Foreword

Prioritizing the People in HIV Prevention: Transforming Data into Effective Policies and Actions

Fan Lyu[1,2,#]

In the contemporary landscape of global health challenges, human immunodeficiency virus (HIV) and acquired immunodeficiency syndrome (AIDS) remain significant public health concerns both domestically and internationally. Recent UNAIDS estimates indicate that by the end of 2023, approximately 39.9 million people were living with HIV/AIDS globally, with 1.3 million new infections and 630,000 deaths (*1*). While current prevention and treatment strategies have contributed to a steady decline in new infections and mortality rates, we remain considerably distant from achieving the ambitious target of "ending the AIDS epidemic by 2030".

The interconnected nature of our globalized world necessitates collaborative approaches to infectious disease prevention. Since the initial diagnosis of HIV in a foreign traveler in China in 1985, the nation has witnessed nearly four decades of epidemic evolution. Currently, China's HIV-positive population exceeds 1.3 million, with annual new diagnoses consistently surpassing 100,000 (*2*). The epidemic's trajectory has shifted dramatically, from primarily affecting injecting drug users to commercial plasma donors, and subsequently to predominantly sexual transmission routes. The geographic distribution has expanded from its initial concentration in southwestern regions to encompass the majority of cities and counties nationwide (*3*). Concurrently, the viral landscape has evolved from predominant subtype B to recombinant strains, including CRF07_BC, CRF01_AE, and CRF08_BC (*4*).

Comprehensive epidemiological understanding serves as the cornerstone of effective infectious disease control. To this end, China has implemented a sophisticated epidemiological and molecular surveillance system (*5*) that has monitored HIV prevalence and evolution over four decades. This surveillance has informed the development of targeted interventions, including methadone maintenance therapy, needle exchange programs, Blood Donation Law implementation, expanded testing initiatives, and universal treatment protocols (*6*). These people-centered policies have yielded substantial results, effectively eliminating blood-borne transmission and significantly reducing both injecting drug use and mother-to-child transmission (*7*). However, the dynamic nature of the epidemic, coupled with evolving social conditions and technological capabilities, necessitates continuous policy innovation and optimization to maintain effectiveness.

China's AIDS prevention and control program currently aligns with UNAIDS's "six 95%" targets, positioning the nation to make significant contributions toward global AIDS elimination (*8*). However, several critical questions demand urgent attention: How has the epidemic pattern evolved? Given the predominant sexual transmission route among the general population, do traditional intervention strategies maintain their efficacy? Has the survival rate of HIV-infected individuals in China improved significantly under current antiviral treatment protocols? What are the evolutionary trajectories and distribution patterns of HIV strains across China? Addressing these questions is crucial for evidence-based policy formulation.

This special issue addresses these pressing questions by providing a comprehensive analysis of HIV epidemiology in China. Our findings reveal the emerging significance of non-marital and non-commercial heterosexual transmission in facilitating HIV spread within the general population. Following the expansion of eligibility criteria for free antiretroviral treatment (ART), we observed a marked improvement in survival rates among HIV-infected individuals. Furthermore, our analysis highlights an increasing prevalence of recombinant viral strains. These insights provide crucial evidence for developing targeted and scientifically grounded prevention and control policies in China.

Moving forward, it is imperative to implement integrated, multidisciplinary research approaches that combine classical epidemiological theories with advanced intelligent technologies. This integration will enable a more nuanced and comprehensive understanding of HIV epidemic patterns while facilitating a multidimensional evaluation of AIDS prevention and control strategies. Such evidence-based approaches will strengthen policy-

making processes, advancing China's AIDS prevention and control efforts to new heights while contributing substantially to global AIDS elimination and protecting population health and well-being.

doi: 10.46234/ccdcw2024.250

[#] Corresponding author: Fan Lyu, fanlv@chinaaids.cn.

[1] National Center for AIDS/STD Control and Prevention, Chinese Center for Disease Control and Prevention, Beijing, China; [2] National Key Laboratory of Intelligent Tracking and Forecasting for Infectious Diseases, National Center for AIDS/STD Control and Prevention, Chinese Center for Disease Control and Prevention, Beijing, China.

Submitted: November 19, 2024; Accepted: November 22, 2024

REFERENCES

1. UNAIDS. The path that ends AIDS: UNAIDS Global AIDS Update 2023. Geneva: Joint United Nations Programme on HIV/AIDS. 2023. https://www.unaids.org/sites/default/files/media_asset/2023-unaids-global-aids-update_en.pdf.
2. The Chinese Center for Disease Control and Prevention Sexually Transmitted Disease of AIDS Prevention and Control Center. The AIDS and STD epidemic in the second quarter of 2024 in China. Chin J AIDS STD 2024;30(9):893. http://dx.doi.org/10.13419/j.cnki.aids.2024.09.01. (In Chinese).
3. Wu ZY, Chen JF, Scott SR, McGoogan JM. History of the HIV epidemic in China. Curr HIV/AIDS Rep 2019;16(6):458 – 66. https://doi.org/10.1007/s11904-019-00471-4.
4. He X, Xing H, Ruan YH, Hong KX, Cheng CL, Hu YY, et al. A comprehensive mapping of HIV-1 genotypes in various risk groups and regions across China based on a nationwide molecular epidemiologic survey. PLoS One 2012;7(10):e47289. https://doi.org/10.1371/journal.pone.0047289.
5. Tang HL, Li DM, Qin QQ, Chen FF, Ge L, Cai Y, et al. Inheritance and development: promote the high-quality development of AIDS monitoring in China based on evidence. Chin J AIDS STD 2023;29(7):733-6. http://dx.doi.org/10.13419/j.cnki.aids.2023.07.01. (In Chinese).
6. Lyu F, Xu P. Theory and practice of evidence-based policy research on AIDS prevention and control. Beijing: People's Medical Publishing House. 2022. (In Chinese).
7. Han MJ. Analysis of HIV epidemic and prospects for prevention and control in China. Chin J AIDS STD 2023;29(3):247-50. http://dx.doi.org/10.13419/j.cnki.aids.2023.03.01. (In Chinese).
8. Lyu F, Liu ZF, Liu YF, Han MJ, Yan J. Anchor the goal, enhance capabilities, and promote the high-quality development of AIDS prevention and control. Chin J AIDS STD 2024;30(4):335-8. http://dx.doi.org/10.13419/j.cnki.aids.2024.04.01. (In Chinese).

Fan Lyu, MD, PhD
Acting Director of National Center for AIDS/STD Control and Prevention
PI of National Key Laboratory of Intelligent Tracking and Forecasting for Infectious Diseases, National Center for AIDS/STD Control and Prevention, Beijing, China.