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*We said, listen, you can't talk about human rights in thin air. Don't HIV- positive people have a right to know their status and get treated? Don't they have a right to prevent transmission to their spouses? Don't the uninfected have the right to not be infected?*

(Zunyou Wu, NCAIDS/China CDC)

One of the people who heard Vice Premier Wu Yi's plea for greater openness in the aftermath of the SARS epidemic was Li Keqiang, now China's Premier but at the time the Party Secretary of Henan province. As we saw in Chap. 2, national specialists such as Xiwen Zheng estimated the number of HIV-infected plasma sellers in Henan at around 80,000, and activists were claiming ten times as many. However, provincial officials stuck stubbornly to an estimate of 10,000 infections. Backed by the central government's renewed determination to find out the true extent of the epidemic, Li Keqiang encouraged his staff to do whatever was necessary to get to the truth.

Normally, HIV estimates in countries with epidemics similar to China's are made on the basis of data from sentinel surveillance among high-risk groups. In sentinel surveillance, blood is taken from people at high risk for HIV for some therapeutic purpose (such as for syphilis screening and treatment or assessing patients for drug-related services). The blood is then stripped of personal identifiers

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and tested for the virus that causes AIDS. That gives health authorities an idea of the overall percentage of people in that risk group who are infected. Applying the percentage to the estimated number of people who share the risk behaviour gives the estimated number of people infected. Of course, some people may be infected even though they are not themselves in one of the high-risk groups included in the estimates – the wife of a drug injector, for example, or the husband of a sex worker. Often, information taken from HIV testing among pregnant women is used as a proxy for these secondary infections.

This estimation method is not very well suited, however, to epidemics that were driven by the selling of blood, because most former plasma sellers would not be captured in the sentinel surveillance of high-risk groups. Rather than basing their estimates of the numbers infected on data from sentinel surveillance sites, health officials in Henan and the National Centre for AIDS/STD Control and Prevention took the bold step of trying to find and test all those who might have been put at risk through blood selling. This meant conducting a full door-to-door census and asking every household if anyone in the family had sold blood in the 1990s. Those who said they had indeed sold blood would be offered free HIV testing. Though this would obviously be a huge undertaking, health authorities thought it was the only way to get information good enough to set to rest all the concerns about under-reporting of cases.

More importantly, they realised that if they really were going to deliver on the ambitious commitments made by the country's most senior leaders, and especially on vastly expanding the proportion of people with HIV who would have affordable access to life-prolonging treatment, they would have to have a much better idea of who was infected. Good estimates were needed for planning and monitoring purposes, of course, but to provide people with treatment, health officials needed to know which individuals were infected. Though some voluntary testing services were available in some places, people just weren't using them very much. One study asked participants in a relatively high-prevalence area if they would like to receive more information about HIV, as well as a free HIV test. Vouchers were given to all participants; if they came to the clinic, they could claim a small payment whether or not they got tested. Just short of half said that they would like a test, but only one in six turned up at the clinic to claim their payment, and a tiny 3.7% actually took a free HIV test [1].

Another study that offered confidential HIV testing to couples attending mandatory premarital counselling sessions in Anhui province found that only 16% accepted tests when they were free. When people were charged CNY20 for a test (around US\$2.50 at the time), that already low rate plummeted to just 1.4% [2]. The citizens of China's badly affected central provinces, including Anhui, had seen what happened to people who had tested positive for HIV. They were fired from their jobs, rejected by their families and turned away from health services. Discrimination was, as Chap. 8 describes in greater detail, more or less universal. It was hardly surprising, then, that people who suspected they might be at risk were not exactly queuing up to find out whether they were infected.

## 5.1 Activists Inside and Outside China Opposed Mass Screening of Plasma Sellers

Their experience mirrored that of countless people around the globe. Since the start of the epidemic, a positive HIV test had exposed individuals to discrimination. And though a handful of studies showed that people who had learned of their infection following a voluntary test took steps to prevent passing on the virus, there was, for the first two and a half decades of the epidemic, very little benefit for individual patients in knowing they were infected. Because of this, both experts and activists in the international HIV world were fiercely wedded to the principle that all testing should be absolutely voluntary and be accompanied by personalised counselling both before and after the test. They also opposed the disclosure of test results to anyone but the client themselves. Since the mid-1990s, when treatment became available to infected people in industrialised countries, the benefit of HIV testing had grown very considerably: if a person tested positive, they could begin to take antiretroviral medicine that could prolong life by years, even decades. But in lower-income countries, this treatment was available only to the most privileged few, while discrimination continued to be experienced by virtually everyone with an HIV diagnosis. Because of this, the international community continued to oppose any sort of mass screening, in China or anywhere else.

