



CHINA'S SECRET P

HOW ONE U.S. SCIENTIST IS STRUGGLING TO HELP THE GOVERNMENT FACE UP TO

TIME
IN DEPTH

By ALICE PARK KUNMING

THEY LINE THE DUSTY ROADS OUTSIDE THE tiny villages of China's Henan province, several hours' drive from Beijing—mounds of dirt funneled into crudely shaped cones, like a phalanx of earthen bamboo hats. To the uninitiated, they look like a clever new way of turning over fields—an agricultural innovation, perhaps, meant to increase crop yields. But the locals know the truth. Buried under the pyramids, which now number in the thousands, are their mothers and fathers, brothers, sisters and cousins, all victims of AIDS. Like silent sentries, the dirt graves are a testament to China's worst-kept secret.

They are the reason Dr. David Ho has come to China. The New York City-based virologist was named TIME's 1996 Person of the Year for his pioneering work on the drug therapies that have largely quelled the AIDS epidemic in the U.S. and Europe. Now Ho is confronting the AIDS virus in its most populous stronghold. Up to 1 million Chinese are HIV positive, and that number could easily grow to 10 million by 2010, according to the Joint U.N. Program on AIDS. If current trends continue for another decade or so, China could overtake Africa, where 29 million people have been infected with the virus.

It's to head off that scenario that Ho has traveled more than a dozen times to China

LAGUE

AN EXPLODING AIDS CRISIS

over the past three years, setting up labs, visiting clinics, gathering blood samples, educating health workers and negotiating the intricately layered bureaucracy of the Chinese health establishment. Ho's efforts—and those of other AIDS activists—finally paid off last week when, on World AIDS Day, the Chinese government took a lesson from its sluggish response to the severe acute respiratory syndrome (SARS) epidemic and launched its first big AIDS public-awareness campaign, complete with posters, TV spots and an unprecedented visit by Premier Wen Jiabao to a Beijing hospital, where he shook hands with AIDS patients.

TIME accompanied Ho and his team

MYSTERIOUS MARKERS: Mounds like these, which have been sprouting up in Henan and other provinces since the epidemic began, are one of the reasons Ho came to China. The mask he wears in Kunming, below, is to protect him from laboratory monkeys, not HIV



from the Aaron Diamond AIDS Research Center (ADARC) for two weeks earlier this year as he traveled from Kunming, the cosmopolitan capital of Yunnan province, where his drug-treatment and vaccine projects are based, to the remote border town of Ruili, where heavy heroin trafficking and a thriving sex trade create a perfect HIV breeding ground, to Beijing, for his meetings with party leaders, including the newly appointed Minister of Health, Wu Yi. Everywhere Ho went, his mission was the same: to persuade Chinese officials to step up their modest anti-AIDS efforts and commit the resources necessary to launch a comprehensive nationwide program, modeled on the projects he has begun in Yunnan.

KUNMING, YUNNAN

THE NEATLY DRESSED HUSBAND AND wife are in their 50s and comfortably average looking. Their once-smooth dark skin is now veined and burnished to a proud sheen, reflecting the decades of hard work they have put into raising a family, earning their salaries and, now, battling HIV.

They seem out of place in the world of AIDS. Neither injects drugs. Neither has had any contact with the sex trade. But they represent the newest and most troubling front in China's war against the AIDS virus. As in other countries hit by HIV, the epidemic in China began in the margins of society—among migrant workers, drug users and prostitutes—and then gradually entered the mainstream population. In China this process was facilitated by the government, which, through the tragic mismanagement of its blood-buying program in the early 1990s, permitted blood-collecting practices that ended up contaminating the country's blood supply with HIV. Anyone who gave blood or received a transfusion during that period was at high risk of contracting the virus—and then passing it on to his or her partners during intercourse.

That was how this couple, who declined to give their names, got the AIDS virus. They have kept it a secret from everyone but their immediate family, preferring not to risk being ostracized by their community. "Nobody knows," says the wife quietly. "They would not understand." The husband, as far as they can determine, was the first to get infected, perhaps from blood transfusions during surgery. It wasn't until his wife required an operation in 2001, however, that they were both found to be HIV positive. "I could not believe it," she says. "I told them they were totally wrong, that their detection was

wrong. I heard reports that there was HIV in China, but that was mainly from people who traveled overseas. We never thought the virus would get here, in our family."

In a way, they are the lucky ones. Along with 68 other patients, they are part of a treatment program that Ho established in Kunming. There they will get the latest antiretroviral medications and the same careful monitoring that AIDS patients in the U.S. receive, including regular measurements of their viral loads and their immune-cell counts and tests to determine how quickly the virus is mutating to resist the drugs.

