



Taking the Safe Route

Embedding HIV Education During Expressway Construction
in the People's Republic of China: 10 Years of Experience



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6 ADB Avenue, Mandaluyong City, 1550 Metro Manila, Philippines
Tel +63 2 632 4444; Fax +63 2 636 2444
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This publication was led by Sushma Kotagiri, social development specialist (safeguards), under the guidance of Robert Guild, director, East Asia Transport and Communications Division.

Scott Ferguson, Irene Bain, and Tulsi Bisht provided valuable comments as peer reviewers. Gloria Gerilla-Teknomo, senior transport sector officer, coordinated the development of this publication.

Phil Marshall, ADB consultant, prepared and designed the publication, with assistance from Giovanni Lintas.

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An estimated 37 million people were living with HIV at the end of 2015.

Almost half of them had access to treatment.

Globally, there were 2 million new cases in 2015, or one new infection every 15 seconds. About 300,000 of these cases were in Asia and the Pacific.

An estimated 500,000 people in the People's Republic of China are living with HIV.

At least 159,000 people have died of AIDS-related illnesses.¹

In March 2005, the Asian Development Bank (ADB) initiated the Baolong Healthy and Safe Action (BHSA) project to reduce the risk of HIV spread associated with the construction of a new expressway between Baoshan and Longling in Yunnan Province in the People's Republic of China (PRC).

More than 10 years on, after two more projects on three new expressways, ADB's HIV prevention work in the PRC is recognized as one of four international good practice examples of how to embed health education in an informal setting.²

Along the way, those involved have learned multiple lessons about what does and doesn't work in preventing HIV and other sexually transmitted infections in a road construction setting.

This publication seeks to capture the most important lessons for policy makers, program managers, and health educators looking to develop similar activities.

What does HIV/AIDS have to do with road construction?

In 2008, the Independent Commission on AIDS in Asia concluded that men who bought sex from women were probably the most important determinant of future rates of HIV in Asia.³

Road construction usually involves many transient male workers, away for extended periods from their families and the social norms applicable in their home communities.

Often, the forms of entertainment available to workers on-site are limited to those that involve alcohol, gambling, and sex.

The extent of the demand for sex work this generates is such that some brothel owners are known to follow different construction companies from one site to another.

In other words, transport construction projects can significantly increase the number and frequency of men buying sex, and this is a key factor in determining the extent of HIV spread.

By reducing unsafe sex among a workforce that predominantly consists of men who can have multiple sexual partners, including sex workers, the transport sector can make a strong contribution in reducing the spread of HIV.

The starting point: The HIV prevention clause

Recognizing the links between road construction and possible spread of HIV, the International Federation of Consulting Engineers (FIDIC) developed HIV/AIDS mitigation clauses for construction contracts in areas at risk of HIV spread.⁴ These clauses require contractors to provide education and condoms for staff and contract workers, as well as access to testing for HIV and other sexually transmitted infections (STIs).⁵

ADB requires inclusion of such clauses in standard contract documents used for large-scale civil works. ADB has also been advocating for partner governments to adopt this clause. In 2012, ADB worked with the Government of Mongolia to develop a Ministerial Order making detailed HIV prevention clauses compulsory in all transport infrastructure projects. In 2013, staff from the Longrui Expressway Corporation reported that clauses are now mandatory in all government-issued expressway development projects in the PRC.

In 2005–2014, ADB funded three projects to assist companies to implement the HIV prevention clauses along four expressway development projects in Yunnan Province and the Guangxi Zhuang Autonomous Region.

Each project presented a series of challenges, described in the following pages along with the solutions generated by the project team and staff of companies and government agencies involved in the road construction.

The projects also worked on HIV and STI prevention activities in communities and entertainment sites surrounding the roads. This was largely in support of existing efforts by the local authorities, particularly the Centers for Disease Control. This work is an important complement to the work with road construction workers but falls outside this document's focus on embedded education. In general, experience across the three projects supports FIDIC's recommendation to outsource HIV prevention in surrounding communities (and entertainment sites) to an approved service provider such as local health authorities or nongovernment organizations (NGOs).

The work in context

The HIV prevention work described in this document took place in three phases over four expressways as follows:

PHASE I

**Baolong–Baoshan to Longling, Yunnan Province
(Baolong Healthy and Safe Action Project)**

PHASE II

**Longbai–Longlin to Baise, Guangxi Zhuang Autonomous Region
Wukun–Wuding to Kunming, Yunnan Province**

PHASE III

Longrui–Longling to Ruili, Yunnan Province

In each phase there was a small project team, comprised of local experts with one international counterpart. In the first phase, the team worked under Marie Stopes International, an international NGO. The project team enjoyed particular cooperation with the Expressway Corporation associated with each expressway, under the guidance of the Yunnan and Guangxi provincial departments of transport. Local health departments and Centers for Disease Control provided trainers for project activities as well as HIV/AIDS materials. Other key project partners included the Guangxi Academy of Social Sciences and the Yunnan Nationalities University, which provided research and implementation support, and two local NGOs, Ruili Women and Children Development Center and AIDS Care China.

