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EDITORIAL

China AIDS policy implementation: reversing the HIV/AIDS epidemic by 2015

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In the past decade, tremendous efforts have been made and impressive achievements have been obtained in accelerating universal access for HIV prevention, treatment and care and support worldwide. For example, between 2003 and 2008, the number of people receiving antiretroviral therapy (ART) increased 10-fold—from 400 000 to 4 000 000—corresponding to 42% of 8.8 million people who needed treatment for HIV.[1,2] Overall, the availability and coverage of HIV prevention, treatment and care continued to expand in low- and middle-income countries. In low- and middle-income countries in 2008, ART for adults and children averaged 42% (40–47%) and the percentage of pregnant women living with HIV receiving ART drugs to prevent mother-to-child transmission averaged 45% (37–57%).[2] Yet, these achievements have not stopped the epidemic, with approximately 2.3 million persons being infected annually,[3] outpacing the annual increase in the number of people receiving treatment.[2] Progress on achieving HIV goals has been uneven across and within countries.[1] Many gaps and challenges still remain.

China is among the countries that have committed to achieve the Millennium Development Goals by 2015. Remarkable progress has been made in promoting HIV prevention, treatment care and support in China in recent years.[4] In particular, China is one of only a few low- and middle-income countries in which domestic funds account for the major proportion of their HIV/AIDS program funding.[5] This supplement of the *International Journal of Epidemiology*, entitled 'China's AIDS Policy Implementation', has assembled 11 papers describing various of aspects of China's response to the HIV/AIDS epidemic.

Policies for stigmatized infectious diseases, such as AIDS, are politically sensitive. Early in the HIV epidemic, China initiated many projects to respond to the HIV/AIDS epidemic, but an effective national HIV/AIDS policy was not developed. The outbreak of severe acute respiratory syndromes (SARS) in Beijing in 2003[6] triggered rapid mobilization of public health policies for a broad range of health challenges. China initially responded slowly to SARS, and the consequences of slow action motivated subsequent rapid implementation of HIV national policies. China recognized the potential consequences of a generalized epidemic on the economic well-being, quality of life and mortality that HIV may cause. China's public health sector committed to anticipate issues and to develop and implement effective HIV policies before health problems became out of control. China soon launched its first 5-year action plan, which had a significant impact: 'Four Frees and One Care' policy (See Sun *et al.*[7]). This policy provided access to free HIV testing, ART and prevention of HIV mother-to-child transmission.

Globally, successful control of the epidemic of HIV/AIDS requires strong international collaborations. International projects on HIV have greatly contributed in facilitating China's national AIDS response.[8] Over 20 years, China has participated in 267 collaborative international projects to stop the HIV/AIDS epidemic, receiving ~USD$526 million from over 40 international organizations. Initially, these were stand-alone projects providing technical support for surveillance, training, advocacy for public awareness, and to support effective, but politically sensitive, pilot projects. These projects are now fully integrated into the overall national AIDS responses. Beyond providing critical financial support, these international projects created the opportunity to introduce the best practices in use globally into China, accelerating the formulation of AIDS policies, strengthening providers' capacity, improving the development of grass-roots social organizations and establishing a platform for communication and experience sharing with the

international community.[8,9] The international contributions decreased over time, as the importance of sustainable government support became apparent, so that today international financial support reflects only one-third of the total monetary resources for the China's AIDS program.

With this international support, civil societies (non-government organizations) have been initiated and grown strong and active over the past 20 years. Organizations for civil societies were non-existent 20 years ago, but now organizations have changed from being mere spectators to being active implementers of social change.[9] These civil society organizations have played a significant role in providing specialized prevention and treatment services to marginalized groups, such as men who have sex with men and people infected and affected by HIV/AIDS.[9] However, the capacity of civil society to play a more important role within the national plan, to establish a vibrant communication network, to learn from each other and interact with the government sector needs to be improved in order to function as effective implementers of HIV policies within communities.

Prevention of new HIV infections has always been the top priority in the overall response to HIV/AIDS. Fortunately, China's AIDS epidemic, in general, still remains limited to at-risk groups, associated with injecting drug use, sex work and male-to-male sexual contact. The HIV epidemic was initially driven by injecting drug use. In response, China has developed and rapidly expanded its national methadone maintenance treatment program (see Yin *et al.*[10]). Recognition of this achievement has been received from both international and domestic communities (United Nations Program on HIV/AIDS, 2008). However, many challenges remain. As Yin and colleagues outline in this issue, China's methadone treatment program can be improved by: (i) expanding the coverage of methadone maintenance treatment and the number of its beneficiaries; (ii) increasing accessibility of services; (iii) improving the quality of services offered, increasing the range of services offered at clinics and introducing referral systems between related services; (iv) implementing on-going staff training to improve the quality of their services, increase their understanding of drug addiction and enhance their professionalism; and (v) mobilizing multi-sector cooperation, especially at local levels, to ensure that clients can enjoy uninterrupted treatment.[10]

Globally, sexual contact is the major mode of HIV transmission and has now become a major mode of HIV spread in China. In 2009, China estimated that among 48 000 new HIV infections, 75% were caused by sexual contact. Rou *et al.*[11] describe in detail how China has responded to the threat of increasing sexual transmission of HIV. These efforts may partially explain why China's HIV prevalence has remained low among sex workers and the general public. However, China's national policy implementers have identified new strategic directions to continue to ensure that HIV remains low among sex workers and that sexual transmission of HIV does not increase further.

