



China and HIV — A Window of Opportunity

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Last December in Wuhan, China, two middle-aged rural women who had become infected with HIV in the 1990s struggled to describe to foreign visitors how China's new HIV-treatment

program had changed their lives. Suddenly, one woman's 12-year-old daughter spoke up. Her mother, she said, had been too sick to get out of bed, and the girl had left school to help at home and on the farm. But when the woman began taking antiretroviral drugs, she improved quickly, returned to work in the fields, and sent her daughter back to the classroom.

Such stories are increasingly common in China, reflecting a striking shift in the government's approach to HIV. Although China's first AIDS cases were discovered in 1989, the government did not publicly acknowledge the existence of a major epidemic until 2001. Two years later, as international attention mounted after the out-

break of severe acute respiratory syndrome (SARS), the government abruptly changed course, launching aggressive measures against AIDS. An interagency committee was created to coordinate a government-wide response, and a national AIDS treatment program was established. The national budget for HIV-AIDS grew from approximately \$12.5 million in 2002 to about \$100 million in 2005 and about \$185 million in 2006.¹ In January 2006, the Chinese Cabinet issued regulations for HIV-AIDS prevention and control, outlining the responsibilities of the central and local governments and stipulating the rights and responsibilities of infected persons. The law requires county-level jurisdic-

tions to provide free antiretroviral drugs to poor citizens who need treatment and free consultations and treatment to prevent mother-to-child transmission. Infected persons must take steps to avoid knowingly spreading HIV, but the statute forbids discrimination against them in employment, education, marriage, and health care.

The government also announced a 5-year plan that sets ambitious targets for educating the public about HIV, reducing stigma, training health care workers and technicians, ramping up treatment, improving surveillance, and delivering counseling and interventions to at-risk populations. The government estimates that 650,000 Chinese people are infected with HIV and hopes to limit the total to 1.5 million by 2010.

"There's really been a sea change" in China's response, said Peter Piot, executive director of the Joint United Nations Program



Needle-Exchange Kits Ready for Distribution to Heroin Users in Sichuan Province.

on HIV/AIDS (UNAIDS). “The central leadership and policies are nearly as good as they can be.”

Chinese and international health officials express optimism about controlling the epidemic but emphasize the need to move quickly. The current estimate represents an HIV prevalence of approximately 0.05% of the general population, but by the end of October 2006, only 183,733 infected persons had been identified, according to the Ministry of Health. Although HIV has been reported in all 31 Chinese provinces, about three quarters of infected persons are believed to reside in 5 provinces: Guangdong, Guangxi, Henan, Xinjiang, and Yunnan.² Henan, along with several neighboring provinces in central China, was the site of a 1990s HIV outbreak among rural residents who became infected through contaminated equipment at commercial plasma-donation centers. The other four are border provinces, crisscrossed by heroin-trafficking routes, where HIV transmission is fueled by injection-drug use. The epidemic is “quite young,” said Ray Yip, director of the Chinese

office of the U.S. Centers for Disease Control and Prevention (CDC). “It’s still concentrated very highly among the highest-risk group of people. It hasn’t really gotten out of hand even among the sex-worker population.”

But the situation could worsen rapidly. Among new HIV infections in China, 48.6% are caused by drug use, 49.8% by sexual transmission, and 1.6% by mother-to-child transmission, according to Connie Osborne, senior adviser to the World Health Organization (WHO) on HIV–AIDS care and treatment in Beijing. The country is undergoing rapid economic and social change, including migration from rural areas to cities and increases in prostitution and illegal drug use. “It’s a free-for-all kind of place,” said Yip. “If you don’t control the epidemic in the next 5 years . . . the sheer increasing numbers of people who engage in high-risk behavior can fuel the fire.” Given China’s enormous population, even a small increase in prevalence could be devastating. “If it went up to 4%, we would have 52 million infected, more than

the total global figure today,” said Wu Zunyou, director of China’s National Center for AIDS/STD Control and Prevention (NCAIDS).

China’s determination to confront its epidemic has attracted major funding. As of late 2005, international assistance programs for HIV–AIDS had been implemented in 27 provinces, with contributions of approximately \$229 million.³ China has received approximately \$134 million for HIV programs from the Global Fund to Fight AIDS, Tuberculosis, and Malaria, which will provide more than \$14 million over the next 5 years to strengthen civil society organizations that can reach high-risk populations.⁴ China also receives aid for HIV–AIDS control from numerous other international partners.

In Beijing, it is common to hear health officials declare that controlling HIV–AIDS is now simply a technical matter of implementing existing policies. Although the Chinese government has indeed made some tough choices — for example, supporting needle-exchange programs and setting up methadone-maintenance therapy sites for injection-drug users — other critical problems must still be addressed.

First, those who are HIV-positive or in high-risk groups still bear a stigma and experience discrimination, both of which are major obstacles to care. Health care workers have been known to refuse to treat persons suspected of having HIV. People from “HIV villages,” such as those in Henan, where many plasma donors became infected, cannot find jobs, and agricultural produce from these locales cannot find markets.

Far greater stigma is attached to persons who contract HIV



Announcement in a Sichuan Village, Reading “Extend a Caring Hand to AIDS Patients” — Part of a Government Effort to Reduce the Stigma of AIDS.

to stem the epidemic: “It signals that they understand the critical link between drug use and control of HIV–AIDS. It’s a permission to engage the most marginalized people.”