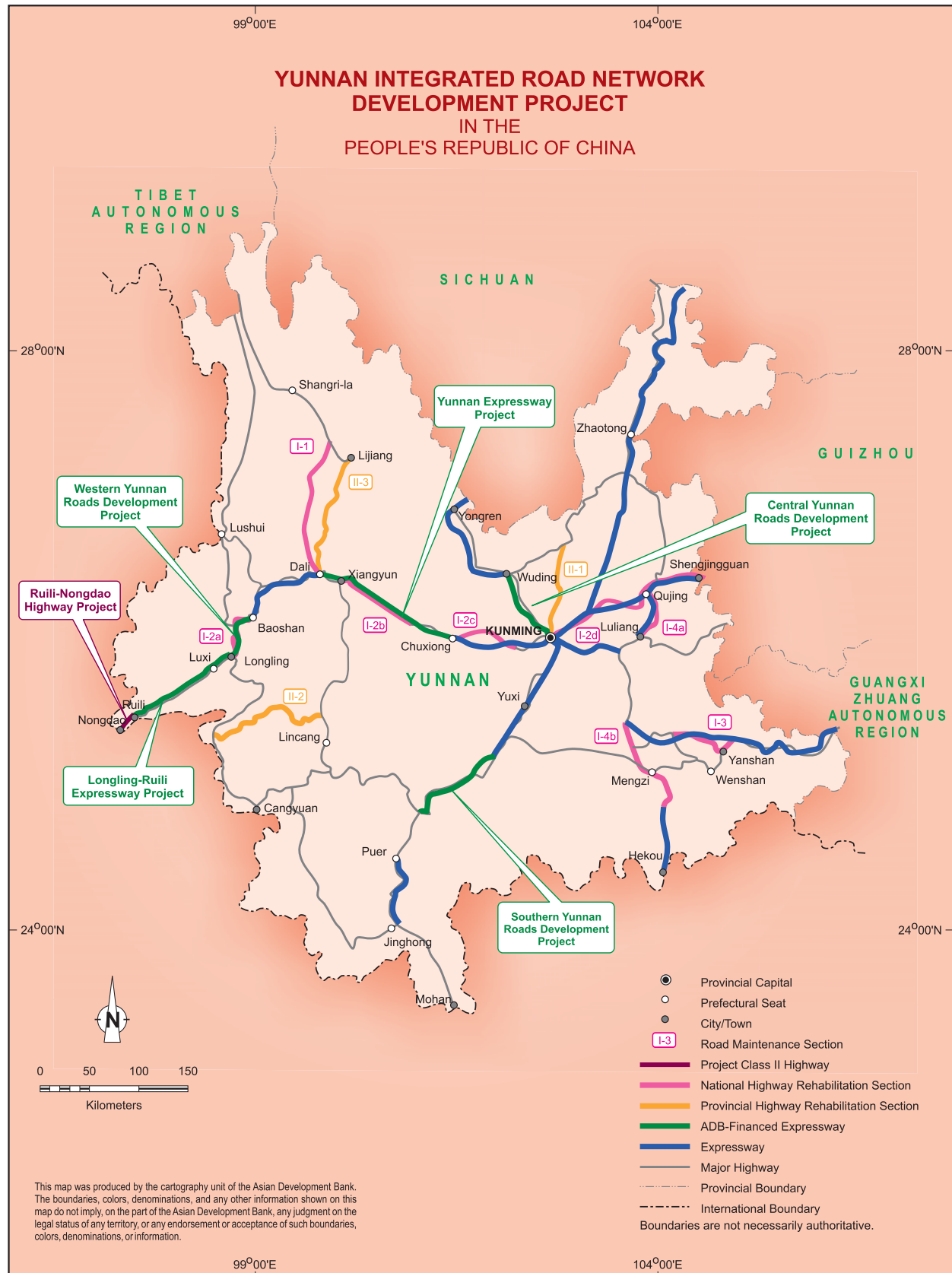
The connectivity of Yunnan

The Longrui Expressway is the final piece of the expressway linking Yunnan's capital, Kunming, with Ruili on the border with Myanmar. The border area has traditionally been associated with high rates of HIV cases, driven primarily by the sharing of needles between drug users. Yunnan also shares borders with Lao People's Democratic Republic and Viet Nam, as well as subnational boundaries with Guangxi, Guizhou, Sichuan, and the Tibet Autonomous Region. This level of connectivity makes the province an increasingly important transport hub. Effective health education is crucial to ensure that it does not also become a hub for HIV and other diseases.

