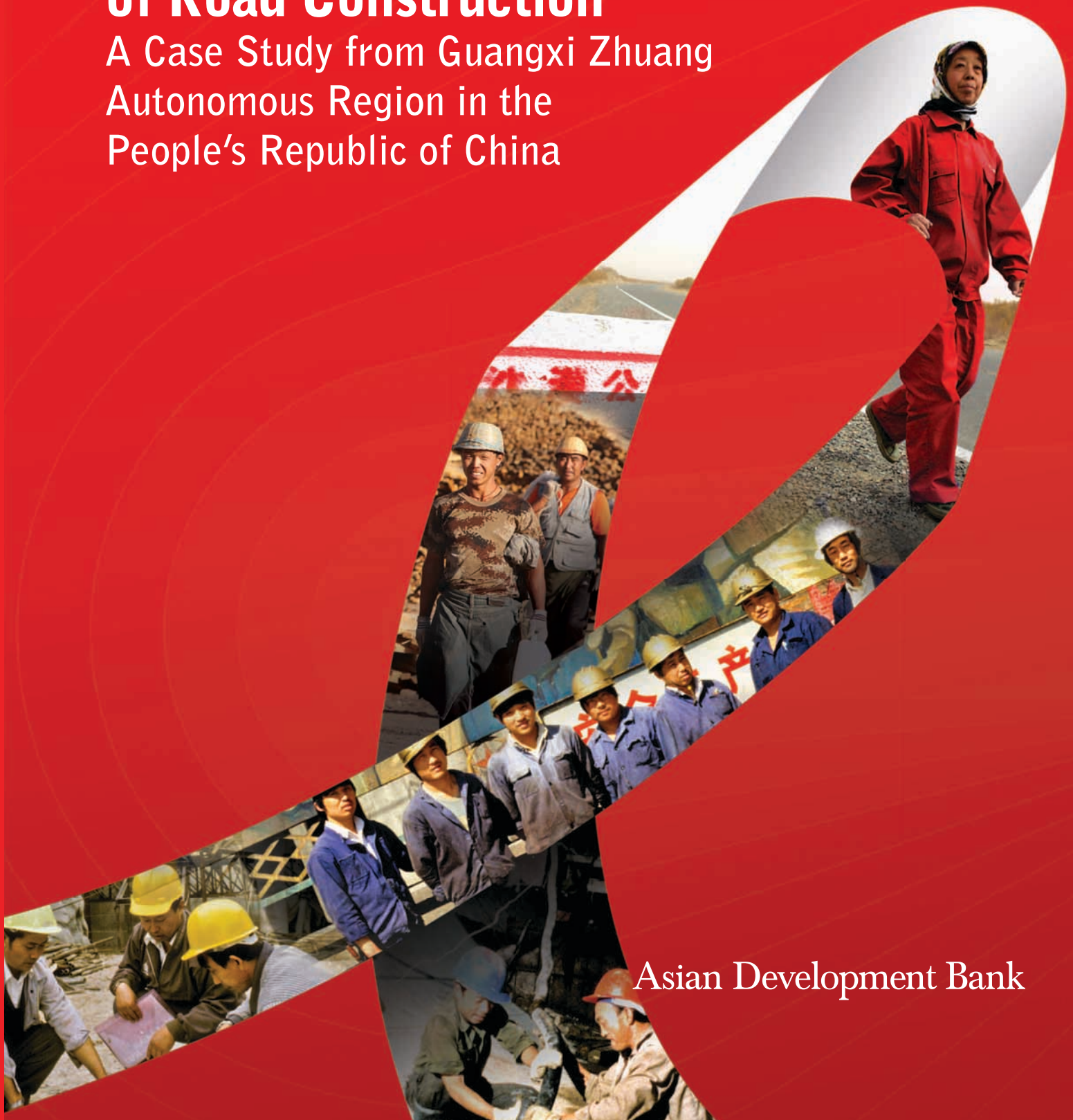


Implementing HIV Prevention in the Context of Road Construction

A Case Study from Guangxi Zhuang
Autonomous Region in the
People's Republic of China



Asian Development Bank



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Contents

Tables, Figures, and Boxes	iv
Preface	v
Acknowledgments	vii
Abbreviations	viii
1 Introduction	1
1.1 Links between HIV and Transport	1
1.2 Context	2
1.3 The Objectives of the Technical Assistance	4
1.4 The Objective of this Case Study	5
2 Overview of Approach	7
2.1 The Longbai Expressway	7
2.2 Prior Experiences and Lessons	8
2.3 Methodology	9
2.4 Overview of Framework on HIV Prevention for Transport	11
2.5 Key Results and Issues	11
3 Implementing the Framework: The Guangxi Case	14
3.1 Preparatory Steps	14
3.2 Implementing the Program	17
3.3 Working with Communities and Entertainment Sites	31
4 Adaptation and Expansion	36
4.1 What Can Be Replicated?	36
4.2 Adapting to Different Contexts: The Program in Yunnan Province	38
4.3 Adapting the Proposed Approaches Outside the People's Republic of China: Mongolia	39
4.4 Outstanding Issues	40
4.5 Building on the Experiences and Lessons	43

Tables, Figures, and Boxes

Tables

1	Proportion of Workers Able to Accurately Name Three Modes of HIV Transmission	12
2	Monitoring of HIV Prevention Work in Longbai Expressway: Section 10	16
3	HIV Prevention Team Training Content	19
4	HIV/AIDS Work Plan Table of Section 9 of Longbai Expressway	22
5	Form for Monitoring Monthly Work of Site Field Educator	30
6	Comparison of Results of Site Monitoring and Evaluation of Longbai Expressway	32

Figures

1	Chart of HIV Prevention Sector of Section 10 of Longbai Expressway	18
2	HIV Prevention Baseline Knowledge Levels	34

Boxes

1	Recommended Practice: Other Contractors Can Make the Best Advocates	17
2	Recommended Practice: Training of HIV Prevention Teams Requires Specialist Outside Expertise	18
3	Recommended Practice: Including a Focus on Other Sexually Transmitted Infections	23
4	Recommended Practice: Standardizing the Induction Training—Induction DVD	24
5	Recommended Practice: Timing of Interventions	26
6	Recommended Practice: Not Just Condoms—Piloting Mobile Voluntary Counseling and Testing	28

Preface

In August 2008, seven sex workers in the city of Baise tested positive for HIV. All of these women had, among their clients, construction managers and laborers working on a new expressway connecting Baise with Longlin, located in a mountainous area in Guangxi Zhuang Autonomous Region (Guangxi) near the border with Yunnan Province. These cases were discovered soon after the commencement of a new Asian Development Bank (ADB) technical assistance (TA) project, HIV in the Transport Sector in Yunnan and Guangxi, and served to alert road construction companies to the seriousness of HIV/AIDS risks faced by their workers.

The need for HIV prevention activities associated with road construction was further reinforced by initial research suggesting that up to two-thirds of those construction workers who had sex with sex workers did not regularly use condoms. These workers were clearly at risk not only of becoming infected themselves but also of passing on HIV to their sexual partners, including their wives.

The TA project supported HIV prevention activities along two expressway construction projects. The project team worked closely with transport authorities and road construction companies to develop an effective program of HIV prevention along the Longlin–Baise (Longbai) Expressway in Guangxi and then to adapt the program along the Wuding–Kunming (Wukun) Expressway in Yunnan Province. From the outset, the TA team sought to develop an approach to HIV prevention in the transport sector that could realistically be adopted more widely in Guangxi and Yunnan Province, and potentially in other parts of the People's Republic of China (PRC). Such an approach was deemed necessary as the PRC's expressway construction plans are projected to involve more than 20 million workers, the vast majority of whom live away from their homes.

Over a 2-year period, the project developed and refined a framework for HIV prevention in the context of road construction. The framework consists of 15 steps, divided into 4 preparatory steps and 11 implementation steps. These steps are based on recognized good practices that have been successfully tested internationally and within the PRC, including on the previous ADB-supported Baolong Healthy and Safe Action Project, 2005–2008. These practices reflect the importance of complementing a focus on individuals with measures to create a supportive and enabling environment for safe behavior, and to reduce the potential for stigma and discrimination against people living with HIV.

In particular, a key finding from previous HIV work is that mere knowledge of HIV/AIDS risks and prevention methods does not guarantee that people will adopt and maintain safe behaviors. This is true for many issues, other everyday examples being smoking, driving under the influence of alcohol, drug use, etc. The project therefore went beyond information dissemination and awareness building to encourage changes in risky sexual behaviors.

Educational activities were complemented by the provision of services, including supplying condoms and facilitating access to voluntary counseling and testing. Other features of the approach include securing support from key decision makers; using a variety of methods for HIV/AIDS education, ranging from broad awareness raising to interpersonal communication among peers; regularly reinforcing key messages; and promoting the uptake of health services.

These approaches have been successfully pursued on a range of dedicated HIV and transport projects in the past. However, the cost of wider application of existing models across the sector has been prohibitive. A major breakthrough in this project, therefore, was its success in building HIV prevention work into existing safety management processes and systems, including the safety induction training for all workers, and the safe production monitoring system. This reduces the costs of the work and makes it potentially more sustainable. Further, safe production monitoring is taken very seriously in the PRC, and including HIV work in this system ensures that it will be routinely assessed as part of regular monitoring activities. As an affordable approach, based on practices successfully tested internationally and within the PRC, those involved believe that the framework outlined in this document would be feasible on other expressway construction projects.