Some voices within China shared these concerns. They pointed out that China's successes to date in tackling HIV derived from experiments that learned from what had worked in other countries, and they were reluctant to embark on a programme for which there was no international precedent. They were also sceptical that treatment would be made available to people who tested positive, and they were worried about continuing levels of stigma. Others in China's public health establishment argued forcefully that the potentially massive epidemic of HIV spread by blood collection practices in central China put the nation in a very different position from other countries. Screening of former blood sellers in central China would achieve two important goals at once, they said. On the one hand, it would provide a much better understanding of the true extent of the blood-driven epidemic. On the other hand, it would allow local governments to identify people who were living with the virus and provide an entry point for treatment, as well as helping them to target important prevention services to help those who were infected, so that they could take measures to reduce the risk of passing the virus onto their spouses, sexual or injecting partners or infants.

"It was very controversial at the time", said epidemiologist Zunyou Wu, who now heads the China CDC's NCAIDS. He was among those who believed that at least in the seven provinces of central China where the blood trade had been most rampant, a one-time testing of everyone who had sold blood in the mid-1990s was justified. Since the outbreak was not ongoing, a well-implemented screening targeted at the hundreds of thousands of people who sold blood at that time should identify a very substantial proportion of those infected. The government's eventual goal was to provide affordable care and antiretroviral treatment for anyone in China who needed it. But if anyone deserved to be at the front of the queue when it came to

free treatment, it was surely the families who had been encouraged to sell their blood to supplement their tiny agricultural earnings. Testing former blood sellers would open the door to treatment for them.

### 5.1.1 Forging Ahead to Meet Local Needs

After much discussion, Henan province took the plunge. Between June and August 2004, the province conducted a door-to-door census, asking whether anyone in the household had sold blood during the mid-1990s. Some 280,300 people said that they had; every one of them was offered a free HIV test. Since individual pretest counselling was judged to be impractical on such a large scale, people were informed of the process of HIV testing and of its benefits through poster and public information campaigns; campaigns that started before the census was even conducted. “The testing campaign was a powerful education tool in its own right, not just for the public, but also for policy makers”, observed Wu. “All those hundreds of thousands of tests, it just normalised HIV testing and really reduced stigma. It went beyond the health system; the testing campaign mobilised all of society to participate”. The government invested a great deal to arrive at this success, not just politically but also financially, according to former Vice Minister of Health Longde Wang. “Government took many measures to support the screening in the regions: building roads, schools, and wells; setting up clinics and providing free treatment”.

Of those who reported having sold blood in the 1990s, 92% agreed to take an HIV test – that’s 258,237 tests. Over 23,000 people were identified for the first time as infected with HIV, 9.0% of those tested. In just 3 months, Henan had identified six times as many newly diagnosed infections as they had reported in the whole of the previous decade. Slightly over half of those were in what are known as “discordant couples”, where the infected person has a husband or wife who is not infected. Knowing that they were living with the virus provided these men and women with an important opportunity to avoid passing on the infection within the family. Local health staff provided post-test counselling to those who tested positive, as well as free condoms for those who needed them. They also referred people for the follow-up tests they would need to determine whether they were ready to begin treatment, which at that time was offered to people who had fewer than 200 CD4 cells per millilitre of blood, a measure of a severely compromised immune system. As an expert committee from the Ministry of Health which evaluated the screening reported in 2005: “This type of mass screening could only have been completed in China” [3].

Advocates of the one-time mass screening were surprised by what happened in Henan in the years that followed. “After this campaign, everyone thought there would not be any more HIV-positive tests from plasma [in Henan]”, recalled Wu. But each year for the following few years, voluntary testing centres continued to identify several thousand newly diagnosed infections in former plasma sellers. The Ministry of Health expert committee that visited Henan a year after the

screening finished found that in the 10 months following the mass screening, over 6700 former plasma sellers had chosen to have voluntary HIV tests. Some of these may have been from among the 23,000 or so identified blood sellers who refused testing during the mass screening. But it was also clear that a lot of people had refused testing in a more passive way, by simply not reporting that they had sold blood. When they saw that people who tested HIV positive in the mass screenings were not persecuted and that many did in fact have access to free treatment as promised, they began to come forward of their own accord to the voluntary testing centres set up by the government in many hospitals and clinics.