The workers

Expressway construction work is usually divided into sections, with each section being contracted out to a large construction company that brings its own management, technical, and administration staff. The company engages subcontractors on different aspects of their sections, often with those they have previously worked with. Many of the workers involved are skilled, particularly for complex sections such as tunnels, and follow the same construction companies from worksite to worksite. Subcontractors generally try to hire unskilled laborers locally, but their ability to do this varies. On the Longrui Expressway, many locals were reluctant to take on the work involved at the level of pay offered.

Figure 1: Yunnan Integrated Road Network Development Project in the PRC



I.

Bringing the Contract Clauses to Life

“The HIV prevention clauses in the contracts of road construction companies were important but we realized that these were not being implemented, not just for our project or for other projects in the People’s Republic of China (PRC), but in other countries as well. We learned about research from Viet Nam which showed that contractors and some contract supervisors were not even aware of the clause,”⁶ – Fu Huiming, Guangxi Academy of Social Science and project team member.

The Longbai Expressway Cooperation’s Solution

During discussions with Xie Yan, the team’s focal point at Longbai Expressway Headquarters, the project team discovered that companies were not paying attention to HIV prevention clauses because compliance was not being monitored. Xie Yan came up with the idea of incorporating contractual

obligations on HIV prevention into the core safety monitoring and supervision system for construction companies (a government requirement in the PRC). This approach resulted in two big advantages:

- All parties involved in road construction took safety issues very seriously. Incorporating HIV prevention provisions on the checklist for site safety visits, reminded companies of their contractual obligations, and ensured compliance, without which they risked a fine.
- In developing the checklist for HIV compliance, Xie Yan and Fu Huiming were able to specify exactly what was expected of companies in terms of the activities required and the targets they needed to achieve.

Providing similarly detailed guidance was particularly useful on the Longrui Expressway where the contractual clauses on HIV were extremely general.

Including a Focus on other Sexually Transmitted Infections⁷

The presence of another sexually transmitted infection (STI), particularly one with open sores, can greatly increase the likelihood of HIV being transmitted during sex.

Given that HIV is spread in the same way as other STIs, the presence of an STI is a clear indicator of sexual practices that carry an HIV risk.

The prompt diagnosis and correct treatment of STIs is therefore important both in reducing the direct risk of HIV spread and in helping identify people with risky behavior. These people need to be provided with proper education and counseling. The project team and peer leaders made sure to emphasize an understanding of common STIs and the importance of effective treatment as an essential component of all formal and informal training.

IN BRIEF: Including HIV provisions in existing health and safety monitoring systems (i) helps ensure that companies implement HIV prevention contract clauses, and (ii) is an opportunity to provide them with guidance on how to do so.

II.

Developing a Work Plan

Across the different road projects, the project team worked with expressway supervisors and construction companies to develop a standardized program for HIV/sexually transmitted infection (STI) prevention. The program broadly covered:

Formation: (i) providing initial advocacy training for management, (ii) establishing an HIV prevention team and training for this team, (iii) developing a worksite HIV/AIDS /STI policy, and (iv) finalizing an HIV/STI prevention workplan.

Implementation: (i) identifying and training HIV educators, (ii) providing access to information and condoms, (iii) promoting and supporting adoption of safe behaviors, and (iv) facilitating STI and HIV testing.

Monitoring and reporting: (i) integrating monitoring into existing health and safety systems, (ii) establishing and maintaining records, and (iii) external monitoring of site HIV prevention work.

A detailed example of how these steps were implemented on the Baolong Expressway can be found online at: <https://www.adb.org/publications/implementing-hiv-prevention-road-construction-guangxi-zhuang-autonomous-region-prc>

One of the challenges across all projects was timing. For the project team, peak construction was the best time to access as many workers as possible, but construction companies did not wish to release workers at that time.

The Yunnan Department of Transport's Solution

One of the project team members, Liu Jianyun, was on secondment from the Yunnan Provincial Department of Transport. During discussions with his colleagues, he realized that there was an opportunity to begin HIV and STI prevention work during the preconstruction period. The Wuding Expressway Corporation brought the management staff together in this period and secured a timeslot for initial advocacy work. With managers on board, workplace policies could be finalized, HIV prevention teams could be identified and trained soon after arrival on-site, condoms acquired for distribution to workers, and information materials developed. Through this, the team was able to complete many of the initial HIV prevention tasks early in the construction cycle when key staff were less busy. By peak construction, most workers had received HIV and STI education and the team concentrated on reinforcement through short training exercises and reminders during health and safety briefings.

IN BRIEF: Starting work in the preconstruction period allows access to managers and key staff when they are less busy and help avoid possible tension during peak construction periods.





III.

Adapting the Peer Education Concept to the Context

Peer Education

Peer education is a key strategy in HIV workplace programs around the world.

It involves the use of people from a similar age group, background, experience, and language to educate and inform each other about HIV/AIDS.

