereinafter referred to as the "Guidelines") (2), emphasizing the need to enhance six key professional capabilities within the disease control and prevention system. These Guidelines provide a foundational framework for the future growth and enhancement of centers for disease control and prevention (CDCs).

### China's Disease Control and Prevention System Capacity has been Enhanced over the Past Two Decades

Since the transformation of health and anti-epidemic stations into CDCs in China around 2001, these institutions have primarily focused on public health technology management and service provision. Between 2003 and 2005, the Chinese government consistently strengthened the disease prevention and control workforce, emphasizing improvements in epidemiological investigation, on-site prevention and control, laboratory testing, and inspection capabilities to enhance the professional capacity building of CDCs (3). In 2008, the Ministry of Health outlined seven core responsibilities for CDCs: disease prevention and control, preparedness for and response to public health emergencies, management of epidemic information and health-related factors, monitoring and intervention of hazardous health factors, laboratory testing and evaluation, health education and promotion, and guidance on technology management and application research (4). Subsequent discussions on CDC capacity building have predominantly focused on these foundational responsibilities (1,5–7). Since 2020, numerous Chinese experts and scholars have offered insights and recommendations on reforming the disease control and prevention system and strengthening CDC capabilities. These

recommendations center around enhancing monitoring and early warning systems, epidemiological investigation and risk assessment, laboratory testing, big data analysis, and scientific research in response to public health emergencies (8–10). Several provincial governments in China have been actively refining the disease control and prevention system, implementing policies to reinforce core disease control capabilities, and accumulating valuable practical experience.

### The Guidelines Comprehensively Delineate the Essential Capacities of Disease Control and Prevention Systems in the Modern Era

Through comprehensive policy reviews, in-depth investigations, and extensive consultations, the Chinese government has identified essential capabilities and strategies for strengthening its disease control and prevention system. These are outlined in the "Guidelines," which prioritize core disease control functions, including monitoring and early warning systems, testing and detection, emergency response, medical treatment, public health interventions, administrative law enforcement, and public education. These measures aim to enhance preparedness, prevention, and ensure more effective and coordinated intervention and response efforts.

Firstly, enhance monitoring, early warning, and testing capacities. Monitoring and early warning systems serve as the first line of defense against major infectious disease threats, while testing is a crucial function of CDCs. The guidelines emphasize strengthening monitoring and early warning systems by refining mechanisms, expanding monitoring channels, and standardizing assessment procedures. Furthermore, the guidelines advocate for establishing a robust network of public health laboratories and accelerating the standardization of CDC laboratory construction and management.

Secondly, enhancing emergency response capabilities is crucial for effective infectious disease control and

prevention. The “Guidelines” emphasize China’s commitment to developing a sophisticated multi-point trigger monitoring and early warning system. Key areas of focus include refining emergency plans, expanding emergency response teams, enhancing emergency drills, and ensuring sufficient emergency stockpiles. These measures are designed to continuously improve the nation’s capacity to prevent, control, and respond to major epidemics.

Thirdly, enhancing surge capacity for infectious disease response is crucial. Effective treatment is crucial for outbreak response. In recent years, the Chinese government has actively promoted the development of surge capacity for major epidemics and strengthened the “flat-to-sharp switching mechanism” for medical treatment capacity. Moving forward, the “Guidelines” emphasize improving disease prevention and treatment at primary healthcare institutions and establishing national centers for the prevention, control, and treatment of major infectious diseases. These centers will leverage the upgraded capacity of high-level medical institutions.

Fourthly, enhancing public health intervention capacity is crucial. The reformed disease control and prevention system should consider evolving health determinants in the modern era, establishing the system as a cornerstone of the “health-centered” approach (11). Therefore, continuous strengthening of key infectious disease prevention and control, consolidation of efforts against major parasitic and endemic diseases, optimization of vaccine performance and immunization coverage, and improvement of health-influencing factor monitoring and comprehensive intervention are essential.