Currently, however, most sites do not offer more comprehensive services, such as needle and syringe exchange, peer counseling, testing, or employment counseling. In addition, the efforts of local authorities to set up such clinics are often met with resistance, ranging from complaints that the clinics attract “the wrong elements” to questions about why drug addicts should receive free or subsidized medical care when the average citizen does not. Although China has also implemented needle-exchange programs, Wu said that because these programs do not reduce injection-drug use, they will “only be used in places where methadone maintenance is not available.”

Men who have sex with men are another at-risk population that until recently received little attention. There are strong taboos against homosexual behavior in

China, where men are under enormous pressure to marry and produce male heirs. Estimates of the population of men who have sex with men range from 5 million to 10 million, and the number may well increase as social mores continue to change. Chinese health officials estimate that nationwide about 1% of men who have sex with men are HIV-positive.⁵ They have established an advisory group including activists and behavioral specialists to formulate policies designed to reach this marginalized population, but China still has a long way to go in allowing nongovernmental and civil society organizations to contribute to the fight against HIV–AIDS.

China also faces the daunting task of locating the half-million or more people believed to be infected with HIV infection without knowing it. A massive testing program undertaken from 2004 through 2005 focused on identifying plasma donors infected during the 1990s outbreak and on conducting testing in drug-detoxification detention centers and prisons. This effort is the single

largest factor in the recent dramatic increase in reported HIV–AIDS cases.

Still, an estimated 70% of infected persons remain unidentified. Outside the prison and drug-detoxification systems, HIV testing is voluntary. Mandatory premarital testing for sexually transmitted diseases was eliminated in October 2003, although some localities may reinstate it. Because of stigma, distrust regarding confidentiality, and the absence of effective counseling and referrals, most people are reluctant to be tested. Moreover, although screening tests are available free, patients usually must pay for confirmatory tests that cost \$25 to \$40 — nearly a month’s salary in parts of China. Reliance on confirmatory testing also increases loss to follow-up: many people never receive their results, according to Osborne, who says the WHO is promoting rapid testing.

China’s epidemic, unlike that in most countries, is concentrated in rural areas, where poor residents have little access to health care. The hard work of stemming the epidemic will fall to county-level jurisdictions. With more than 3000 counties in China, the task of ensuring an effective and relatively standard response will be an enormous one. The implementation of the central government’s mandates will vary widely, depending on local resources and priorities. HIV has hit hardest in the poorest, most remote areas that are hard-pressed to provide the money, training, and personnel needed. “With the introduction of the market economy, there has been a collapse of public health services and other services for the poor . . . particularly in rural areas,” said Piot of UNAIDS.



Heroin Users in a Group Cell at a Drug Detention Center in Sichuan Province.

Such centers lack rehabilitation programs and provide only minimal health care.

“Getting treatment to people is therefore not so easy, even if the will is there.”

Since 2003, China has rapidly expanded the availability of first-line antiretroviral treatment. By the end of 2006, approximately 24,400 people were receiving therapy, up from about 20,450 in 2005, and the number is expected to reach 30,000 to 35,000 this year. But further increases are likely to be slower, since reaching marginalized groups will be more difficult than enrolling people infected through plasma donation. WHO authorities in Beijing fear that China’s treatment program may not reach its goal of extending free treatment to 80% of those who need it by 2010. With 1 million to 1.5 million expected to be HIV-positive by then, 200,000 or more people may require treatment.

Relying almost entirely on generic drugs produced in China, the country’s first-line therapy regimens — zidovudine, didanosine, and nevirapine or stavudine, didanosine, and nevirapine — have severe side effects, raising concerns about adherence and the emergence of drug resistance.

Laboratory tests to monitor treatment are not paid for by the central government, and the costs are commonly passed along to patients. In early 2005, more effective and less toxic compounds such as efavirenz and lamivudine became available and were introduced into some first-line regimens. Chinese health authorities are negotiating with foreign pharmaceutical firms to purchase second-line drugs, which are not widely available.

In addition, despite some new training programs, most regions lack health care providers with sufficient expertise to properly diagnose and treat AIDS and to monitor patients’ viral loads. With suboptimal treatment, drug-resistant virus will surely emerge, but a national drug-resistance surveillance system does not yet exist. The rate of resistance to first-line treatment was 18% in one small Chinese study but 45 to 80% in separate cohorts in another study.

International health experts remain cautiously hopeful about China’s chances of controlling its epidemic. Success, however, will depend on how well the government handles challenges such as

overcoming stigma, mounting aggressive outreach efforts for high-risk groups, and mobilizing funding, expertise, and commitment throughout the vast and diverse country to identify, counsel, and care for the people who are infected. Although a political corner has been turned in Beijing, there is still an enormous amount of work to be done on the ground.

“When you have a country where the prevalence of HIV is less than 1 per 1000 and the government has started to respond seriously, that’s good news,” noted Yip of the CDC, but China must now implement strategies aimed at the hardest-hit populations. “A good policy,” he warns, “doesn’t always translate into a sound program.”

Dr. Gill reports receiving consulting fees from Merck and Abbott Laboratories and grant support from Merck and the Gates Foundation.

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CORRECTION

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China and HIV — A Window of Opportunity. In the fourth paragraph from the end of the Perspective (page 1805), the first sentence should have read “Relying almost entirely on generic drugs produced in China, the country’s first-line therapy regimens — zidovudine, didanosine, and nevirapine or stavudine, didanosine, and nevirapine — have severe side effects, raising concerns about adherence and the emergence of drug resistance,” rather than “zidovudine, didanosine, and nevirapine or zidovudine, stavudine, and nevirapine.” The text has been corrected on the *Journal’s* Web site at www.nejm.org.