Peers are seen as credible sources of information. As peers share similar experiences and challenges, they are well placed to understand barriers faced by their colleagues in adopting and maintaining safe behavior.

Many guides on HIV prevention emphasize peer education—the training of people by their peers—as an important strategy. The project team adopted this strategy and requested companies to send several workers to be trained as peer educators. The team, however, did not take into account the issue of high turnover. Within 3 months, most of those trained as peer educators had left the worksites.

The Companies' Solution

After coming together to discuss this problem, the companies themselves provided the solution. They refined the concept of peers to include foremen, site monitors, and

group leaders—staff directly employed by the contractors, but still close enough to the workers to have rapport. These people, referred to as peer leaders or field educators were not only more likely to remain throughout the construction period but could also continue their work on future projects.

In addition, workers selected to attend the initial peer education workshops were often just those available on the day. The use of their own staff encouraged the companies to develop criteria for selection. Peer leaders:

- had to have a close relationship with laborers;
- had to be respected; and importantly,
- had to be able to set an example with their behavior.



IN BRIEF: Using site laborers as peer educators can be problematic because of the high turnover. An alternative is the use of “peer leaders”—carefully selected road construction company staff who work directly with, and are respected by site laborers.





IV.

Ensuring Workers Have Accurate Knowledge

Accurate knowledge on HIV is an important step in ensuring that people are able to protect themselves from the disease. Research across HIV and AIDS projects in Asia has shown gaps in the knowledge of migrant workers, even in areas where there have been many resources devoted to HIV prevention campaigns.

Most commonly, misconceptions are based around the ways in which HIV cannot be spread, such as a mosquito bite, or sharing a meal or facilities with an HIV-infected person. These misconceptions can create fear, which translates into stigmatization of people living with HIV.

The project teams wanted to make sure that all workers had access to basic HIV education. The challenges they faced were two-fold. First, they knew that providing basic information in written form was often ineffective—some workers had limited literacy, some would not read the information, while others would read it once and not retain it. Second, the high turnover of workers that affected the peer education approach also affected the coverage of HIV education activities, with many workers leaving the worksite before they could be reached.

to take this solution one step further. They developed an HIV induction training DVD. In this way, we could be confident that the workers were getting accurate information in a manner that was more likely to keep their attention. This also helped to ensure that, when new contractors come on-site during later phases of road construction, their workers would also receive HIV education.” – Henry, project team member.

A 30-minute DVD developed by the project team covered: (i) basic HIV/AIDS and STI information, (ii) transmission modes, (iii) myths surrounding transmission, (iv) prevention methods, (v) anti-discrimination messages, and (vi) voluntary testing and counseling. It was designed to be suitable for workers with little or no literacy.

The Project Team’s Solution

“We learned that a standardized induction training was mandatory for all workers on transport construction sites. We realized that including a basic HIV component in this induction training would ensure that all workers received at least some form of HIV education. Then two of the team came up with an idea



IN BRIEF: The mandatory worksite induction is an opportunity to ensure all workers receive basic HIV and AIDS information. A tailored educational DVD can ensure a standardized and quality-controlled introduction to HIV and AIDS at negligible cost.

V.

Providing the Right Information in the Right Way

The project team wanted to distribute information materials to reinforce the key messages provided in the trainings. At first, they reviewed existing materials from other organizations. They were able to obtain pamphlets and other materials with basic information on HIV and AIDS although the less educated workers found some of these to be overly wordy. There were no messages targeted specifically for road construction workers. Moreover, the posters available were generally for indoor use and did not last long on construction sites.

The Project Team's Solution

The team decided to simplify the development of information materials. As project officer, Yang Jizhou, explained:

"We noticed that workers were always playing cards so we thought that including HIV and AIDS information on cards would be a great way to have HIV information permanently around. Luckily, ILO (International Labour Organization) had thought of this first and kindly let us use the cards they had developed and even replace their logo with ours. Then we decided on two core messages specifically for the construction workers."

The first poster developed by the project team was "Safe during the day, safe at night." This aimed to (i) reinforce the idea that HIV prevention was part of worksite safety, and (ii) convey the message that wearing a condom was as normal, sensible, and necessary as wearing a safety hat.

The second poster was a letter written by a worker to his family back home. Written in simple language, the letter assures them that he is taking care of himself. Yang Jizhou explained: *"We saw workers making many sacrifices for their families and thought reminding them of their loved ones could encourage them to take more care of themselves. We later heard about research finding that clients of sex workers often care more about placing their families at risk than themselves—so it all ties in."*



IN BRIEF: Information materials should be tailored for the construction sites, both in terms of messages and type. Workers have a preference for materials they can use, such as playing cards.