The TA project has been characterized by strong engagement of the construction companies involved, with numerous examples of companies undertaking work beyond their contractual responsibilities. Available feedback further suggests the project interventions have led to positive changes in behavior. Further, no cases of HIV or sexually transmitted infections were identified in the small testing sample undertaken among project workers. It is worth noting, however, that difficulties encountered with the research component of the project mean that limited hard data are available to confirm this. Indeed, as discussed in this case study, collecting data on behavior change associated with HIV and transport projects in a manner that is both reliable and affordable remains a challenge.

With that caveat, this case study report is presented as a promising approach, and one that is grounded in internationally proven practices and integrated into the transport context in a manner that is potentially sustainable. Strengthened research on future projects would allow identification of any shortcomings on how this practice is being implemented in each context.

Since its successful introduction along the Longbai Expressway in Guangxi, the approach has already been customized for use elsewhere in the PRC and in neighboring Mongolia. Besides outlining the framework developed in Guangxi, this report briefly outlines the adaptation of this framework to these new settings. An important feature of this adaptation process is the development of new initiatives to further strengthen the impact of programs on AIDS and also to expand them to cover other health issues, increasing both usefulness and acceptability of the approach. In Yunnan Province, for example, one company has sought to reduce the likelihood of risky sexual practices by increasing the proportion of staff accompanied by their families, while other health subjects were also incorporated into HIV/AIDS trainings in accordance with local priorities.

A major strength of the framework outlined in this case study is the scope it provides for companies to adapt it to their own contexts and circumstances, while retaining the core elements of an effective response to HIV/AIDS. Readers are likewise encouraged to consider this approach according to their own context and experiences.

Acknowledgments

This case study documents HIV prevention work on the Longbai Expressway in Guangxi Zhuang Autonomous Region (Guangxi), during June 2008–April 2011, supplemented by additional information from the Wukun Expressway in Yunnan Province. It has been prepared through the Asian Development Bank-financed technical assistance (TA) project, HIV/AIDS Prevention in the Transport Sector in Yunnan and Guangxi, People's Republic of China. Xiaohong Yang, Seiji Noda, and Tulsı Bisht led and managed the conduct of the TA and preparation of this publication. Overall guidance was provided by Tyrrell Duncan, director, Transport and Communications Division, East Asia Department and concurrently practice leader (transport).

This case study was coauthored by TA project team members Fu Huiming and Phil Marshall, with strong support from Chen Fuyou, Liu Jianyun, Wang Dongmei, Yang Jizhou, and Zhang Nan.

The team would like to express appreciation for the timely support of the Guangxi Communication and Transportation Department; the Guangxi State-owned Assets Supervision and Administration Commission; the Guangxi Health Department; the Guangxi AIDS Committee; the Guangxi Center for Disease Control and Prevention (Guangxi CDC); the Baise Health Bureau; and Baise, Tianlin, and Longling CDCs.

Special appreciation goes to Xie Yan and the team at the Longbai Expressway project headquarters, as well as Chen Rucheng and the professional safety officers from each section of the Longbai Expressway. These included Li Jinxuan, Wen Zhanli, Yu Hongxi, Huang Fuwei, Qin Kekuan, Lu Zhengjun, Bi Zhengmao, Wu Ningning, Zhang Tianfang, Liu Feng, Chen Jinsong, and Li Mengchuan. These colleagues carried out their additional HIV prevention responsibilities with energy and enthusiasm, not merely fulfilling their obligations but going beyond them, traveling frequently to the work sites to promote and monitor HIV prevention activities, even in severe weather conditions.

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Finally, the team expresses its sincere gratitude to the Swedish International Development Cooperation Agency for providing funding support for this and other important HIV and transport initiatives in the Greater Mekong Subregion.

Abbreviations

ADB	– Asian Development Bank
BHSA	– Baolong Healthy and Safe Action Project
CDC	– Center for Disease Control and Prevention
FIDIC	– Fédération Internationale des Ingénieurs Conseils (International Federation of Consulting Engineers)
HPT	– HIV prevention team
ILO	– International Labour Organization
LBHQ	– Longbai Expressway project headquarters
MSM	– men who have sex with men
PRC	– People's Republic of China
STI	– sexually transmitted infection
TA	– technical assistance
UNAIDS	– Joint United Nations Programme on HIV/AIDS
VCT	– voluntary counseling and testing
YPDOT	– Yunnan Provincial Department of Transport

1 Introduction

1.1 Links between HIV and Transport

There are limited epidemiological data in the People's Republic of China (PRC), or elsewhere in Asia on the links between transport infrastructure development and HIV/AIDS. What is known, however, is that construction projects invariably involve lots of transient male workers. These workers are away from their families and the social norms applicable in their home communities. Many of them have few things to spend money on other than entertainment in the form of alcohol and sex. The extent of the demand for sex work is such that some brothel owners are known to follow different construction companies from one site to another. Asian Development Bank (ADB) research has also documented a rapid growth in the sex trade along new roads in the post-construction period.¹

"Under the current severe HIV/AIDS situation, it is essential to take measures to prevent HIV/AIDS during the construction of expressways. These must be based on proven methods and scientific evidence."

State-owned Assets Supervision and
Administration Commission of the
People's Government of Guangxi Zhuang
Autonomous Region

The Independent Commission on AIDS in Asia, created in 2008, identified that, although HIV epidemics vary considerably from country to country, there are some important common and shared characteristics. In particular, the AIDS Commission concluded that men who buy sex from women are "probably the most important determinant of future rates of HIV" in Asia.² Further, higher mobility of these men means that should they become infected with HIV they are likely to put others at risk too, especially their spouses.

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.³ Given the number of people associated with transport construction work, the importance of the transport sector in HIV prevention is clear. By reducing unsafe sex among a workforce that predominantly consists of men who tend to have multiple sexual partners, including sex workers, the transport sector can make a strong contribution to reducing the spread of HIV.

¹ ADB. 2009. *Build It and They Will Come. Lessons from the Northern Economic Corridor: Mitigating HIV and Other Diseases*. Manila.

² Independent Commission on AIDS in Asia. 2008. *Redefining AIDS in Asia—Crafting an Effective Response*. New Delhi: Oxford University Press. p. 5.

³ The links between HIV and transport have long been clear. The paving of the Mombasa–Kinshasa highway, which travels across Central Africa from Kinshasa in Zaire (now the Democratic Republic of the Congo) to Mombasa in Kenya on the Indian Ocean, is widely regarded as having helped to open the way for HIV to spread.

Recognition of the potentially strategic role of the transport sector in the HIV/AIDS responses was one of the driving forces behind the 2006 Joint Initiative by Development Agencies for the Infrastructure Sectors to Mitigate the Spread of HIV/AIDS, signed by six development agencies, including ADB.⁴ The Joint Initiative seeks to strengthen cooperation to increase the scale, scope, and effectiveness of future HIV interventions in the infrastructure sector, highlighting the importance of greater sharing of experiences and lessons learned.⁵

HIV prevention also makes strong economic sense. For example, most of the money allocated to HIV/AIDS in the PRC is currently spent on treatment.⁶ Whereas treatment is expensive and ongoing, many prevention activities can be undertaken effectively at a comparatively low cost, particularly in the PRC where the foundation for an effective response already exists. The AIDS Commission estimates that \$1 of investment in appropriate prevention can save up to \$8 in treatment costs for expanding epidemic countries such as the PRC, a return of 800% (footnote 2, p. 89).

1.2 Context

The AIDS Epidemic in the People's Republic of China

By the end of 2011, an estimated 780,000 adults and children were living with HIV in the PRC. Of these, 64% were infected by sexual transmission (47% by heterosexual transmission and 17% by same sex transmission). A further 28% had been infected by injecting drugs, 7% by transfusion of contaminated blood, and 1% by mother-to-child transmission. It was estimated that 20% (156,000) of HIV cases had progressed to AIDS, with about 28,000 deaths in 2011.⁷

The estimated number of new infections for 2011 was 48,000, with 39,183 confirmed cases. The figures reveal the growing incidence of sexual transmission, particularly among men who have sex with men (MSM). The proportion of new cases resulting from sexual transmission increased from 33% in 2006 to 76% in 2011. The proportion arising from MSM increased from 3% to 14% over the same period (footnote 7).

The following groups in the PRC are categorized as the most at-risk populations:

- MSM: An estimated 0.64% of MSM have HIV
- Injecting drug users: An estimated 0.63% of injecting drug users have HIV
- Female sex workers: An estimated 0.26% of female sex workers have HIV, but in some provinces this is over 1%
- Clients of sex workers: An estimated 0.46% of clients of sex workers have HIV.

⁴ The signatories are the African Development Bank, ADB, the Department for International Development of the United Kingdom, the Japan Bank for International Cooperation (now the Japan International Cooperation Agency), KfW Entwicklungsbank (KfW Development Bank), and the World Bank.

⁵ The full statement is available at http://siteresources.worldbank.org/INTTSR/Resources/060811JointstatementHIV_final_.pdf

⁶ ADB. 2011. *HIV/AIDS Prevention in the Transport Sector in Yunnan and Guangxi, People's Republic of China*. Consultant's report. Manila (TA 6321-7-PRC). p. 11.