Fifthly, the “Guidelines” recommend enhancing administrative and law enforcement capacity. They propose re-establishing CDCs at the municipal and county levels by integrating them with local institutes of health supervision, thereby returning supervision and law enforcement functions to the CDCs. However, the “Guidelines” do not address reforms for national and provincial institutes of health supervision. Notably, the functions of the national Health Supervision Center have already been integrated into the newly established National Disease Control and Prevention Center. While disease control and prevention focus on implementation, supervision and law enforcement address oversight and enforcement. The “Guidelines” emphasize the need to improve the comprehensive supervision and law enforcement system by clearly defining powers and responsibilities,

standardizing procedures, and ensuring robust implementation. Additionally, they call for enhancing the licensing and qualification management system for health administrative and law enforcement personnel and advocate for increased resource allocation for health administrative law enforcement and standardized development.

Sixthly, enhancing public health outreach and education is crucial. Promoting health knowledge and awareness is a fundamental prerequisite for improving public health literacy and advancing the Healthy China initiative. The guidelines emphasize the need to widely disseminate disease control policies and scientific knowledge by establishing an integrated working mechanism that combines news releases on disease control, public opinion guidance, health dissemination, and social mobilization to create a comprehensive, multidimensional, and interactive communication framework.

## DISCUSSION

Since 2020, strengthening the professional capacity of disease control and prevention systems has been a key priority for numerous countries and international organizations (12–14). The issuance of the Chinese government’s “Guidelines” represents a significant step towards comprehensively enhancing the professional capacity of CDCs, bolstering the public health system, and advancing the overarching goal of Healthy China. Notably, this is the first national-level document to systematically outline the professional capacity requirements of CDCs. Addressing deficiencies exposed by the COVID-19 pandemic, such as inadequate early warning systems for emerging infectious diseases and gaps in epidemiological investigation and laboratory testing capacity, the “Guidelines” prioritize infectious disease prevention, control, and emergency response as the core functions of disease control institutions at all levels (15). Furthermore, the document defines key areas requiring strengthening. In accordance with the “Guidelines,” the China CDC has outlined eight core capabilities for national-level disease control institutions to develop (16). The implementation of these guidelines is expected to drive continuous improvement across all levels of China’s CDCs, particularly in their capacity to respond to emerging infectious diseases. Consequently, China’s disease control and prevention system is poised to become more resilient and better equipped to support the goals of Healthy China and contribute to

socio-economic development.

**Conflicts of interest:** No conflicts of interest.

doi: 10.46234/ccdcw2024.203

# Corresponding author: Yang Mei, meiyang@chinacdc.cn.

<sup>1</sup> Office of Policy and Planning Research, Chinese Center for Disease Control and Prevention, Beijing, China; <sup>2</sup> Chinese Center for Disease Control and Prevention, Beijing, China.