The vast majority of the Chinese who are HIV positive have no such access and must make do with drugs that treat the side effects of the disease—antibiotics for mouth sores



**THE EPIDEMIC
BEGAN IN
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AMONG MIGRANT
WORKERS,
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AND PROSTITUTES**



RUILI'S RED-LIGHT DISTRICT: At the brothels that line this border town, 63% of sex workers say they don't regularly use condoms, a lapse that helps spread the disease

and pneumonia, creams for skin lesions. Others rely heavily on traditional Chinese herbal medicines, which have no documented record of success. And even for those who are able to squeeze into one of the small studies supported by foreign aid groups, there is no guarantee of receiving proper follow-up care. "We have heard of places in China where the drugs are delivered but there is no training of the doctors in how to use them," says Ho. "We stress to them that drug treatment for AIDS is not like food relief, where the food is just dropped off."

As powerful as the AIDS drugs are, HIV mutates so rapidly that if the antiretroviral compounds are not properly administered, they are quickly rendered useless not just for that patient but for every other patient

exposed to the mutated virus. It's a concept that is difficult for even the best-intentioned patients here to appreciate. *TIME* spoke with a patient advocate, 31, who goes by the pseudonym Ke'Er. He was infected after selling blood and was admitted to a study in Beijing that provided free U.S. antiretroviral drugs, but he accidentally left his two-month supply on the train after his most recent visit to the city. "I dared not tell my doctor," he said, "because I felt bad that I was offered this opportunity but I lost my medicine. So I found a Thailand drug cocktail that is similar, and I'm taking that now." He doesn't know what the Thai drugs are but was

assured by a doctor in his village that they would help. Chances are they won't.

Even the best AIDS drugs properly administered can do only so much. What doctors really need to head off a runaway epidemic is an effective vaccine. In fact, it was a vaccine trial that took Ho to China in the first place. In a way, China is an ideal place to conduct vaccine research. Because it is home to huge numbers of people who are HIV negative but at high risk of developing AIDS, Ho will be able to inoculate some of them with his vaccine and find out whether they can generate an immune response robust enough to protect

them in case of a future exposure to HIV.

He is scheduled to inoculate his first healthy volunteers in New York with the U.S. version of the vaccine this week. Before he can begin testing a vaccine in China, however, Ho needs to know more about the virus strains circulating there. To protect against HIV, any experimental AIDS vaccine must be designed to match the rapidly changing strains moving through a population. Ho needs access to the blood of a lot of HIV-positive patients, so when he started looking

into China from Burma, Vietnam and Laos.

Scattered along the drug route is China's largest concentration of heroin addicts. Yunnan has the highest IV-drug-use rates in China, and a recent U.N. AIDS report estimates that anywhere from 50% to 80% of the users are carrying the AIDS virus. HIV spread via unprotected sex is also on the rise here, accounting for 15% of HIV infections in 2000. All told, say health officials in Yunnan, this single province accounts for one-third of China's reported AIDS cases.

cine trials, Ho was surprised by the response he got. They were eager to cooperate, he recalls, but had little interest in a vaccine. They were more concerned with helping those already struggling with the disease. "We wanted to push the vaccine," says Ho, "and they wanted to get more treatment for patients, more trained people and better labs to take care of the patients."

So for the past two years, Ho has retreated from his vaccine agenda and set up the pilot drug-treatment program in Kunming. Using funding from both ADARC and private donors, he has also built a clinic, set up a virology lab capable of performing basic viral-load tests and put together a state-of-the-art immunology lab—all of which will eventually absorb the testing required for the future vaccine studies.

In return, Ho has asked for access to the blood samples—some 24,000—collected from HIV patients throughout the province over the years. The samples will give him critical information about which populations in Yunnan would be suitable as the first subjects for his vaccine trials. "We realized we needed a quid pro quo," he says.

As part of that exchange, Lu's CDC team shared with Ho, in the first presentation of its kind to anyone outside the Chinese government, the details of AIDS penetration in Yunnan. Last March Lu informed Ho that in a 2002 survey of high-risk populations, 43% of IV drug users had shared needles with others in the past month, and that among female sex workers, 89% were unaware of their risk of contracting HIV. A majority of sex workers, about 60%, reported inconsistent condom use. Since they have begun collecting data, says Lu, there has been a 25% to 30% increase in HIV cases among IV drug users in the province. The incidence of HIV infection among sex workers has also risen steadily.