⁷ Government of the People's Republic of China, Ministry of Health. 2012. *[The People's Republic of] China AIDS Response Project Report*, 312. Beijing. p. 21. [http://www.unaids.org/en/dataanalysis/knowyourresponse/countryprogressreports/2012countries/ce_CN_Narrative_Report\[1\].pdf](http://www.unaids.org/en/dataanalysis/knowyourresponse/countryprogressreports/2012countries/ce_CN_Narrative_Report[1].pdf)

The Joint United Nations Programme on HIV/AIDS (UNAIDS) in the PRC also refers to “low-risk” migrants, a population estimated at more than 230 million. Information on this population is limited. UNAIDS’ latest information draws on a 2007 study that found low levels of knowledge, high levels of stigma, and significant risky behaviors, suggesting that the low-risk categorization may be somewhat misleading.⁸

Although HIV has been found in all 34 provinces, three-quarters of all cases come from just six provinces (footnote 8). Yunnan and Guangxi rank first and third among these six provinces. In May 2011, Yunnan Province had 70,477 people with HIV, including 22,906 AIDS patients. A further 13,118 had died. In the first 5 months of 2011, Yunnan Province reported 4,603 cases of HIV infection.⁹ For Guangxi, by the end of June 2010, a total of 57,356 HIV cases were reported, including 17,290 people with AIDS. A further 10,858 people had died. Guangxi reported 6,668 HIV cases in the first 6 months of 2010, with 76% of these cases involving transmission via sex.¹⁰

“The HIV/AIDS epidemic situation in Guangxi is very serious and prevention work is very important, especially with the floating (migrant) population, which is about 6 million annually in Guangxi and increasing. At present, HIV prevention work is still relatively weak, so the question of how to make this work less costly, more sustainable, and highly efficient becomes very important.”

The Guangxi HIV Prevention Office

The Response to HIV/AIDS of the People’s Republic of China

At the national level, the Action Plan on HIV/AIDS Containment, Prevention and Control, 2006–2010 identifies the goals, targets, and steps for implementing HIV prevention and control. This plan does not go into detail on the responsibilities of individual ministries and departments. However, it requires that business enterprises carry out HIV workplace education programs, and makes specific reference to those in construction, mining, and transport. The government’s national policy of “Four Free, One Care,” aims to

“Four Free”

1. Provide free antiretroviral drugs to the people living with HIV/AIDS.
2. Provide free voluntary counseling and testing (VCT) services to people seeking these services.
3. Provide free anti-virus treatment to pregnant women living with HIV/AIDS.
4. Support school-age children who are infected with HIV/AIDS with free education.

“One Care”

1. Provide welfare to people living with HIV/AIDS.

⁸ UNAIDS. *HIV in [the People’s Republic of] China: Facts and Figures*. <http://www.unaids.org.cn/en/index/page.asp?id=197&class=2&classname=China+Epidemic+%26+Response> (accessed 14 August 2013).

⁹ Yunnan Center for Disease Control and Prevention (CDC). 2011. *Yunnan AIDS Epidemic Trend Summary Analysis*. Yunnan, People’s Republic of China.

¹⁰ National Center for AIDS/STD Control and Prevention, People’s Republic of China, CDC. 2011. Facing Serious Epidemic Situation, Guangxi Pushes Forward its Crucial HIV/AIDS Project <http://www.chinaaids.cn/n1971/n2091/439298.html>

In Guangxi, the HIV/AIDS Prevention and Treatment Plan requires the Health Department to take the lead on prevention and treatment. Government departments, including those for transport, are to develop HIV programs within the scope of their duties. Enterprises such as hotels, restaurants, beauty salons, and other entertainment venues are to educate their personnel about HIV prevention and AIDS treatment.

Alongside the Ministry of Health and provincial AIDS committees, the PRC's centers for disease control and prevention (CDCs) are important partners in HIV prevention. It has a key role to play in providing training and undertaking research and surveillance. At the local levels, CDCs are responsible for HIV prevention and the management of sexually transmitted infections (STIs) relating to entertainment venues.

Development of Road Infrastructure in the People's Republic of China

The Eleventh Five-Year Plan, 2006–2010 called for 240,000 kilometers of high-speed highway to be built nationally, a task involving more than 20 million workers. Guangxi reflects these national trends. In 2010 alone, Guangxi was working on building or rebuilding 28 expressways totaling 3,245 kilometers. The estimated cost was CNY183.1 billion (approximately \$27 billion, or 10 times the estimated resource needs of the national HIV/AIDS program).

1.3 The Objectives of the Technical Assistance

In recent years, ADB has gained experience in the design and implementation of HIV prevention programs in the context of transport construction. This includes the Baolong Healthy and Safe Action (BHSA) Project that was implemented during the construction of the Baoshan–Longling Expressway in Yunnan Province in 2005–2008.¹¹ An external evaluation rated the project *successful* but noted that the cost of the program made wider replication difficult. However, the project resulted in the development of a manual, titled *More Safety: A Resource Manual for Health and Safety in Infrastructure*, which provides very useful background information to assist in developing programs on HIV prevention for road construction projects.¹²

Drawing on the lessons from the BHSA project, and mindful of the potential connections between HIV/AIDS and transport sector development, ADB decided to support a follow-up project, HIV/AIDS Prevention in the Transport Sector in Yunnan and Guangxi, along two new major highway projects—the Longlin–Baise (Longbai) Expressway in Guangxi and the Wuding–Kunming (Wukun) Expressway in Yunnan Province.

Although focused on these two construction projects, the underlying goal of the TA was to develop a systematic framework that could support the successful implementation and monitoring of HIV prevention interventions at other transport infrastructure sites in these two provinces and possibly in other provinces in the PRC. Emphasis was placed

¹¹ ADB. 2003. *Technical Assistance to the PRC for Preventing HIV/AIDS on Road Projects in Yunnan Province*. Manila.

¹² ADB. 2008. *Technical Assistance Completion Report: Preventing HIV/AIDS on Road Projects in Yunnan Province*. Manila.

on developing approaches that were viable and potentially sustainable without requiring external assistance. As part of this approach, priority was attached to building activities into established processes, using existing resources where possible and to restricting external inputs to areas where they were essential.

1.4 The Objective of this Case Study

This case study builds on and complements existing resources. These include the *Practice Guidelines for Harmonizing HIV Prevention Initiatives in the Infrastructure Sector: Greater Mekong Subregion*—a collaborative effort involving 11 organizations.¹³ The guidelines set out the rationale for HIV prevention in the context of infrastructure projects, detail the key considerations, and seek to harmonize approaches between participating partners. This includes organizing interventions around three settings: construction sites, entertainment venues, and surrounding communities.

The *More Safety* manual, developed under the BHSA project, guided the work of the project team throughout. The manual outlines how HIV prevention work can be implemented in the context of infrastructure development projects. It includes basic information about the AIDS epidemic and is accompanied by a range of supporting materials.¹⁴ This case study builds on the *More Safety* manual, setting out a series of practical steps that can be undertaken as part of a package to prevent HIV in the context of road construction. It explains the approach to implementation of each step and highlights effective practices and lessons learned. The study also highlights how the approach developed in Guangxi was successfully adapted for the Wukun Expressway in Yunnan Province.

In summary, this case study

- demonstrates how HIV prevention provisions commonly included in road construction projects can be implemented in a step-by-step manner;
- identifies measures that can be undertaken by contractors without outside involvement, and the areas where trained health professionals need to be involved;
- describes how to build HIV prevention into existing processes, such as worker induction and safety monitoring;
- highlights opportunities and constraints for HIV prevention work in the transport context;
- emphasizes the importance of monitoring to ensure contract compliance and describes how this was done in Guangxi; and
- brings in examples from Yunnan Province to show how the basic framework can be replicated in a slightly different context.

The project team also produced two other knowledge products. The first, *Health and Safety with You*, was specially designed to help field educators run educational activities

¹³ ADB. 2010. *Practice Guidelines for Harmonizing HIV Prevention Initiatives in the Infrastructure Sector: Greater Mekong Subregion*. Manila.

¹⁴ Other documents that informed the development of this document include the World Bank's *Road to Good Health HIV and Infrastructure Toolkit*, which contains a range of useful resources for developing and implementing the steps outlined in this case study.

in informal settings, combining participatory exercises suitable for the construction site with background information to help educators respond to frequently asked questions. The second, an educational DVD, was designed to provide an accurate and standardized introduction to HIV/AIDS as part of worker safety induction training. This is a low-cost way of ensuring all workers have at least some exposure to accurate and standardized HIV information, even in situations of high turnover of construction workers.¹⁵

¹⁵ At the request of site managers, the TA team also developed an HIV/AIDS knowledge booklet with detailed information on HIV/AIDS and related issues. While greatly appreciated by site managers, this was not published due to the range of overlapping general materials on HIV.

2 Overview of Approach

2.1 The Longbai Expressway

The Longbai Expressway was built to connect Longlin County and Baise City in Guangxi. The construction consisted of 14 contract sections, totaling 177 kilometers. During peak construction, there were more than 80,000 workers on the site, including 4,000 management and administrative staff. About 10% of the management staff were women. Migrant workers made up 97% of the total site population, including 37% from other provinces. Only 2% of the migrant workers were women. Importantly, while 46% of the workers were married, 86% had migrated alone.

The age cohort indicated that most of the workers were likely to be sexually active (92% were aged between 26 and 40). Since only one in seven workers had migrated with a partner, the potential for risky sexual behavior appeared considerable. In order to understand the baseline knowledge level of site workers, both to help inform activities and to assess progress at a later date, the Guangxi TA team conducted a rapid assessment of five contract sections. This involved asking workers to complete self-administered questionnaires, using convenience sampling. A total of 680 respondents were sampled and 600 valid forms were returned, a response rate of 88%. Respondents included management and administrative staff, work team leaders, truck drivers, and skilled and unskilled laborers.

In line with the Three Ones principle of a coordinated monitoring and evaluation system, the survey questionnaire was designed to facilitate comparison with the Guangxi HIV/AIDS monitoring and evaluation system.¹⁶ The main results of the survey were as follows:

- Among management staff, 81% were able to name the main methods of HIV transmission (sample size: 193), as were 73% of laborers (sample size: 178); and just 58% of work team leaders (albeit from a small sample size of 15).¹⁷
- Among the respondents, 73% identified sex without condoms as an HIV transmission method, but among unskilled workers this fell to 59%.
- Only 55% of respondents correctly stated that HIV could not be spread by mosquitoes.