Submitted: March 18, 2024; Accepted: August 01, 2024

## REFERENCES

- Chen Zhu requests strengthening capacity building for disease prevention and control. *Hosp Manage Forum* 2007;24(12):5. [https://kns.cnki.net/kcms2/article/abstract?v=GqSshYi5sNe8YmOs-RvO5QkPK-Hky\\_qmp48yY30j2JbtQsDt1\\_E9PAouiiGg1zrP1ipTjAqInUvWa7Wb7CZjQ\\_hSKhtHgUE5dlSueQKiKdXyiZZ7xZkgIVvRslOPYGO9i7RvrBS1HG1ZgUCqQZbK241ddaoE\\_xMJZcLJU0DxSp9q-GXs7F1JK3aRFRvF37l&uniplatform=NZKPT&language=CHS](https://kns.cnki.net/kcms2/article/abstract?v=GqSshYi5sNe8YmOs-RvO5QkPK-Hky_qmp48yY30j2JbtQsDt1_E9PAouiiGg1zrP1ipTjAqInUvWa7Wb7CZjQ_hSKhtHgUE5dlSueQKiKdXyiZZ7xZkgIVvRslOPYGO9i7RvrBS1HG1ZgUCqQZbK241ddaoE_xMJZcLJU0DxSp9q-GXs7F1JK3aRFRvF37l&uniplatform=NZKPT&language=CHS). (In Chinese).
- General Office of the State Council. Guidelines for high-quality development of disease prevention and control. 2023. [https://www.gov.cn/zhengce/content/202312/content\\_6922483.htm](https://www.gov.cn/zhengce/content/202312/content_6922483.htm). [2024-1-16]. (In Chinese).
- Wang GQ. A 60-year history of disease prevention and control in China. Beijing: China Population Publishing House. 2015. <https://book.kongfz.com/9289/5678578497/>. (In Chinese)
- National Health Commission of the People's Republic of China. Basic duties of disease prevention and control centers at all levels. *health, disease control and prevention* [2008] No.68. 2008. <http://www.nhc.gov.cn/cms-search/xxgk/getManuscriptXxgk.htm?id=38527>. (In Chinese).
- Wang Q, Xu J, Hao YW, Tian T, Zhu ZL, Zhang XQ, et al. Assessment on the diagnostic capacity for parasitic diseases of health facilities — China, 2019. *China CDC Wkly* 2021;3(35):731 – 5. <https://doi.org/10.46234/ccdcw2021.181>.
- Wang N, Li T, Du X, Li Y, Sun MM, Huan ST, et al. Effectiveness of the integrated TB surveillance system — China, 2018–2019. *China CDC Wkly* 2020;2(12):190 – 3. <https://doi.org/10.46234/ccdcw2020.050>.
- Wu J. Leveraging CDC's advantages in enhancing cancer prevention and control. *China CDC Wkly* 2020;2(16):265 – 7. <https://doi.org/10.46234/ccdcw2020.068>.
- Liu CH, Yue YT, Wang YK. Exploration and thoughts on the capacity construction of provincial disease control and prevention institutions in the new era: a case study in Henan Center for Disease Control and Prevention. *Mod Dis Control Prev* 2023;34(6):448 – 51. <https://doi.org/10.13515/j.cnki.hnjpm.1006-8414.2023.06.011>.
- Mao AY, Yang YJ, Du S, Zhao MJ, Meng YL, Qiu WQ, et al. Professional personnel allocation and capacity building requirement in disease prevention and control institutions in Beijing during COVID-19 epidemic: a cross-sectional survey. *Chin J Public Health* 2022;38(6):719 – 23. <https://doi.org/10.11847/zgggws1136648>.
- Liu X, Wang L, Chen YF, Liang XF. Reflections on the reform of Chinese disease prevention and control system. *Chin J PHM* 2020;36(2):145 – 8. <https://doi.org/10.19568/j.cnki.23-1318.2020.02.001>.
- Li XH. Reshaping the disease prevention and control system with a holistic view of reform. *People's Forum* 2020(24):70-1. <https://kns.cnki.net/KCMS/detail/detail.aspx?dbcode=CJFD&filename=RMLT202024021>. (In Chinese).
- The CSIS commission on strengthening America's health security. CSIS. <https://healthsecurity.csis.org/>.
- Building the CDC the country needs. CSIS.
- WHO. WHO, Germany launch new global hub for pandemic and epidemic intelligence. 2021. <https://www.who.int/news/item/05-05-2021-who-germany-launch-new-global-hub-for-pandemic-and-epidemic-intelligence>.
- Shen HB. Rethinking of institutional reform and development of disease control and prevention system in post COVID-19 epidemic era in China. *Chin J Epidemiol* 2022;43(1):1 – 4. <https://doi.org/10.3760/cma.j.cn112338-20211218-00997>.
- Shen HB. Comprehensive strategic planning and enhancement of China CDC contributes to high-quality development of the national disease control and prevention system. *China CDC Wkly* 2024;6(4):61 – 3. <https://doi.org/10.46234/ccdcw2024.013>.