不小心被针刺到

Chung may bị kim đâm phải



照顾艾滋病病毒
感染者或病人

Người chăm sóc bệnh nhân HIV/AIDS



与艾滋病病毒
感染者日常接触

Tiếp xúc hằng ngày với người nhiễm HIV



给别人手淫或
接受别人给你手淫

Người khác dùng tay chơi hành hành
và một lần với mình hoặc ngược lại



自慰

Tự慰 là hành động



与艾滋病
病毒感染者
一同生活



VI.

Training in a Worksite Setting

Having provided workers with basic information on HIV, AIDS, and sexually transmitted infections (STIs), the team needed to ensure that such information was reinforced and translated into a reduction in risk behavior. The team of peer leaders provided the opportunity to speak to workers individually or in small groups. However, time on construction sites is limited, particularly during peak construction periods, and road construction staff expressed concern that workers might be tired and disinterested when it came to HIV education.

The Health Educators' Solution

Wang Dongmei, the health education specialist on the project team, had access to a wide range of interactive training exercises on HIV, AIDS, and STIs developed by local health authorities, Centers for Disease Control, and nongovernment organizations. She worked with colleagues to adapt these for use in transport settings, creating a small Field Educator's Guide for the peer leaders. The guide contained educational games, short videos, and other interactive activities able to be run during work breaks or just before or after dinner.

The most important project strategy was to promote the use of good quality and affordable condoms. Construction companies were able to access condoms free of charge from government authorities or at cost—which is about \$0.05 each—through a company working on condom social marketing. These were made available in two ways: (i) free distribution in semi-public areas such as toilets and (ii) sale by peer leaders.* While condoms were made freely available on-site, many workers had no prior experience of using them. Condom demonstration competitions therefore became a regular part of training activities.

According to a peer leader in Yunnan: “No matter how much you talk about it, the simple rule is to use condoms. We need to focus on this. There is one game in which workers have to try to put a condom on a banana after running three times around a post to simulate drunkenness. Whenever we ran it, it caused so much laughter that other workers always approached to see what was happening. In that way, we had the chance to talk about how being drunk affects our decision making and discussed how to address this.”

* Something to consider

The Baolong project provided condoms to peer leaders who were allowed to sell them at a heavily subsidized price, thus:

- Ensuring good quality condoms were available to workers,
- Providing a small income supplement to both compensate and motivate workers,
- Enabling a more accurate assessment of demand and use of condoms compared to free distribution.



IN BRIEF: There are many short interactive exercises that can be run in an informal setting on construction sites. These allow educators to stimulate discussion on specific issues.

VII.

Reinforcing Safe Behavior

Experience from all walks of life show that raising awareness of risk is rarely sufficient to change behavior. Common examples of people continuing a behavior they know is risky include smoking, overeating, and drunk driving. Early research on the Baolong expressway project indicated that management staff were actually more likely to engage in risk behavior than laborers.

Despite having higher levels of knowledge about HIV risk, they also had higher disposable incomes and access to vehicles which makes it easier for them to visit entertainment venues. In fact, on one project, the health team was actually introduced to some company leaders by a brothel owner.

Having made sure workers had access to cheap affordable condoms, and knew how to use them, the project still faced two problems. The first was drunkenness, leading to reduced sense of risk and increasing the likelihood that workers would engage in unsafe sexual practice. The second was a culture on some sites of workers seeking paid sex.

The Wuding Expressway Corporation's Solution

Drunkenness. Since risky behavior occur in groups, Pan Kunen from the Wuding Expressway Corporation worked with his peer educators to encourage those who visit entertainment venues to select a “designated driver” responsible for reminding colleagues

engaging in sex to use condoms and make sure they had them. The team reinforced this by running refresher talks immediately prior to major social events and holidays. According to Gao Yin of the Yunnan Provincial Department of Transport: “What I liked about Mr. Pan’s approach was that he was making HIV a group responsibility as well as an individual one.”

A culture of seeking paid sex. Another feature of Pan Kunen’s work was an acknowledgment that demand for paid sex is in part a consequence of long-term separation from spouses and partners, but also partly a behavioral norm. Pan was particularly conscious of the behavior of foremen as role models for their work teams and paid special attention to education activities with this group.

“We are encouraging foremen to come to the worksite with their wives—otherwise (they) could provide a bad example. The company encourages spouses of office staff to accompany them, and will employ them if they have relevant skills. For those who cannot bring their spouses, we reimburse the cost of three trips home a year. If they still want to go to entertainment sites, we recommend condoms and have a place where they can get them.”

Another simple intervention that can be considered is to deposit most of a worker’s pay in their home bank account. This would reduce the amount of disposable cash workers can use for entertainment, which in remote areas often involves primarily drinking, gambling, and sex.



IN BRIEF: The behavior of individuals is often influenced less by knowledge and more by the behavior of their peers and role models. HIV prevention work should aim to create an environment in which safe behavior is the norm.