Zunyou Wu recalled speaking to a woman who was diagnosed with HIV during a voluntary test the year after the mass screening. “She told me that even though she had been a plasma donor, she had lied during the survey. I asked why. Her son was planning to get married in October, she said. So even though she suspected she might be infected, she didn’t want to be diagnosed. She worried that if she was diagnosed with HIV, her daughter-in-law would not want to marry her son”.

The expert committee found that HIV infection among these late testers was 16.4% – over 80% higher than among those who were tested during the screening. And though the numbers of late testers fell over time, the proportion who tested positive rose. In a careful analysis of data from just four testing sites over the next 7 months, a third of over 700 former blood sellers were found to be infected. That suggests that the woman who chatted with Zunyou Wu was not exceptional. People who suspected they might be infected were more likely than others to avoid participating in the screening but came forward once they saw that they would get financial and health-care support if they did indeed have HIV. However, the committee reported: “From an analysis of the situation based on data collected through this mass screenings and from discussions with the people involved, the expert group believes that the proportion of former plasma donors who deliberately hid their HIV status is not very high”. They estimated that around 15% of people who had actually sold plasma in the outbreak years and who were still alive at the time of the 2004 census denied having sold blood. Interestingly, the four-site study showed that many other people who had not sold plasma but who thought they might have been exposed in other ways also sought out free HIV tests at public services after the screening. Of the people who feared they might be at risk because they had received a blood transfusion, over half were infected with HIV. Some 39% of the men and women who were worried that they may have been infected with HIV through sex also tested positive.

Clearly, there were more former blood sellers living with HIV in Henan than the 23,000 identified in the screening, but probably not stratospherically more. Figures circulated earlier by some activists of “up to a million” infections through this route in Henan were very definitely significant overestimates [4]. It is worth noting, however, that since the outbreak occurred around 1995, many of those infected would have died by the time of the screening a decade later. Without treatment, half of people with otherwise healthy immune systems who contract HIV sexually will have died 9 years after they become infected [5]. In poor farming communities where people may have been serially exposed to high infusions of the

virus through repeated blood sales and where access to any kind of healthcare is very poor, the proportion who died within a decade of the outbreak would probably have been much higher.

The mass screening among former blood sellers in Henan achieved both of its aims: it improved information about the epidemic and opened the door to treatment for tens of thousands of people who were infected with HIV. With a Herculean effort but in a very short space of time, it provided a robust idea of the extent of the HIV epidemic in the province, putting to rest fears that local authorities were covering up an epidemic. The public, policymakers and health-care providers all learned a great deal about HIV during the campaign; the stigma that continues to loom over the disease was dented, and many people lost their fear of HIV testing. Most importantly, the screening ratcheted up access to prevention and treatment services for those affected, in part because it identified those in need of care, but also because it motivated service providers to work more effectively. “Our efforts had a good impact in terms of HIV prevention and control, and made the international community change its attitude towards the screening”, observed former Vice Minister of Health Longde Wang. Following Henan’s success, the Ministry of Health in Beijing encouraged the other provinces that had an active blood trade to screen all people who had sold plasma there, too. These mass screenings were implemented between October 2004 and June 2005. By the end of June 2005, among 30 provinces, autonomous regions and municipalities excluding Xinjiang, a total of 1,274,046 former plasma sellers had been registered, and 904,746 of them (71%) had been tested for HIV. A total of 25,030 were confirmed HIV positive, giving an overall HIV prevalence among former plasma sellers of 2.8%.

### 5.1.2 Taking Testing to High-Risk Groups

The second province to take on the challenge of mass screening, Yunnan, was not, in fact, very much affected by blood donation. Yunnan had the oldest and most severe HIV epidemic in China. Driven at first by the sharing of needles between drug injectors, the virus had since spread through the province’s active sex industry. Unlike former blood sellers, people who took drugs and sold and bought sex were considered by many to have brought the disease upon themselves. On top of that, the behaviours that had resulted in their contracting HIV were illegal. And unlike the wave of plasma-driven infections, Yunnan’s epidemic was not a one-time outbreak confined to the past. New infections were taking place every day. All of this meant that mass screening in Yunnan posed different challenges compared with in the central provinces of China.