China expanded its antiretroviral (ARV) treatment program very rapidly. The national free ART program started in 2002.[12] By the end of 2009, over 80 000 patients had received ARV treatment.[13] Dou *et al.*[14] describe baseline characteristics of patients enrolled in ART program between 2002 and 2009. Marginalized groups were receiving less ART, such as injecting drug users, who account for 32.2% of people living with HIV/AIDS[15] but only 15.5% of patients in the ART program.[14] Without equally treating the marginalized groups, the millennium development goal will be hard to achieve.

China's Comprehensive AIDS Response Program (China CARES),[16] described by Han *et al.* in this issue, is the single largest AIDS project, covering 83.3 million people in 127 program sites in 28 provinces. This demonstrates that scaling-up HIV prevention, treatment and care activities in rural China is possible and effective. The number of people being tested for HIV in project sites increased by 67%, and the number of patients enrolled into the free ART program increased by 23 000 between 2005 and 2007. Ninety-three per cent of HIV-infected pregnant women and 85.5% of their newborns received ART prophylaxis. China CARES has provided a good model for promoting universal access to HIV prevention, treatment care and support.

Laboratories are an essential infrastructure for HIV testing and monitoring CD4 level and viral load. An HIV laboratory network system has been established and improved in China, which is comprised of 8273 local screening laboratories, 254 confirmatory laboratories, 35 provincial confirmatory central laboratories and 1 National AIDS Reference Laboratory.[17] Between 2002 and 2009, more than 220 million specimens were tested for HIV antibody at screening laboratories in the network. This laboratory network can perform laboratory tests from simple antibody tests to sophisticated CD4 cell enumeration, viral load, early infant diagnosis, drug resistance genotyping, HIV-1 subtyping and incidence assays. Thus, the system provides a basis for monitoring the epidemic and improving treatment of patients. China has established an HIV laboratory quality assurance system. However, the coverage and quality assurance programs still need to be further strengthened, particularly at the local level.

Monitoring and evaluation (M&E) activities include activities that describe the HIV epidemic and associated health challenges (hepatitis C virus, human papilloma virus and sexually transmitted infections); documenting implementation practices; and evaluating the impact of national programs. M&E activities are key to providing feedback, which allows continuous quality improvement. China has made remarkable progress in improving the quality and reach of its data sources. Greater transparency has been a stated goal

of China's current M&E activities (see Wang *et al.*[18]). The participation of the international community in developing better estimates of HIV/AIDS occurrence has had a substantial impact on improving data quality. China is among a few countries that have made tremendous efforts in achieving accurate estimates over the past 6 years on the scope, sites and extensiveness of its epidemic. As described by Wang *et al.*,[18] China's public health leaders from each province reviewed its national HIV/AIDS estimates collectively in 2003, 2005, 2007 and 2009. These reviews served both to build capacity at the provincial level and to generate data that more accurately reflect China's heterogeneous epidemic. These improvements in data quality and data availability have improved the precision of HIV/AIDS estimates, providing information that is critical to setting public health goals and evidence-based policies.

China's new unified, web-based HIV/AIDS information system is unique globally.[19] It was implemented within a 9-month period in 2004, with consistent quality improvement since that time. Few countries have data systems that combine HIV testing, prevention, treatment and care information on the same platform. China uses a web portal to monitor HIV cases in real-time nationally, including data from all provinces. The information system has improved the efficiency of data collection, reporting, analysis and use, as well as data quality and security. This system facilitates integration of all international or domestic AIDS projects into one national AIDS program. It is also a powerful tool to support policy makers by allowing China to monitor changes over time and to quickly identify new disease outbreaks, as well as implementing the national HIV/AIDS program and program evaluation (see Mao *et al.*[19]).

The national AIDS program has been facilitated by setting annual goals for core indicators and holding local implementers accountable to monitor AIDS policy implementation.[20] This process continues today, as China is now setting the 2015 program goals. Commitment to controlling HIV/AIDS epidemic at the highest policy levels is an important first step for prevention and care, but even more important is implementation, as well as monitoring of implementation to assure that the commitment has been translated into action. Policies to stop HIV have made substantial progress in the areas of expanding access to methadone maintenance (from 8 to 690 sites in 5 years). To achieve the millennium development goals, China must work even harder and more vigorously.

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