VIII. Moving Beyond HIV



“One member of the project team was actually a doctor at a hospital run by the provincial transport department. When my colleagues heard that he was coming, everyone started discussing what was wrong with them—one had high blood pressure, another a toothache, and a third was always having stomachache. So we asked him to expand the HIV training session to include all of these topics. He brought some extra people from the hospital—for many of our workers it was the first time that they had any health education at all.” –Pan Kunen, Wukun Expressway Corporation.

The strong emphasis on HIV prevention in the context of infrastructure happened when the threat appeared sufficiently pervasive to mandate the development of stand-alone programs that dealt specifically with the disease. Dedicated HIV programs also recognized that dealing with HIV requires special skills as it addresses highly sensitive human behaviors.

However, as Pan Kunen suggests, many workers and managers have other—for them more pressing—health concerns that are often not being addressed. A more multifaceted training program was not only useful for the workers but also helped increase the acceptability of the work to the contractors.

Perhaps more importantly, among the key goals of HIV education programs is to reduce stigma and discrimination. Combining education about HIV with information about other diseases can contribute to this goal by helping people see HIV as a health issue, and not a morality issue.

IN BRIEF: Including education and testing on other health problems together with HIV/AIDS and sexually transmitted infections can (i) increase efficiency, (ii) increase the interest of workers, and (iii) help to de-stigmatize HIV/AIDS as a disease.

IX. A New Opportunity: Promoting HIV Testing

Getting more data

The inclusion of HIV prevention clauses in construction contracts is largely based on the links between behaviors associated with large construction projects and the behaviors that spread HIV/AIDS. There is surprisingly little data on HIV prevention rates among migrant construction workers anywhere in Asia.

As well as the benefits to individual workers, the provision of confidential on-site mobile testing offers the chance to begin to fill this gap.

Aside from encouraging people living with HIV to practice safe behavior, a key strategy for prevention is for people to know their HIV status. HIV testing:

- Allows people diagnosed with HIV to seek early treatment with anti-retroviral (ART) drugs, which not only prevents AIDS-related illness but can also bring other health benefits.⁸
- Has major HIV prevention benefits. ART treatment greatly reduces the amount of HIV in the blood and therefore reduces the possibility of sexual transmission by more than 90%,⁹ and mother-to-child transmission from 15%–45% to less than 5%,¹⁰ even as low as 1%.¹¹
- Encourages people with negative diagnosis to adopt safer behaviors to maintain this status.
- Encourages people with positive diagnosis to take steps to prevent passing the virus to their loved ones.

Most road workers live on remote sites with no access to HIV testing facilities. Many workers are concerned about being tested and are also shy about taking a test in an unfamiliar environment far from their own province.

“During the Longhai expressway project, seven sex workers in Baise tested positive for HIV. All reported road workers as clients. The local Center for Disease Control (CDC) asked us to introduce them to the nearby construction company with a view to offering voluntary on-site HIV tests. It was near the end of the project so CDC just ran a small pilot but it was enough to suggest strong worker interest—more than 80% of the workers

approached agreed to take the test. We wanted to take this idea to the Longrui Expressway Corporation but were not sure how to do it.”
– Phil Marshall, project team member.

AIDS Care China’s Solution

In discussion with the Longrui Expressway Corporation, the Longrui project team engaged a Yunnan-based nongovernment organization, AIDS Care China. This group specialized in providing HIV testing to remote populations using nonintrusive oral testing kits. AIDS Care China worked with trained peer leaders to run on-site trainings covering basic HIV transmission and prevention knowledge: condom demonstrations, the importance of testing, and pretest counseling. Aside from HIV tests, workers—laborers and company staff—were offered tests for blood pressure, sugar levels, and hepatitis C. Results for sugar and blood pressure were given to workers on the spot. But for HIV and hepatitis results, workers were subsequently contacted individually.

After the expansion of HIV and sexually transmitted infections training to cover other health issues, the inclusion of tests for other diseases was very well received by workers, and served to reduce possible stigma around the HIV test. Combined with the unobtrusive nature of the oral test, this supported very high rates of HIV testing—more than 90% of those receiving training opted to take a test. A total of 788 workers were tested, none of them were found to be HIV positive. However, three workers tested positive for hepatitis C.

IN BRIEF: Oral HIV testing kits offer the opportunity for voluntary low-cost unobtrusive testing on construction sites for all workers. This promotes improved health outcomes for workers and allows the collection of needed data about the prevalence of HIV (and other diseases) among migrant construction workers. Offering testing for other diseases at the same time is appreciated by workers and helps lessen potential stigma around the HIV test.



X.

Assessing Progress

The project team was left with the issue of how to evaluate the effectiveness of their work. While the team was reassured to know that none of the workers tested by the project were HIV positive, this could not necessarily be attributed to HIV prevention work undertaken on-site.