At home and abroad, opponents of targeted mass testing – including those who accepted that the Henan screening experience had been largely positive – once again raised their voices. For one thing, they believed that it would be both impractical and ruinously expensive to repeat the mass testing every year in a situation where HIV may be spreading more or less continuously. But they were also concerned that the screening would be damaging to gay men, sex workers and

above all drug users, exposing them to arrest and increasing the stigma with which they had to cope daily. Public health officials who supported screening all those at high risk, on the other hand, argued that approaches developed in an age before treatment was available, and that prioritised an individual's privacy above all else, were inappropriate in an age of treatment. "The international community was very critical, saying this was a violation of human rights, and of course not international best practice", remembers Zunyou Wu. He and other colleagues pressed for an approach that took into account the welfare of the uninfected majority as well as those living with HIV. "We said, listen, you can't talk about human rights in thin air. Don't HIV-positive people have a right to know their status and get treated? Don't they have a right to prevent transmission to their spouses? Don't the uninfected have the right to not be infected? When we talk about rights, we need to talk about individual rights, community rights and public rights".

Supporters of more active testing invoked the basic principles of infection control in epidemic outbreaks, including limiting the infectiousness of those who had contracted a disease (either through rapid treatment or, if necessary, by restricting their interaction with people who might be susceptible to infection) and by tracing their contacts. China had used these tactics successfully to shut down the SARS epidemic, and they have been used again more recently to control the Ebola virus in West Africa. But the history of the AIDS epidemic, coming to light as it did among gay men in the United States at a time when homophobia was the norm in that country, had led activists to argue that protecting the right to privacy and non-discrimination of infected individuals was every bit as important as controlling the spread of the virus. "There's a tension between public health and [individual] human rights" conceded Wu. "The way we see it, we feel like there is an obligation to protect the public, especially the uninfected".

Some see the debate as something of a false dichotomy. "We weren't against widespread testing of groups likely to be at risk", recalled Bernhard Schwartländer, a former UNAIDS representative in China. "We were just against mass testing that disrespected privacy". However, he recognised that the very concept of privacy differs from one society to another. "In China, if nobody feels that they are lacking privacy, if people don't feel it's a problem, then we shouldn't impose it".

In fact, the advent of effective treatment for HIV had removed some of the tension. This is because the likelihood of passing HIV onto a sexual partner depends in large part on the amount of virus in one's blood or body fluids. Antiretroviral medicines suppress HIV, so people who start on correct treatment early enough in the course of their HIV infection are very, very much less likely to pass infection onto their sex partners than people whose infection remains untreated. In other words, treatment supports the right to a healthy life for people who are living with HIV, while at the same time protecting the public by reducing the spread of the virus. To start on treatment, you have to know you have HIV. And that means taking a test.

At the time that Yunnan started its mass testing of people at high risk for HIV, the international community remained ambivalent about this argument. In July 2004, right in the middle of the mass screening in Henan and with Yunnan already

planning its own campaign, UNAIDS and the WHO issued a new policy statement on HIV testing. “UNAIDS/WHO do not support mandatory testing of individuals on public health grounds”, the statement said. It did, however, endorse the routine offer of HIV testing in a health-care setting to people who were at high risk of having been exposed to the virus, as long as follow-up counselling, psychosocial support and treatment were available. The statement did not mention China explicitly, but some paragraphs addressed the concerns raised by the country’s approach rather pointedly:

The cornerstones of HIV testing scale-up must include improved protection from stigma and discrimination as well as assured access to integrated prevention, treatment and care services. The conditions under which people undergo HIV testing must be anchored in a human rights approach which protects their human rights and pays due respect to ethical principles [6].

To many people’s surprise, the mass testing in Yunnan in large part complied with most of these principles – though there were exceptions. Over the last 3 months of 2004, the provincial health authorities identified 424,000 people as being eligible for testing because they were pregnant or at high risk for HIV infection. These included people who were married to or were the child of someone known to have HIV, people who suffered from another sexually transmitted infection or a disease that thrives in people with damaged immune systems and people whose behaviour exposed them to HIV, principally drug injectors and sex workers. Former plasma sellers were also included on the list. All these people were invited to have a free HIV test, and 98.7% of them agreed – a remarkably high rate which prompted some people to question the “voluntary” nature of the test. Obviously some people, including people in detention or rehabilitation for taking drugs or selling sex, were in no real position to refuse testing.

Overall, 3.2% of those tested were newly discovered to be living with HIV – nearly 13,500 people. In 3 months, Yunnan had doubled the total number of people diagnosed with HIV in the province since the start of the epidemic. It went on to increase its efforts to make care, treatment and prevention available.