¹⁶ See UNAIDS, 2005. *The "Three Ones" in Action: Where Are We and where Do We Go from here?* p.12. http://data.unaids.org/publications/irc-pub06/jc935-3onesinaction_en.pdf on 14 August 2013

¹⁷ Despite being such a small group, work team leaders were placed in a separate category due to their potential importance as role models.

- Among the respondents, 33% thought or were not sure whether taking a shower after having sex could prevent HIV, while 45% knew about methods to prevent mother-to-child transmission.
- Only 35% knew where to go for HIV counseling and blood testing services.
- Only 39% said that they would be happy to remain working with someone with HIV; 63% said they would care for a family member with HIV.¹⁸

Across the entire sample, 70 people reported having had sex with sex workers. This is likely to be an underestimate given the sensitivity of the topic. This indicative data was, however, sufficient to raise concern with only 21 of the 70 respondents (30%) stating that they always used condoms and 20 (29%) saying they never used condoms. Despite higher levels of knowledge, the behavior of management staff was not notably different in this regard. This was consistent with findings from previous work, including the BHSA project, and reinforced the importance of also emphasizing the HIV/AIDS risk faced by management staff, rather than simply focusing on their professional role in supporting prevention activities among other workers.

Training on construction sites was provided to both women and men, but primarily targeted male construction workers on the basis that they were the large majority (98%) and had the highest-risk behaviors. Further, the team was conscious that, by far, the best HIV protection for the wives and partners of these men is enduring that the men do not become infected with HIV in the first place. In contrast, training in entertainment sites focused on female entertainment workers. Work in communities around the expressway focused on both men and women. All research data was disaggregated by sex. Several team members had experience in programs piloting the use of the female condom but with limited success and, although initially included in the project as a potential intervention, the team decided not to make this a priority.

2.2 Prior Experiences and Lessons

The project built on existing experience both in the PRC and elsewhere. In particular, many lessons were drawn from the BHSA project in Yunnan Province. In line with recognized good practice, the project adopted a “settings approach,” focusing on interactions between various subgroups in three settings rather than targeting vulnerable groups in isolation, which can contribute to stigma and discrimination. The three settings were construction sites, entertainment venues, and communities surrounding the expressway.¹⁹

Information from the BHSA project confirmed findings from elsewhere that better information on HIV/AIDS and how to prevent it did not necessarily translate into a reduction of risky behaviors. The most risky behaviors among those working on the Baolong Expressway were found among management staff. While these staff had comparatively high levels of knowledge about HIV/AIDS, they also spent more time in entertainment

¹⁸ ADB. 2011. *HIV/AIDS Prevention in the Transport Sector in Yunnan and Guangxi, People's Republic of China*. Consultant's report. Manila (TA 6321-7-PRC).

¹⁹ The guidelines focus on construction sites and do not cover in detail work with entertainment venues or communities. For entertainment venues, the relevant centers for disease control were able to expand existing programs with support from the TA. Community activities were run through local authorities.

settings due to higher incomes and greater access to vehicles. This not only highlighted the importance of focusing on behavior change, but also suggested that more attention needed to be paid to managers, both in terms of their own behaviors and as potential role models for others.

The BHSA project's core strategy was to increase the use of condoms during sex with non-regular partners. The project saw an increase of more than 10% in the use of condoms by road construction workers with non-regular partners and with sex workers in particular. The proportion of sex workers who did not consistently use condoms fell from 18% to 5% (footnote 18). Noting the success of the BHSA project, the TA team therefore used similar approaches, adapting them to increase the potential for sustainability.

As with the BHSA project, the approaches to behavior change drew on internationally recognized good practice, acknowledging that presenting facts alone does not ensure behavior change and that change may take some time to occur.²⁰ It was recognized that behavior change is a complex and often long-term process motivated by multiple factors, including an awareness of the need to change, an understanding of the benefits of such change, a belief in one's ability to put the required skills into practice in different settings, and confidence in one's ability to maintain the new behavior in light of changing circumstances.²¹

For example, the promotion of condom use requires not just increasing understanding that condoms offer protection from HIV/AIDS and other STIs, but also ensuring that the target group has access to good quality, affordable condoms; knows how to use them; and is sufficiently confident to negotiate their use with sexual partners. With this in mind, the project promoted multiple complementary activities that aimed to move people from awareness to action by instilling the belief that desired outcomes would be obtained by changing behavior and by increasing individuals' sense of control over their own behavior. Recognizing that behavior change communication must combine both informational and emotional appeals, activities emphasized the impact of HIV not just on the individuals themselves but also on their spouses and families.

2.3 Methodology

The project covered two phases. In the first phase, the initial framework was piloted in five of the 14 contract sections. Two of the project team workers had worked on the preceding BHSA project, and phase 1 activities drew heavily on the *More Safety* manual they had produced. HIV prevention teams (HPTs) were formed on each pilot site, training was held for the HPT members and then for peer educators, and the TA team worked with contractors to help them develop workplace policies and work plans. The team also collected a range of appropriate information materials and obtained 20,000 free condoms from the Guangxi Family Planning Association. Some of the materials and condoms were

²⁰ See, for example, A. O. Fatusi and A. Jimoh. 2006. *The Roles of Behavior Change Communication and Mass Media*. <http://www.apin.harvard.edu/Chapter15.pdf>

²¹ For more discussion, see J. O. Prochaska and C. C. DiClemente. 2005. The Transtheoretical Approach. In J. C. Norcross and M. R. Goldfried, eds. *Handbook of Psychotherapy Integration*. 2nd ed. New York: Oxford University Press. pp. 147–171.

used for trainings, while the remainder were passed to contractors for distribution to workers to supplement condoms available from other sources (see Step 13 on p. 28).

Initial progress was slow, but Longbai Expressway project headquarters (LBHQ) staff worked closely with the TA team to secure closer cooperation and commitment from the contractors' management team, and strengthened monitoring of HIV activities. They also suggested the formal inclusion of HIV/AIDS education in induction training for all workers, something that the team had not previously considered.

A review workshop involving all project partners found that phase 1 was successful on many levels.

- HPTs were operating effectively in each contract section with clear divisions of work and were also training additional field educators.
- All contract sections had developed and publicized HIV workplace policies, based on the *More Safety* manual.
- Significant HIV prevention work had been undertaken on each site. The inclusion of HIV prevention education in the induction training had been implemented very effectively, reaching 100% of staff in three contract sections and more than 80% in the other two. Relevant HIV topics had been included in more than 80% of safety meetings.
- More than 11,500 condoms and 4,000 copies of the project pamphlets had been distributed. Site visits by LBHQ staff confirmed that HIV prevention posters were clearly visible in appropriate areas.

Key issues to be addressed were as follows:

- Programs were affected by high turnover. In particular, high turnover among laborers had a significant negative effect on peer education programs since peer educators often left shortly after being trained. It was thus agreed to consider using group leaders and work team leaders with appropriate interpersonal skills as field educators, as they were more stable but still sufficiently close to workers to be able to understand their realities and to be seen as trusted sources of information. This idea was implemented by many sites in phase 2 and proved to be an effective strategy.
- More training materials were required for field educators. This had been identified earlier, and work was already under way on a field educators' guide.
- Reporting was weak and needed to be improved. The TA team subsequently worked with contractors to simplify the reporting forms and procedures.

Following this workshop, the project team refined the initial program of activities to take into account experience from phase 1. Greater emphasis was placed on integrating HIV/AIDS activities into the existing safety system, including induction training and compliance monitoring. The outcome was a clear framework to guide contractors in implementing HIV prevention activities in the road construction context. The steps involved in this framework were further refined during the rest of the TA.

2.4 Overview of Framework on HIV Prevention for Transport

The recommended framework for HIV prevention in the context of road construction consists of 15 steps: 4 preparatory steps and 11 implementation steps. Each was successfully tested and refined during the project. They are described in more detail in Chapter 3.

Preparatory Steps

1. Including HIV prevention clauses in contract documents
2. Including HIV prevention indicators in contract monitoring and supervision systems
3. Convening advocacy meetings for company leaders on HIV prevention
4. Establishing an HPT in each work section

Implementation Steps

5. Training of HPT members by experienced health educators
6. Formulating HIV prevention policies
7. Refining and finalizing HIV and STI prevention plans
8. Providing HIV prevention training for site management staff
9. Including HIV prevention in induction training for all site laborers
10. Identifying and training field educators
11. Initiating multifaceted HIV prevention activities on site
12. Integrating the monitoring of site HIV prevention work into routine safe production management
13. Supporting change in risky behaviors
14. Establishing and maintaining site HIV prevention records
15. External monitoring of site HIV prevention work

2.5 Key Results and Issues

A year after the baseline survey, an endline survey was undertaken in the five pilot construction sites with a total sample size of 566. As with the baseline survey, a convenience sample was used. It was not possible to capture the same cohort of workers that had been interviewed during the baseline survey for reasons of turnover and initial research design. The results are a measure of HIV/AIDS knowledge and information exposure among the worker cohort at a specific point in time in the face of ongoing TA activities.²²

The surveys also focused primarily on knowledge and attitudes, rather than behaviors. As noted throughout this case study, increases in knowledge levels do not guarantee changes to safer behavior. Indeed, collecting reliable information on highly sensitive topics, such as sexual behavior, is not easy and is often very costly. Further, due to the lack of a

²² It would be useful for future surveys to collect data on the time workers had spent on site to establish the relationship between the time exposure to HIV education and changes to knowledge and attitudes (and, potentially, behavior).

control group, it is not possible to attribute with certainty any changes revealed by the research. These constraints, which are not unique to the Longbai Expressway project, are discussed further in Section 4.4. Noting these caveats, key research findings are described. They are

intended to be read together with, and complement, qualitative feedback on project activities included throughout the document, as well as existing literature validating the effectiveness of the types of approaches successfully implemented during the TA.²³

"The TA has tested and refined an HIV prevention model that can be promoted to other regions. The project developed activities covering all aspects from multiple angles and using multiple methods. The results of the baseline survey and follow-up survey have indicated that the project was remarkably effective."