It was what Ho suspected but could never confirm without the data. Clearly, the few programs that the Chinese had put in place—distributing condoms and educating people about the dangers of unprotected sex—were having little effect on the spread of HIV, and most of the population was still both misinformed and uninformed about how dangerous the virus is. "We all appreciate that the epidemic in China was bigger than our expectations," he says. "We found ourselves taking on issues beyond just our research agenda. We realized that with a few more partners, we could—and should—



CHECKING IN: Ho examines an HIV-positive couple in the Kunming center

for a place in China to conduct his trials, he turned first to Yunnan, a province with one of the greatest numbers of HIV and AIDS cases. His hope was that health officials there, who see the daily toll the disease takes, would be more willing to accept help from an outsider. It wasn't that simple.

TRACKING HIV

YUNNAN IS CHINA'S FOURTH LARGEST province and historically one of its most mysterious and remote. (Its picturesque landscape of verdant hills and rustic villages inspired the legend of Shangri-La.) Its distance from the political leaders in Beijing has traditionally made it something of an outlaw province, home to dozens of minority groups and, in centuries past, feudal warlords who ruled with nearly absolute control. Today it is the gateway for heroin traffic that drifts

Given the Chinese penchant for careful record keeping, it's no surprise that officials here have been collecting and analyzing information on these cases for more than a decade. But access to the data—especially for outsiders—has been carefully guarded. The man in charge of generating the statistics is Dr. Lu Lin, director of the Yunnan Center for Disease Control (CDC), who has been monitoring HIV infection among the highest-risk groups in nearly 50 sites around the province since 1991.

A former prison guard with hooded eyes and a smart buzz cut who, at over 6 ft. tall, towers over most Chinese, Lu might seem a tough nut to crack. But when Ho approached Lu and his colleagues three years ago with a proposal to collaborate on vac-

AS MANY AS 10 MILLION CHINESE COULD BE INFECTED BY 2010



do more educating, treating and training of people about AIDS in China."

To broaden the scope of his efforts, Ho enlisted the support of the newly appointed director of the province's Bureau of Health, Chen Juemin. Chen, to Ho's relief, is intent on addressing the AIDS epidemic in his province and is eager to have Yunnan serve as a testing ground for programs that Minister of Health Wu in Beijing will consider for the rest of the country. "This situation will not just go away," Chen told TIME. "We probably lost a chance [of controlling AIDS] because we did not open up publicly about our HIV work in the early 1980s. We didn't realize then that the disease was so serious and could spread so fast."

MANGXI, YUNNAN

THE LAB, SUCH AS IT IS, CONSISTS OF just three rooms squeezed into a four-story building deep in Yunnan's southwestern town of Mangxi. The building has no elevator, and the external stairwell is bathed in the steamy heat that washes the entire region. Inside, however, in stark contrast to its tropical-outpost surroundings, are a few jewels of the modern microbiology trade—a state-of-the-art freezer for storing blood samples and an enzyme-linked immunosorbent assay (ELISA), a machine for screening HIV that can identify specific antibodies to the virus.

FALL IN: About 20% of drug users in rehab camps like this one have the virus

The equipment, including a computer and fax machine, all donated by Ho, will enable Mangxi to share vital data with Kunming, 280 miles away, and with Ho's group in the U.S. Yunnan's first case of HIV infection was discovered in Mangxi in 1989. Presumably the virus has been circulating here the longest; being able to include patients from the region in his study will enable Ho to tell how quickly the virus is mutating and which strains should be part of his experimental inoculation.

In Mangxi, Ho's priority is to sign up subjects, not an easy task when many of the prospective candidates are IV drug users and live in remote, largely inaccessible villages without telephones or newspapers; in fact, few of them can even read. Local health officials conduct their prevention efforts the old-fashioned way—going family to family, teaching couples how to use condoms and warning the young about the dangers of sharing needles.

One likely source of research subjects is the drug-rehabilitation camps that are blossoming all over Yunnan. A drug user picked up by the police is often forced to serve a mandatory three-month sentence in a rehabilitation camp, where calisthenics, lectures and daily treatment with a Chinese

version of methadone are supposed to curb the addict's habit. Up to 20% of the inmates, by the guards' rough estimates, are HIV positive; because they are registered by the police, they can be tracked after they leave the camps. Eventually Ho wants to find and monitor 500 HIV-negative patients in the Mangxi area who are at high risk of becoming infected. Merging information on how many in this population eventually become HIV positive with data from the urban residents of Kunming will help him measure how quickly the virus is spreading.

HENAN PROVINCE

CHUNG TO, FOUNDER AND DIRECTOR of the nonprofit Chi Heng Foundation in Hong Kong, is one of the few outsiders who has penetrated the state-imposed isolation of the so-called AIDS villages in central China. He is all too familiar with the plight of small children orphaned by the disease. On a recent visit to a village in Henan, he watched an 8-year-old boy taking his father out for a walk. The boy was pushing his father along in a creaky wooden cart. The man was dying of AIDS and had been confined to his bed for weeks, too weak to walk. His son suggested the cart, hoping that a little fresh air would energize his ailing parent. A few weeks later, the father was dead.