The public health argument had won out. Having followed Yunnan’s progress closely, China’s central government believed that the benefits of providing a gateway to prevention and care services through testing of groups most likely to have been exposed to the virus far outweighed the risks. In the autumn of 2005, Beijing encouraged all provincial governments to step up their HIV testing efforts, starting by screening high-risk groups. This was one of the first steps in the massive increase in service provision described in greater detail in Chap. 7.



## 5.2 So, How Big Is the Epidemic?

One of the driving forces behind the huge screening efforts of 2004 and 2005 was a desire to understand the magnitude of the epidemic in China which, as Chap. 4 explained, was a subject of considerable debate both nationally and internationally. The near-universal assumption in the pre-SARS age was that Chinese authorities were systematically underestimating the number of people infected with HIV in the country. But no organisation had better data than the Chinese government, and none was able to offer a more reliable picture of what the real figure might be.

By mid-2005, all of China's central provinces had followed Henan's lead and carried out mass screenings of former blood sellers. Most other provinces had emulated Yunnan and greatly increased testing in the groups most at risk for HIV. This information, added to step up sentinel surveillance, was critical to building up a more accurate picture of the epidemic in this vast and hugely diverse country. The other important component of better estimates, every bit as influential in the final results, was the estimated size of each risk population. By testing a fixed number of people in a given risk population over a couple of weeks once a year, sentinel surveillance systems could provide a fairly robust picture of HIV prevalence for each risk group. For example, a sentinel site for drug users in one county in Yunnan might report that 87 of 200 drug injectors had tested positive for HIV. In other words, HIV prevalence among injectors in that area was 43.5%. Similarly, testing of 200 female sex workers in a market town in Guangdong found only one infection, so prevalence there would be 0.5%. To turn that into an estimate of the total numbers infected, we have to know 43.5% of *what?* Half a percent of *how many?* In the mid-2000s, only a handful of countries worldwide had made systematic and transparent estimates of the numbers of people in each of the groups that carry an especially high risk of exposure to HIV. China was one of the first.

Beginning in 2003, China CDC had worked together with UNAIDS and several other partners to try to develop and test ways of estimating the number of people in high-risk groups. Eventually, they settled on variations on what are known as "multiplier methods". In multiplier methods, you take a known quantity, and then use other data, sometimes from a survey, sometimes from a different, unrelated source, to estimate data that are missing from the original list. It would not be practical, for example, to count every single sex worker in every single establishment in a town. But most towns do have a list of licensed massage parlours, karaoke bars and night clubs and beauty salons. A "quick and dirty" survey in the town might reveal that 90% of karaoke bars and clubs, 50% of massage parlours and just 15% of beauty parlours are licensed. During the same survey, researchers count the number of women employed at a random subset of those establishments and the number that sell sex. This information can then be applied to the list of licensed premises. First, researchers construct a "complete list", adjusting the number upwards to reflect the missing establishments in each category. Then they multiply the number of establishments by the average number of women selling sex in each type of location. Of course many more sophisticated adjustments can be made, but overall, multiplier methods have now been shown to provide fairly robust estimates

of the number of people engaged in high-risk behaviours in many different countries and settings.

Once population size estimates are available, all health staff have to do is apply the HIV prevalence rate for that population to the number of people in the group to get an estimate of the number of people infected. These estimates can of course be made at many levels. A small, relatively homogenous country might make a single estimate for each of the risk groups nationwide. But a country as large and diverse as China must make estimates at much lower administrative levels. In 2005, for the first time, enough data were available to try to make systematic estimates at the level of the prefecture (the highest administrative level after the province). One province, Guangdong, went even further, making separate estimates for each county and then summing them up to get the provincial total.

Past experience suggested that developing estimates was a process that lends itself to disagreement and dispute in every country. Province A does not want to be seen to have more infected people than Province B. Or activists seeking funding for the groups they work with dispute results. “What?! There are three times more gay men infected than drug injectors? That can’t be!” These sorts of arguments are most likely to arise when people are faced with the absolute numbers. To protect against this, and to arrive at the most accurate estimates, the group leading the estimation process in 2005 espoused a fundamental principle. They would construct the spreadsheets so that the outputs – the absolute numbers infected – were hidden from participants in the process. Those participants included a wide range of people who had information or experience to contribute to the exercise: among them local health staff and people from the public security bureau, from the department overseeing the entertainment industry and from groups providing prevention and care services to those at risk. All had to agree on two things: the methods and the input data. Since data combined with method yields result, if they were agreed on those things, no one could later dispute the result if they felt it was too high or too low.