Zhou Keda, Deputy Chief of Sociology Study Institute, Guangxi Academy of Social Sciences, and team leader for baseline and endline surveys

Whereas 37% of respondents (220 of 600) in the baseline survey reported that HIV/AIDS material was available at their work site, this number increased to 85% (479 of 556) in the endline survey. Research results showed correspondingly large changes in HIV/AIDS knowledge. For example, as seen from Table 1, the proportion of work team leaders able to name the three modes of HIV/AIDS transmission increased from 58% (14 of 24) to 100% (29 of 29). Major changes were also found among management staff and laborers.

Table 1: Proportion of Workers Able to Accurately Name Three Modes of HIV Transmission

Occupation	Management and Administrative Staff		Work Team Leaders		Laborers	
	%	Sample Size	%	Sample Size	%	Sample Size
Before HIV prevention publicity	81	193	58	24	73	178
After HIV prevention publicity	99	162	100	29	97	270
Percentage change	22		76		34	

Source: Asian Development Bank. 2011. *HIV/AIDS Prevention in the Transport Sector in Yunnan and Guangxi, People's Republic of China*. Consultant's report. Manila (TA 6321-7-PRC).

Other major differences in the endline survey were an increase from 55% (330 of 600) to 84% (468 of 556) in the number of people correctly stating that HIV does not spread by mosquito bites; an increase from 35% (211 of 600) to 70% (389 of 556) in the proportion of workers knowing where to get an HIV test; and a change in the most common response on attitudes to people with HIV from "requiring them to leave" to "treating them as a normal person."

Due to the small sample size of workers saying that they had sex with sex workers, the project was not able to collect sufficient data on condom use to yield statistically significant

²³ For example, Footnote 1, p. 1; Footnote 21, p. 9; and A. Medley, C. Kennedy, K. O'Reilly, and M. Sweat. 2009. Effectiveness of Peer Education Interventions for HIV Prevention in Developing Countries: A Systematic Review and Meta-Analysis. *AIDS Education and Prevention*. 21(3). pp. 181–206.

results; nor was it possible to attribute any changes directly to TA activities. Indicatively, however, 33 management staff (17%) reported having had sex with sex workers at the beginning of the program, of whom 14 said that they never used a condom. By the end of phase 1, 17 management staff (10%) reported having had sex with sex workers, of whom only one reported never using a condom.

3 Implementing the Framework: The Guangxi Case

This chapter describes the key steps in HIV prevention that were developed, piloted, and refined on the Longbai Expressway. The steps are set out sequentially, although there is some overlap between them. The chapter is divided into two sections: preparatory steps and implementing steps.

3.1 Preparatory Steps

Step 1: Including HIV prevention clauses in contract documents

- Rationale: The effectiveness of HIV prevention activities is greatly improved by the inclusion of HIV prevention clauses in transport construction contracts.
- Responsibility: Funding agencies for road construction

Recognizing the potential links between the spread of HIV and infrastructure development projects, the International Federation of Consulting Engineers (FIDIC) has prepared HIV mitigation clauses and recommends that these be included in construction contracts wherever there is the slightest risk of HIV infection relating to the construction site or activities.²⁴ ADB and other development agencies such as the World Bank now require inclusion of such clauses in the standard contract documents used for large-scale civil works.

"The use of the existing site management frameworks to undertake HIV prevention has proved to be effective and the Longbai HIV prevention project provides a practical model for HIV prevention in similar large infrastructure projects. The key steps were designed with a clear train of thought, combining comprehensive health promotion and behavior change techniques, with a focus on mobilizing management and support from technical sector."

Chen Jie, Deputy Director, Guangxi HIV Prevention Committee

Contractors for the ADB-funded component of the Longbai Expressway signed the standard FIDIC contract clause, which required them to conduct HIV/AIDS awareness activities including

1. conducting education campaigns with all staff and contract workers and surrounding communities;
2. providing condoms for all site staff and laborers as appropriate; and

²⁴ FIDIC. *HIV-AIDS in the Construction Sector*. <http://fidic.org/node/750>

3. providing for STI and HIV/AIDS screening, diagnosis, counseling, and referral to a dedicated national STI and HIV/AIDS program.²⁵

The construction companies indicated that they needed support in translating these contractual requirements into activities, particularly in terms of going beyond basic information provision. This provided the impetus for designing the HIV/AIDS program as a series of 15 steps.

The standard FIDIC HIV contract clauses require engagement of an approved external service provider. The TA team and counterparts agreed that it was impractical for the entire program to be overseen by such a provider. A key part of making the proposed strategy sustainable without external funding was to specify, to the extent possible, which aspects of the prevention work required specialist health expertise and which could be implemented by the contractors themselves. The team continuously assessed this issue throughout the program, culminating in the conclusion that the involvement of outside health providers was essential to train HPT members on each site, train field educators, and conduct monitoring and evaluation activities. Assistance would also be needed in sourcing information materials, as well as condoms.

Step 2: Including HIV prevention indicators in contract monitoring and supervision

- Rationale: Experience shows that for HIV contract clauses to be effective, it is important to monitor the efforts of the contractors to comply with these clauses.
- Responsibility: Expressway project headquarters

The inclusion of HIV clauses in road construction contracts is a key step toward ensuring appropriate action. However, experience from a range of countries clearly shows that, without accompanying monitoring mechanisms, these clauses are often ignored. In some cases, site managers are not even aware of them. The Guangxi team therefore put strong emphasis on monitoring to ensure adherence to these contractual obligations. In discussions with the LBHQ, the team was able to incorporate contractual obligations on HIV prevention into the core safety monitoring and supervision system. This presented major advantages as safety issues are taken very seriously in road construction in Guangxi. Including HIV issues in this system not only ensured close monitoring, but also meant that contractors who did not fulfill their responsibilities were liable to be marked down during their safety assessments and could face a fine.

Based on the contractual obligations, a monitoring form was developed for HIV/AIDS activities and then integrated

"Monitoring can be surely done very well because all of the safety supervision arrangements were made by our headquarters. Having added certain items about HIV prevention into the safety and technology induction form, if they didn't hand out relevant materials or workers didn't know about HIV/AIDS, they would certainly be fined for it."

Xie Yan, Longbai Expressway
project headquarters

²⁵ FIDIC. 2010. Conditions of Contract for Construction: For Building and Engineering Works Designed by the Employer. Multilateral Development Bank Harmonized Edition. http://www.jica.go.jp/english/our_work/types_of_assistance/oda_loans/oda_op_info/guide/tender/c8h0vm0000011e2j-att/civil_02.pdf p.25. Some organizations, such as the World Bank, have made modifications to this clause based on their implementation experience.

into the overall safety management form. Table 2 shows an example of the completed monitoring form for HIV components alone, as assessed for Road Section 10.

Step 3: Convening advocacy meetings for company leaders on HIV prevention

- Rationale: Experience shows that high-level understanding of the importance of HIV prevention and support for prevention activities is critical to program success.
- Responsibility: Expressway project headquarters

Early in the project, the TA team held an HIV prevention advocacy meeting for people in charge of different contract sections, and professional safety officers and senior staff from the supervision office. This 90-minute meeting was hosted by the LBHQ in conjunction with another meeting, reducing costs and ensuring good attendance. The session involved a presentation on the AIDS epidemic by the Baise Center for Disease

Table 2: Monitoring of HIV Prevention Work in Longbai Expressway: Section 10

Spot-Check Indicator Items	Criteria for Points Deduction	Points	Grading
HIV prevention responsibility	If there is no allocation of HIV/AIDS responsibility among staff responsible for safety production management, 10 points will be deducted.	10	10
HIV prevention work plan	If there is no site prevention work plan, 10 points will be deducted.	10	10
HIV prevention education at induction	If HIV-related knowledge is not included in induction education for all incoming management staff and construction workers, up to 20 points will be deducted. If the coverage rate of HIV prevention activities does not reach 100%, up to 10 points will be deducted. If HIV-related information is not regularly included in the monthly safety meeting, 10 points will be deducted.	40	35
Formulating HIV prevention policy	If there is no HIV prevention policy (including HIV/AIDS and sexually transmitted infection information, campaign activities, testing, and support information), 10 points will be deducted. If awareness among management staff and construction workers of the HIV prevention policy does not reach 100%, up to 10 points will be deducted.	20	18
Testing and counseling services	If the coverage rate of knowledge about medical institutions providing HIV/AIDS testing and counseling does not reach 100%, up to 10 points will be deducted.	10	8
Monitoring and evaluation	If site management does not monitor and evaluate HIV prevention work, 10 points will be deducted.	10	10
Final grading		100	91
Section No: 10 Site Supervisor: Wu Ningning			
Date: 28 March 2010 Assessment Supervisor: Xie Yan			

Source: ADB.