Measuring change in knowledge is relatively easy and can be done through self-administered surveys or interview. However, this does not guarantee behavior change. HIV prevention programs involve dealing with highly personal behavior and—in the case of drug use and commercial sex—often illegal. Thus, while instruments such as self-administered questionnaires can help assess levels of knowledge, these do not necessarily generate accurate information on behavior. Various research studies have found incompatible responses, for example, between construction workers and sex workers, on the extent to which construction workers visit sex workers and the degree to which they use condoms when they do so.¹²

There are no simple solutions to the issue of how to evaluate HIV prevention programs. Research findings by the Guangxi Academy of Social Science and the experience of the project team and counterparts were, however, consistent with the experience of other organizations—that work in an infrastructural setting should allocate fewer resources to assessment which can be costly and produce unreliable results, and more resources to action.¹³

In terms of assessing progress, the team considered that best results came from mixed methods involving:

- a short and simple survey on knowledge and awareness, can both be useful in assessing key areas of focus for educational activities and materials, and for measuring change over time;
- focus group discussions and observation among selected workers to provide insight into attitudes and behavior; and ¹⁴
- use of anonymous data from testing, both for HIV for other sexually transmitted infections, can provide an early warning of risky behavior for HIV infection.¹⁵

IN BRIEF: Valuable resources should not be devoted to surveys relying on self-reported behavior, which are unreliable. Mixed methods qualitative approaches, while providing less “hard data,” are likely to offer more accurate insights into change.

Recapping...

I - Including HIV provisions in existing health and safety monitoring systems (i) helps to ensure that expressway construction companies implement HIV prevention contract clauses and (ii) is an opportunity to provide them with guidance on how to do so.

II - Starting work in the preconstruction period allows access to managers and key staff when they are less busy and helps avoid possible tensions during peak construction periods.

III - Using site laborers as peer educators can be problematic because of high turnover. An alternative is the use of “peer leaders”—carefully selected road construction company staff that work directly with site laborers.

IV - The mandatory worksite induction is an opportunity to ensure all workers receive basic information on HIV and AIDS. A tailored educational DVD can ensure a standardized and quality-controlled introduction to HIV prevention and treatment at negligible cost.

V - Information materials should be tailored for the construction sites, in terms of both messages and type. Workers have a preference for materials they can use, such as playing cards.

VI - There are many short interactive exercises that can be run in an informal setting on construction sites. This allows educators to stimulate discussion on specific issues.

VII - The behavior of individuals is often influenced less by knowledge and more by the behavior of their peers and role models. HIV prevention work should aim to creating an environment in which safe behavior is the norm.

VIII - Including education and testing on other health problems together with HIV and other STIs can (i) increase efficiency, (ii) increase the interest of workers, and (iii) help to destigmatize HIV as a disease.

IX - Oral HIV testing kits offer the chance to provide voluntary low-cost unobtrusive testing on construction sites for all workers. This promotes both improved health outcomes for workers and allows the collection of much needed data about the prevalence of HIV (and other diseases) among migrant construction workers. Offering testing for other diseases at the same time is appreciated by workers and helps lessen potential stigma around the HIV test.

X - Valuable resources should not be devoted to surveys relying on self-reported behavior, which are unreliable. Mixed methods qualitative approaches, while providing less “hard data,” are likely to offer more accurate insights into change.



Going Forward

A good practice example of embedded education

The Harvard Kennedy School of Government has featured the work described in this document as an example of embedded education. It notes that:

An embedded education program pays attention to the organizations in which the education will be embedded, and the education practice itself.

It requires the training of non-educators to deliver the relevant content and tools, and calls for the development of a specific curriculum that will appeal to the frontline personnel who can and will deliver the educational messages effectively.

Asian Development Bank technical assistance team was able to embed HIV/AIDS education in the organizational structure of construction companies through the training of company managers and work team foremen. These individuals benefited directly from this training, and also passed on what they had learned to the migrant workers during various different “touch points” on the construction sites: health and safety orientation; work stoppages; and after work in the dining halls where the workers ate and the dormitories where they slept.¹⁶

A local example of mutual learning

Ayumi Konishi, director general, East Asia Department, Asian Development Bank

I am very pleased to see that the Government of the People’s Republic of China has included HIV prevention clauses in all its expressway construction contracts. The work described in this report is a template for implementation throughout the country.

I am struck by how many of the solutions described in this document came from the companies themselves. It is clear to me that the success of the work is grounded in this constructive dialogue and the mutual learning that has ensued. All of those involved can be justly proud of their efforts.

More Information

This document draws heavily on the information contained in the 2014 Asian Development Bank publication, *Implementing HIV Prevention in the Context of Road Construction: A Case Study from Guangxi Autonomous Region in the People's Republic of China*. Available here: <https://www.adb.org/publications/implementing-hiv-prevention-road-construction-guangxi-zhuang-autonomous-region-prc>

Other useful resources:

Asian Development Bank. 2008. *More Safety—A Resource Manual for Health and Safety in Infrastructure*. It sets out the basic structure of HIV prevention in the transport context (available in English and Chinese) <https://www.adb.org/publications/more-safety-resource-manual-health-and-safety-infrastructure>

Health and Safety with Me. 2010. Training exercises adapted specifically for use by field educators in a construction context (English and Chinese).