"It was an unforgettable scene," says To.

Using his own funds and donations, To has been helping these children continue their schooling, giving them a chance to free themselves from the taint of having a parent—or both parents, in some cases—die of AIDS.

In heavily affected provinces like Henan, Hebei and Shaanxi, an entire generation is vanishing in the shadow of AIDS. In family after family, mothers and fathers are dying, leaving as many as 200,000 children in Henan alone either parentless or in the care of aging grandparents. Ho and his colleagues were the first foreign group officially allowed to visit one of its villages,

paigns in the villages and schools, the government encouraged rural farmers and factory workers to sell their plasma for 40 yuan (\$5). The good intentions backfired when “bloodheads,” as some of the unofficial blood collectors came to be known, found a way to extract more plasma from fewer donors. Those running some stations pooled and processed the blood. Then they sent the plasma, containing useful proteins, to the blood banks and reinjected red and white blood cells, which can house HIV, into the donors. This enabled people to give several times a day, and nobody seemed to realize how dangerous the practice was. Infected blood now

stigma surrounding AIDS in these villages is the role that local leaders played in the blood-buying program. “Many government officials made a lot of money,” says the patient advocate who calls himself Ke’Er. To protect themselves, they wrapped their villages in the cloak of state secrecy, effectively sealing off AIDS patients from foreign aid groups as well as health officials from other provinces. AIDS-care centers still won’t put the word AIDS on their doors, opting instead for such intentionally obscure labels as “home garden.”

To break through this barrier of fear, Ho has encouraged Health Minister Wu to visit the AIDS villages in Henan. Wu’s visit would be the first by someone in her post and would send, Ho hopes, a powerful message that the government is more interested in controlling the epidemic than in assigning blame. Wu was appointed Health Minister when her predecessor, with whom Ho had begun his project, was fired by the Communist Party for mishandling the SARS outbreak—denying its existence until the epidemic was out of hand. “SARS was a big kick in the pants for China,” Ho says. “They were tainted by the SARS experience, and the health officials there now want to do the right things with AIDS.”

Ho doesn’t expect miracles. Many of the cultural traditions that make it difficult for the Chinese people and their government to openly address a sexually transmitted disease are too deeply rooted for one man to change. A recent survey by Futures Group Europe and Horizon Research Group revealed that 20% of Chinese still have not heard of AIDS and that only 5% have had an HIV test. Ho is convinced that even if just part of his program is put in place, it will save lives. “If we had known how difficult the process was going to be, I’m not sure we would have embarked on it,” he says, reflecting on his work of the past three years. “We put up with a lot. But as AIDS researchers, we could not continue to be distant from the vast majority of patients.”

The work, after all, is just beginning. Ho’s team in New York City has analyzed the first material from the blood samples. “It looks really good,” says Ho, visibly brightening at the prospect of finally starting up his vaccine studies. “Any one of the sites in Yunnan would work well for a vaccine trial.” Starting those trials will mean China is that much closer to controlling HIV and slowing the spread of those earthen graves of family members claimed by AIDS. ■



AIDS FIGHTERS: In China, Ho will test his vaccine first on these monkeys

Wenlou. At the local hospital, only two doctors care for more than 1,000 HIV-positive patients, and they were trained not by the Chinese health system but by one of Ho’s colleagues based in China.

Here, unlike in Yunnan, HIV spread not through illegal behavior but through blood donation. In the early 1990s, the Chinese leadership launched a blood drive and paid donors for their plasma. It was a program intended to benefit all Chinese—the poor by giving them a way to supplement their income, and the rest of China by replenishing the national blood banks’ dangerously low stocks. “It was like a poverty-relief program,” says a Henan resident who gave plasma in 1993 and became infected. Through cam-

flowed through hundreds of thousands of residents in the central provinces, shifting the epicenter of AIDS cases, many experts believe, from Yunnan to the heart of China.

Henan and its neighbors, Ho has decided, cannot wait for his program to become established in Yunnan. In his proposal to the Ministry of Health, Ho has modified his plan to include testing, treatment and prevention projects for Henan and Yunnan. “They desperately want help,” he says of the doctors he met in Wenlou. “They obviously have the data on AIDS patients but are afraid to show us.”

That fear is well founded. Adding to the

EVEN TODAY, 1 OUT OF 5 CHINESE HAVE NEVER HEARD OF AIDS