Box 1: Recommended Practice: Other Contractors Can Make the Best Advocates

The workshop held to review phase 1 of the Longbai activities was attended by management and senior safety staff of all contractors working on the Asian Development Bank (ADB)-funded sections of the expressway, as well as the three contractors working on the non-ADB-funded sections. Having heard contractors from ADB-funded sections talk about the importance of HIV/AIDS and having witnessed their pride in prevention activities, the other three contractors agreed to participate fully in the phase 2 activities of the project despite having no contractual obligation to do so.

Source: ADB.

Control and Prevention (CDC), a reminder of each company's contractual obligations, and an outline of the key aspects of an effective prevention program. Following the presentations, several participatory activities were arranged, helping to generate enthusiasm for the work (see Box 1).

Step 4: Establishing an HIV prevention team on each road section

- Rationale: The HPT coordinates and oversees all on-site HIV/AIDS activities.
- Responsibility: Contractors' management team

Each contractor formed an HTP. The core team usually consisted of a team leader (the company leader in charge of safety production), a deputy team leader (office director or professional safety officer), and project safety officers. In some cases, those responsible for overseeing field education were also formally included as team members. These might include people in charge of work zones, work team leaders, and field engineers. An example of the HPT from Section 10 is in Figure 1.

As recommended by the TA team, the HPT had a very clear division of work, matching tasks against the skills of different team members. The team leader was responsible for overseeing all the HIV prevention work to ensure effective implementation. The deputy team leader was in charge of work plan implementation, coordinating the implementation of all tasks, and supervising and inspecting the HIV prevention work done by each construction team. Each work team leader was in charge of organizing specific HIV prevention education activities.

"The most important thing is leaders' attention, not just including our expressway headquarters but also the communication investment groups. Then our safety officers can undertake their work better. If no leaders take charge of this kind of HIV prevention project, the workers wouldn't think it's a big deal."

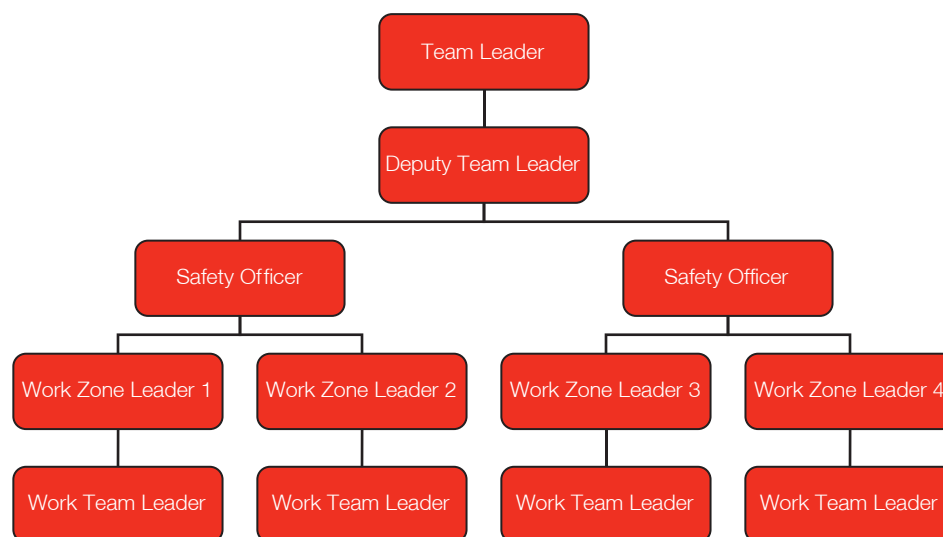
Xie Yan, Longbai Expressway
project headquarters

3.2 Implementing the Program

Step 5: Conducting training by experienced health educators for HIV prevention team members

- Rationale: Adequate training of the HPT members is crucial to ensure the development and effective implementation of HIV prevention work on the site.
- Responsibility: HPT in partnership with health educators

Figure 1: Chart of HIV Prevention Sector of Section 10 of Longbai Expressway



Source: ADB.

Core HPT members for each section undertook tailored training on HIV/AIDS and how to respond in a road construction context. The trainers included TA team members in close cooperation with specialist local trainers drawn from a wide range of organizations including the Guangxi HIV Prevention Committee, the Guangxi CDC, the Guangxi Medical University, the Guangxi Police College, and the Guangxi Academy of Social Sciences (see Box 2). Table 3 summarizes the key elements of TA training for HPT members.

Box 2: Recommended Practice: Training of HIV Prevention Teams Requires Specialist Outside Expertise

HIV is a sensitive topic dealing with highly personal human behaviors. It is also surrounded by a number of misconceptions. People must be given the opportunity to talk through and understand issues such as why HIV can be transmitted by blood but not by mosquitoes, why HIV is passed on by sexual intercourse but not by kissing, and why mandatory testing is not an effective strategy to combat the spread of the virus. Further, to develop, implement, and monitor effective programs, team members need a thorough understanding not only of the basics of HIV/AIDS, but also of behavior change and how to encourage and support it.

HIV prevention team members also have an important role in training others, and thus training must address not only their basic HIV/AIDS knowledge and prevention skills but also their training skills, which they should have a chance to practice. As a result, it is very important that skilled HIV prevention experts and, in particular, qualified trainers are involved in the HIV prevention team training to ensure information is presented accurately and in a way that resonates with the participants, and that the training uses participatory methods to deepen understanding of the issues.

Source: ADB.

Table 3: HIV Prevention Team Training Content

Topic	Activity
Introduction	<ul style="list-style-type: none"> • Pretesting and rapid assessment survey • Project introduction • Participant introduction • Training rules • The desensitization of “sex”
Information on HIV/AIDS	<ul style="list-style-type: none"> • Introduction to HIV/AIDS and sexually transmitted infections (STIs) • Guangxi and Baise HIV/AIDS and STIs • Voluntary counseling and testing
Introduction to the transmission and prevention of HIV/AIDS	<ul style="list-style-type: none"> • AIDS patient role-playing • Risky behavior game • Condom use and demonstration • Condom game
Stigma and discrimination	<ul style="list-style-type: none"> • HIV/AIDS impact on families, individuals, and society
Training skills	<ul style="list-style-type: none"> • Short presentation by participants in small groups using <i>Health and Safety with Me—Manual for Field Education</i> • Desensitization game; HIV/AIDS disease game; HIV/AIDS and you: wildfire game, condom game, values discussion

Source: ADB.

“The training should combine an explanation of the issues, the opportunity to debate different ideas, and participatory activities such as playing games. This makes for a colorful and vivid workshop. In order to bring out their creativity, HPT members of each contract section were invited to present their own opinions and share views with others on the implementation of programs in their workplaces. The participants brought an understanding of the real situation on site, and the participatory training methods and atmosphere saw them raise valuable proposals to improve our initial ideas.”

Fu Huiming, TA deputy team leader

Step 6: Formulating a site-specific HIV prevention policy

- Rationale: A site-specific prevention policy sets out a contractor’s overall commitment to HIV prevention, including with regard to workers living with HIV.
- Responsibility: HPT

Although not required by the standard HIV contract clauses, a workplace HIV/AIDS policy is strongly recommended by the *Code of Practice on HIV/AIDS and the World of Work*, published by the International Labour Organization (ILO), which also provides a checklist for what the policy should contain.²⁶ This includes conducting HIV and STI prevention education based on accurate HIV prevention information, encouraging positive behavior change to reduce risks of HIV/AIDS, providing information on testing and support services, ensuring access to condoms, and guaranteeing the right of privacy of people living with HIV/AIDS to continue working and to be free from discrimination.

²⁶ ILO. 2001. *The ILO Code of Practice of HIV/AIDS and the World of Work*. http://www.ilo.org/aids/Publications/WCMS_113783/lang--en/index.htm

Site HIV Prevention Policy: Section 1–1 of Longbai Expressway

1. The HIV prevention team will publicize knowledge related to HIV/AIDS and sexually transmitted infections to all workers and laborers.
2. The project office will ensure sufficient funds are available for activities, and that there is strong management and regular supervision.
3. Regular information will be provided on good HIV interventions, including promotion of the correct use of condoms.
4. Workers will be encouraged to have regular checkups, and respect the privacy of other workers.
5. Staff will maintain confidentiality on any worker's HIV testing and results.
6. There will be no discrimination against workers and others with HIV/AIDS or people suspected of being infected with HIV.
7. The HIV prevention team's work will be in line with the national "Four Free, One Care" policy.

Source: ADB.

All contractors involved in the project developed and disseminated a workplace HIV policy. An example is the site HIV prevention policy from section 1–1 of the Longbai Expressway. The HPT discussed the draft policy in a monthly safety meeting. After finalizing it, they formally included it in the site rules and regulations system. They then publicized the policy by posting it on public bulletin boards in workplaces and work camps, presenting it in monthly safety meetings and management staff meetings, and ensuring its inclusion in worker induction training.

Step 7: Refining and finalizing HIV/AIDS/STI prevention plans

- **Rationale:** A detailed work plan helps HPTs plan, implement, and monitor activities, as well as ensuring that all key strategies are incorporated.
- **Responsibility:** HPT

The approach piloted and refined by the project went beyond the dissemination of information and emphasized adoption and maintenance of safe behaviors. Key elements included the following:

1. Information
 - education about HIV and other STIs and how they are transmitted or not transmitted,
 - education about how HIV and STIs can be prevented,
 - education on the importance of eliminating stigma and discrimination, and
 - education on where to access STI treatment and voluntary counseling and testing (VCT) services.
2. Promoting safe behaviors
 - encouraging people to adopt safe sexual practices, in particular encouraging those with multiple sex partners to use condoms every time they have sex;

- encouraging people to accurately assess their own risk of contracting HIV/AIDS;
 - persuading those with STI symptoms to seek prompt treatment from reliable service providers;
 - encouraging people at risk to access VCT; and
 - addressing barriers to safe behaviors by interactive communication on (i) accessing, negotiating, and using condoms; and (ii) dealing with risky behaviors caused by alcohol.
3. Maintaining a supportive environment for safe behaviors
- fostering company commitment to HIV prevention;
 - developing and publicizing an appropriate HIV policy in the workplace;
 - making suitable staff available to work on the issue and ensuring adequate time for prevention activities; and
 - ensuring constant access to good quality, affordable condoms.