Producer. 2010. HIV Induction (video). This is a 30-minute introduction to HIV/AIDS and STIs designed for use during worker induction training (Chinese only).

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Endnotes

- ¹ National Health and Family Planning Commission of the People's Republic of China, China AIDS Response Progress Report, May 2015 and http://www.unaids.org/sites/default/files/country/documents/CHN_narrative_report_2015.pdf and UNAIDS, Fact sheet November 2016 <http://www.unaids.org/en/resources/fact-sheet>
- ² Embedded Education Case Study, Ash Center, Harvard University (Forthcoming). HIV/AIDS Prevention on Southern China's Road Projects: A Case of Embedded Education.
- ³ Independent Commission on AIDS in Asia. 2008. *Redefining AIDS in Asia—Crafting an Effective Response*. New Delhi: Oxford University Press. p.5.
- ⁴ FIDIC. HIV-AIDS in the Construction Sector. <http://fidic.org/node/750>
- ⁵ FIDIC. 2010. *Conditions of Contract for Construction: For Building and Engineering Works Designed by the Employer*. Multilateral Development Bank Harmonized Edition. p.25. http://www.jica.go.jp/english/our_work/types_of_assistance/oda_loans/oda_op_info/guide/tender/c8h0vm0000011e2j-att/civil_02.pdf The clause also refers to HIV prevention in communities, which is not covered in this publication
- ⁶ EHG et al. 2012. Knowledge, Attitudes, Practices and Behaviour Survey in An Giang, Dong Thap, Kien Giang, and Vinh Long, HIV/AIDS Awareness and Prevention Programme
- ⁷ Asian Development Bank. 2014. *Implementing HIV Prevention in the Context of Road Construction: A Case Study from Guangxi Autonomous Region in the People's Republic of China*.
- ⁸ Life expectancy now considerably exceeds the average in some people with HIV in the United States. G. Cairns. 2014. NAM aidsmap <http://www.aidsmap.com/Life-expectancy-now-considerably-exceeds-the-average-in-some-people-with-HIV-in-the-US/page/2816267/>
- ⁹ HIV Prevention Trials Network. A Randomized Trial to Evaluate the Effectiveness of Antiretroviral Therapy Plus HIV Primary Care versus HIV Primary Care Alone to Prevent the Sexual Transmission of HIV-1 in Sero discordant Couples <https://www.hptn.org/research/studies/33>
- ¹⁰ World Health Organization. Mother-to-child transmission. <http://www.who.int/hiv/topics/mtct/about/en/>
- ¹¹ Centre for Disease Control and Prevention. HIV Among Pregnant Women, Infants, and Children 2016. <http://www.cdc.gov/hiv/group/gender/pregnantwomen/index.html>

- ¹² See, for example, Pact. 2011. *Baseline HIV Risk on Highway 1A in Ca Mau, Viet Nam: Knowledge, Attitudes and Practice Related to HIV Prevention Among Construction Workers, Female Sex Workers and General Residents*. World Bank.
- ¹³ J. Thomason and L. Richie. Undated. Mining Sector Public–Private Partnerships for Health. JTA International. p. 3.
- ¹⁴ ADB’s More Safety manual provides a straightforward explanation of how to apply these techniques.
- ¹⁵ Data from HIV testing can also be used, but this is hampered by the window period of up to 6 months in which a person may be HIV positive, and highly infectious, but still test negative.
- ¹⁶ Embedded Education Case Study, Ash Center, Harvard University. Forthcoming. HIV/AIDS Prevention on Southern China’s Road Projects: A Case of Embedded Education.

Taking the Safe Route

*Embedding HIV Education During Expressway Construction in the People's Republic of China:
10 Years of Experience*

ADB has several road construction projects in Yunnan Province, People's Republic of China. ADB's HIV prevention work in the People's Republic of China features examples of how to embed health education in an informal setting. This publication seeks to capture the most important lessons for policy makers, program managers, and health educators looking to develop HIV prevention activities in road construction.

About the Asian Development Bank

ADB's vision is an Asia and Pacific region free of poverty. Its mission is to help its developing member countries reduce poverty and improve the quality of life of their people. Despite the region's many successes, it remains home to a large share of the world's poor. ADB is committed to reducing poverty through inclusive economic growth, environmentally sustainable growth, and regional integration.

Based in Manila, ADB is owned by 67 members, including 48 from the region. Its main instruments for helping its developing member countries are policy dialogue, loans, equity investments, guarantees, grants, and technical assistance.