Elizabeth Pisani, a British epidemiologist who worked with the Chinese government in 2005 to support the country’s estimation effort on behalf of UNAIDS and WHO, travelled around the country with colleagues from NCAIDS of China CDC, helping provinces to develop their estimates. “There were some very heated debates”, she remembers. “People from different institutions had different ideas about which data were most reliable in the local context. Some days, we were still sitting at midnight trying to annotate the spreadsheet to make sure everyone’s inputs were recorded”. In the end, though, there was always an agreement. “By the end of the process, we were all pretty confident that whatever number came out, it would be as close to the truth as possible with the data we had”, she said. “And it was sure as hell going to be more accurate than any previous estimate”.

The national figure, when it was finally revealed in an internal meeting at the health ministry in November 2005, came as a surprise. With all the new data at their disposal, and with more rigorous methods than ever before, the epidemiologists had estimated that the total number of people infected with HIV in China at the end of 2005 was 650,000. This put the country’s leaders in a quandary. On the one hand,

they had just made a huge political commitment to tackling the HIV epidemic honestly and transparently. In other words, they had committed to telling the truth about the magnitude of the epidemic. On the other hand, that truth, arrived at using internationally sanctioned methods, showed that the HIV problem was not as severe as had been anticipated. Indeed the estimate was only three-quarters as high as the government's own previous estimate. This was bound to lead to accusations of a cover-up. It did not help that World AIDS Day was approaching fast: everyone in the AIDS world knew that new estimates were underway, and they expected an announcement with great media fanfare on December 1st.

The HIV experts in China CDC argued that the correct results should be made public, just as they had done since the very first outbreak of HIV among drug users in Yunnan in the late 1980s. Knowing that there was likely to be a lot of controversy over the results, they prepared for it carefully. "I remember being called in to work on the Sunday morning before World AIDS Day so that we could role-play the press conference and prepare for whatever questions might come up", said epidemiologist Elizabeth Pisani. A former reporter herself, she was assigned the role of the foreign journalist in the mock press conference, asking senior CDC staff difficult questions about government cover-ups.

In the end, the government decided to take a similar tack as it had back in the early days of the Yunnan outbreak. They did release the new estimates, but not until after World AIDS Day, when all the media attention had passed. In the meantime, the ministry held private briefings for academics, HIV support organisations and the staff of UN agencies, explaining the estimation process in exhaustive detail so that misinterpretation would be minimised. Despite this, there were voluble protests, including from AIDS activists such as Yanhai Wan. The National Centre for AIDS/STD Control and Prevention engaged actively with everyone who disputed the figures. "We said here are the methods, here are the data, you tell us what's wrong", said one official who worked on the estimates. "No one could find fault". Quickly, the objections melted away.

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### 5.3 Manageable Goals

The estimates were lower than expected for a good reason. HIV sentinel surveillance systems tend to be set up first in populations and in areas of greatest risk. This means that they tend to portray the "worst case" scenario. The prevalence rates measured in the worst-affected places then get applied to make estimates over a wide geographical area, simply because no other data are available. As the HIV surveillance system becomes more comprehensive, with sites established over a greater variety of areas, data provide a better approximation of reality. This pattern applies all over the world. Indeed in 2007, UNAIDS revised its estimates of the number of people living with HIV worldwide down from 40 million to 33 million for largely the same reasons – the geographical expansion of surveillance systems showed that there was more variation in the epidemic than previously thought [7].

China, huge and socially and economically diverse, is more affected by this sort of variation than most countries. The current surveillance system shows that just a fifth of the country's 303 sentinel sites for drug injectors record HIV prevalence of higher than 5%, almost all of them in the west and south-west of the country. Of over 500 surveillance sites among sex workers, just 7% record rates of infection above 1%. Those sites, fewer than 40 in all, are similarly concentrated in the south-western areas of the country where surveillance was first well established. Because of the massive nationwide testing efforts of 2004 and 2005, the 2005 estimates could for the first time take this variability into account.

As confidence grew that the new estimates were the best possible reflection of reality, health authorities at the national and at provincial and county levels faced a new challenge. With a solid idea of how many people were infected with HIV, they had no alternative but to start planning to provide care and treatment for those that needed it. Similarly, the more robust estimates of the numbers of people in groups at high risk for infection underlined the need for a huge scale up in prevention services for those who were not yet infected – the overwhelming majority, in every risk group. The next chapter describes how China rose to that challenge.

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