A range of methods were used to pursue these strategies. These included distribution of information materials, formal training, field education, and the provision of condoms. Examples on how these strategies were implemented are included in subsequent sections.

Following their participation in the project training, each HPT developed site work plans based on these core components. An example is provided in Table 4.

Step 8: Providing HIV prevention training for site management staff

- **Rationale:** Contractors on the Longbai Expressway attached great importance to HIV education for laborers, and this is very important. However, it is also important that management staff are covered. While managers often have high levels of HIV knowledge, this does not necessarily mean that they practice safe behaviors. Higher incomes and access to vehicles often make it easier for them to engage in risky activities.
- **Responsibility:** HPT

Training was provided for management staff by the HPTs. This began with the contents of the training provided for laborers so that staff developed a sound understanding of the reality of HIV/AIDS and conducted an assessment of their own potential risks and how to reduce them. This was followed by more in-depth information relevant to their work roles. The obligations of the contractor were covered in detail as well as the importance of all staff supporting HIV prevention work whether or not they were directly involved.

Step 9: Including HIV prevention in induction training for all workers

- **Rationale:** Induction training is mandatory for all workers on transport construction sites. Including an HIV component in this induction training ensures that all workers are exposed to at least some form of HIV/AIDS education, helping to offset one of the biggest problems with HIV prevention—high turnover of construction workers.
- **Responsibility:** HPT and contractors' management teams

Table 4: HIV/AIDS Work Plan Table of Section 9 of Longbai Expressway

HIV/AIDS Work Plan 2009	Project Office of Section 9 of Longbai Expressway
Objective	To provide HIV prevention knowledge and prevention skills for all management staff and laborers to reduce HIV/AIDS and sexually transmitted infections (STIs) during the road construction period
HPT members	Lu Qiming (secretary), Wu Junru (office director), Bi Zhengmao (safety officer), and Qi Xiejun (safety officer)
Person in charge	Lu Qiming
Coordinator	Bi Zhengmao
Coordinating members	Field engineers (part-time safety officers), work team leaders and work group leaders (field educators)
Information materials	Training materials, posters, pamphlets, playing cards, and condoms
Activity	
<ol style="list-style-type: none"> 1. Integrating HIV prevention knowledge into safety and technology induction for all management staff and laborers; this is to be included in the site rules and regulations 2. Including HIV/AIDS information in monthly safety meetings 3. Putting up posters and slogans with HIV prevention information around the site 4. Distributing condoms to workers 5. Informing workers about health service institutions for STI services and voluntary counseling and testing 6. Formulating the site HIV prevention policy 7. Selecting three field educators from each construction team 8. Training field educators 9. Assisting field educators to develop HIV prevention activities among their coworkers 10. Supervising field education work 11. Collecting relevant records of site HIV prevention activities 12. On-site monitoring by HPT members 	
Monitoring	
<ul style="list-style-type: none"> • Inspecting the coverage rate of HIV prevention knowledge at induction, coverage rate of site HIV prevention policy, and coverage rate of knowledge on voluntary counseling and testing and official testing places for STIs and HIV (to be done through the monthly safety meetings) • Ongoing monitoring of information, material distribution and display • Ongoing monitoring of condom distribution in the workplace and work camps • Monthly monitoring of submission of report forms by field educators • Collecting and collating relevant documents and records of HIV prevention work 	

HPT = HIV prevention team.

Source: ADB.

At the suggestion of the LBHQ, an HIV component was introduced into the safety induction training for all workers. A standard induction package was developed including basic HIV/AIDS and STI information, transmission modes, myths surrounding transmission, prevention methods, anti-discrimination messages, national policies, and VCT. HPT members also provided condom demonstrations (see Box 3).

Box 3: Recommended Practice: Including a Focus on Other Sexually Transmitted Infections

The presence of another sexually transmitted infection (STI), particularly one with open sores, can greatly increase the likelihood of HIV being transmitted during sex. Further, because HIV is spread in the same way as other STIs, the presence of an STI is a clear indicator of unsafe sexual practices. The prompt diagnosis and correct treatment of STIs is therefore important both in reducing the direct risk of HIV spread and in helping to identify people with risky behaviors so that they can be provided with appropriate education and counseling. The technical assistance team 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.

Source: ADB.



Chen Fuyou

Training for Site Management



Chen Fuyou

Training Workers in the Field

Box 4: Recommended Practice: Standardizing the Induction Training—Induction DVD

“We saw the inclusion of HIV training in induction for all workers as a very positive step. At the same time, since it is impractical to involve health professionals in all of these trainings, we were concerned about the quality, consistency, and accuracy of information. That’s where the idea of a DVD came from. We developed, field-tested, and produced the DVD specifically with the induction process in mind. It is not a substitute for interactive training, but it ensures that all workers have at least some exposure to accurate HIV/AIDS information, even in situations of high turnover, and provides a base for further activities.” (Technical assistance team member)

The HIV induction training DVD developed by the team runs for 30 minutes and combines various different training methods, including the International Labour Organization’s *Never Abandon, Never Give Up* video. The DVD was produced in Yunnan Province based on the Guangxi experience. It provides a standardized and quality-controlled introduction to HIV/AIDS that can be provided to all workers on all sites at negligible cost.

Source: ADB.

The induction approach was piloted on section 9 of the expressway, where incoming workers were gathered by the field management staff for training by the safety officer. At the end of the training, standard forms were completed by all participants to ensure all topics had been adequately covered. The participants were then provided with additional informational materials and condoms. To reinforce the training, the HPT displayed the HIV/AIDS induction contents on public notice boards and included reminders in monthly safety bulletins (see Box 4).

Step 10: Identifying and training peer/field educators

- **Rationale:** Peer education is a key strategy in HIV workplace programs around the world. Peer education involves the use of people from a similar age group, background, experience, and language to educate and inform each other about HIV/AIDS. The rationale behind peer education is that peers can strike a chord on the basis of trust and are seen as a credible source of information. Further, as they share similar experiences and challenges, they are well placed to understand barriers faced by their colleagues in adopting and maintaining safe behaviors.
- **Responsibility:** HPT

More than 80% of workers came from rural areas with limited education. Initially, it was difficult to engage them on the topic of HIV/AIDS for a variety of reasons, including the sensitivity of the topic, perceptions that it was not relevant, and limited availability of free time. This reinforced to the project stakeholders that peer education was a crucial strategy. Implementation of a peer education approach on the Longbai Expressway, however, brought two

“I come from Hunan. I am a foreman in section 9 of the Longbai Expressway. I am very lucky to be a field educator and I think this job is quite meaningful. I have brought so many brothers to work here from my hometown. I hope that I can also take them home safe. So I use the break time to talk to them about HIV prevention knowledge, and I feel very gratified when I see that they now have some understanding about transmission modes and prevention ways.”

Yan Shuangsheng, Foreman, Section 9.

problems. First, the selection of individuals to be trained as peer educators was left to the companies themselves. Often, the selection was made on the basis of who was available to attend the training rather than who would be suitable as educators. Second, many of the laborers trained left the site within 2–3 months of the training.

"It is our first time to attend these activities on the site, we like them and we learn a lot of HIV prevention knowledge easily and in a fun way."

Participant in field educator training

Recognizing these problems, the companies themselves came up with solutions. They refined the concept of peers to include work team leaders, site monitors, and group leaders. For clarity, the term field educators is used in this case study to describe this group, although they are often locally referred to as peer leaders. In consultation with the TA team, companies subsequently developed their own criteria for selection of field educators. The HPT for section 4, for example, searched for those active field management staff, work team leaders, site monitors, and group leaders with the following qualities:

1. **Had a close relationship with laborers.** Educators must have regular contact with laborers, ensuring regular opportunities for providing information and exchanging views.
2. **Were respected by laborers.** Laborers should like and trust this person and be willing to talk openly.
3. **Set an example to others.** Only if the educators realize the importance of HIV prevention and they themselves model safe behavior, can they function effectively as educators.

Field educators were trained by the TA team and HPT members using participatory methods. The training included discussion in language appropriate for the age of laborers and their education level, and an introduction to the *Health and Safety with Me* manual, specially designed under the TA for use by field educators. After the initial monitoring visit found that many educators were uncomfortable with demonstrating condom use, more emphasis was placed on this in subsequent trainings. One educator described his newfound confidence as follows:

I would begin by saying "I know most people here used condoms before, but I think only a few can use them correctly." This was my method of prodding them into action. There were always some people who came forward wanting to prove that they could use condoms correctly. Those volunteers were required to demonstrate this and explain every step. We would record their steps. If they were right, they could pass the test. And then another group would be requested to do this again. During their demonstration, if there were some mistakes, we would correct them and ask them to do it again correctly. In order to encourage them to join the activity, we would give the brave ones a prize—condoms, of course.

Once the workers were animated by this game, I could easily get them to join the role-play from the (*Health and Safety with Me*) manual on the dangers of not using condoms. They would discuss relevant issues including the possible reasons for not using condoms and the consequences of not using condoms. Only by understanding how they could benefit from condom use, would they stick to it.

Step 11: Initiating multifaceted HIV prevention activities on construction sites

- **Rationale:** HIV prevention involves a range of different activities, including dissemination of information materials, direct training, and promotion of appropriate behaviors. Initial work can be quite difficult as many workers are reluctant or embarrassed to talk about sensitive issues surrounding HIV/AIDS and sexual behavior.
- **Responsibility:** HPT and field educators

Initial HIV/AIDS prevention work on construction sites focused on raising awareness on HIV/AIDS, increasing knowledge of routes of transmission and means of prevention, and encouraging discussion. This provided the basis for further activities aimed at supporting the adoption and maintenance of safe behavior.

HPT members in section 9, for example, set their initial objective as creating an HIV prevention atmosphere in the field. They began their work by putting up bulletin boards, and displaying posters and banners at different work sites throughout the section. Bulletin boards with HIV/AIDS news were put up in places where construction workers took breaks or ate meals. Posters and slogans were placed on visible doors in the camp and on the walls of common areas. Banners were displayed on sites with a large number of construction workers and on routes to and from work. In July 2009, the monthly safety theme for section 9 was “caring life, safe production.” The HPT took advantage of this to initiate its HIV information campaign, distributing materials and initiating direct communication with workers.

In section 6, the HPT knew that the only opportunity to undertake HIV prevention activities without disrupting the construction schedules was at workers’ camps during the evening (see Box 5). A team member explains:

We knew they would be tired but also that many workers did not have any entertainment in the field in the evening, so we used educational DVDs. The combination of pictures, words, and sound was able to attract their attention and interest them in learning

Box 5: Recommended Practice: Timing of Interventions

Not only is the content of HIV prevention messages important, but also the timing. Here, an HPT member describes how messages are reinforced prior to the times workers are most likely to engage in risky behavior:

Our HIV prevention work must recognize that many workers are away for a long time so it is understandable for them to buy sex. We would prefer they did not and are actively encouraging links with spouses and girlfriends. But we also promote condom use. We have made the work team leaders in charge of HIV work, with the motto “*friend educates friend, friend watches friend*.” In summary, everybody should participate by managing themselves and caring about others. Time off for the workers is usually Sunday and Monday so we specifically include HIV topics in meetings on those days and make sure our workers have condoms. We will report to our head office and want to encourage HIV work and condom distribution nationwide.

Source: ADB.

more about HIV prevention. After watching the DVD, we would give the workers topics related to their daily life for discussion, for example: Is sharing a razor at the barber a risky behavior for HIV? Can taking a bath after having sex prevent HIV/AIDS? Can taking pills prevent HIV/AIDS? By this time, workers were no longer shy and gave their views openly, making for a lively discussion.

In turn, the animated nature of some of the discussions served to attract workers who had initially been indifferent to the sessions. This was the best time to promote condom use. Such sessions commonly took up to 2 hours, but the time always seemed to pass very quickly.

"Just like some vaccines, which you have to take three times, one-off explanations of HIV/AIDS are not sufficient. Not only must messages be repeated, but they must have enough strength to encourage workers to change risky behaviors and/or maintain safe behaviors with respect to HIV/AIDS."

Fu Huiming, Deputy Team Leader

"I finally understand what behavior change communication is."

"No matter how much you talk about it, the simple rule is to use condoms. We need to focus on this."

Quotes from road construction representatives,
Guangxi

Step 12: Integrating the monitoring of site HIV prevention work into routine safe production management

- Rationale: A strong monitoring system is a foundation for ensuring work is carried out and completed effectively.
- Responsibility: HPT and contractors' management teams

The criteria set down by the LBHQ required that HPTs adequately monitored implementation of their activities on site (see Step 2). Apart from requiring the HPT to keep adequate records, the details of how to do this were left up to the teams themselves.

The HPT of section 1–1, for example, divided the section into four areas for HIV prevention, with three field educators in each area. They integrated HIV prevention into safe production management so that safety officers in the work zone monitored HIV prevention work, and this work was discussed during monthly safety meetings and monthly safety inspections. The HPT summarized experiences and promptly refined the work plan for the following period. Basic questionnaires were developed to assess the results of the work in a timely manner.

On section 4, the HPT held a monthly meeting for field educators to report on their work, find out what they achieved in terms of the HIV/AIDS knowledge levels of construction workers, and learn what issues had arisen with regard to HIV prevention. The meetings also gave the educators a chance to renew their knowledge, collect additional materials and condoms, share experiences with colleagues, and seek solutions to difficult HIV-related problems.

Step 13: Promoting and supporting change in risky behaviors

- Rationale: Although increasing knowledge of HIV/AIDS is important, HIV prevention ultimately depends on changing people's behaviors. In particular, regular use of condoms with non-regular partners has been very effective in reducing the spread of HIV/AIDS in the PRC and abroad.
- Responsibility: HPT with field educators

Interventions against HIV/AIDS must be strong enough to stimulate positive and sustained behavior change among those at risk. Most behavior change does not happen overnight. One specialist communications firm suggests allowing 3–6 months for behavior change campaigns, which is longer than some construction workers spend on site.²⁷ The TA team worked closely with HPTs to encourage activities that specifically addressed behaviors, highlighting the importance of reinforcing messages, identifying and addressing barriers to behavior change, and considering environmental factors (see Box 6).

For example, as well as repeating prevention messages and emphasizing the importance of staying safe, the TA team worked with health providers and companies to ensure condoms were available. This was done in a variety of ways. Most workers were able

Box 6: Recommended Practice: Not Just Condoms—Piloting Mobile Voluntary Counseling and Testing

Promoting safe behaviors is not all about reducing sexual partners and/or using condoms. Encouraging workers to know their HIV status is also important so that they can take appropriate action. In particular, if they find that they are HIV positive they can access treatment and take steps to protect their loved ones.

Educating workers on the benefits of being tested and promoting HIV testing involve ensuring their access to appropriate voluntary counseling and testing (VCT) services. On the Longbai Expressway, the technical assistance team found high interest in HIV testing but also that accessing services was not always easy for those in remote work sites.

With this in mind, the team introduced the section 9 HIV prevention team to the staff at Baise Center for Disease Control and Prevention. The center offered a special mobile VCT clinic for workers seen as at risk, covering not just HIV/AIDS but also syphilis and hepatitis B. They clearly informed the workers about the testing process and asked them to sign a document confirming their agreement. In all, 49 people took the counseling service and 42 agreed to take an HIV test. Results were given confidentially. None of the 42 people who took VCT had HIV or syphilis. Five (12%) were found to have hepatitis B.

Through this successful pilot, the health workers were able to provide affordable medical testing services to mobile workers, and at the same time further publicize their HIV/AIDS work. The fact that 86% of those receiving counseling chose to take an HIV test demonstrated that it was possible to promote VCT widely in this group.

Source: ADB.

²⁷ P. Lally, et al. 2010. How Are Habits Formed: Modelling Habit Formation in the Real World. *European Journal of Social Psychology*. 40 (6). pp. 998–1009. <http://onlinelibrary.wiley.com/doi/10.1002/ejsp.674/abstract>

to purchase good quality condoms from pharmacies in cities, counties, and townships, and, thanks to an initiative by local authorities, from hotels. They could also obtain condoms from family planning medical centers. To supplement these efforts, the project provided 60,000 condoms—20,000 donated by the Family Planning Association and



Chen Fuyou

Educating Workers During Their Off Hours

Interpersonal Communication to Understand and Address Risky Behavior

Supporting safe behaviors requires an understanding of barriers to these behaviors. In particular, overconsumption of alcohol can cause people to lose their inhibitions and revert to risky behavior such as sex without a condom. Huang Huwei, safety officer of section 4, explains his strategy to identify and deal with risks:

I usually use the opportunity of safety inspection to communicate with workers, mostly about HIV/AIDS-related information. I am good at shifting the topic to HIV/AIDS during our talks. When I know that there is one worker who did not come back at night, I would request the field educator to ask the worker the reason. According to the feedback, some workers went to the entertainment places in Tianlin County and had sex with sex workers. They used condom sometimes, but not always. They were too drunk or thought that using a condom didn't feel good.

This information that there were workers going to entertainment places and sometimes having unprotected sex made us realize it was not always easy to change our target group's risky behaviors. But all things can be achieved by perseverance. I was convinced that a large number of people would change their bad life habits if we kept working on it. And we found that more and more people would change their attitude toward sexual behaviors as long as our HPT members and field educators did not give up.

40,000 purchased at cost. The companies distributed these to workers free of charge. Placement of condom vending machines on some sections was also considered, but it was difficult to find locations that provided the necessary combination of privacy and security.

Step 14: Establishing and maintaining site HIV prevention records

- **Rationale:** The collection and recording of information on site HIV prevention activities helps monitor the implementation of work plan activities and identify problems, as well as documenting progress for reporting and monitoring purposes.
- **Responsibility:** HPT

One of the challenges in HIV and transport systems is to develop a reporting system that provides sufficient feedback to assess progress without overburdening already-busy workers. At the end of phase 1, the reporting requirements for each contractor were reviewed and found to be too cumbersome. The response of the HPT from section 4 was to develop a straightforward reporting approach in four categories:

1. **Materials**—a record of information materials distributed. These included HIV prevention books, DVDs, pamphlets, posters, playing cards, banners, and condoms.
2. **Documents**—relevant site HIV prevention documents. These included the site HIV prevention policy, site work plan, and relevant HIV prevention meeting notices.
3. **Activities**—a record of site HIV prevention activities. This included meeting records, activity records, and completed induction training forms, and was enhanced by photographs.
4. **Field education**—reporting tables for field education work, combined with a monthly overview, as shown in Table 5.

Table 5: Form for Monitoring Monthly Work of Site Field Educator

Name of field educators: Li Jiang, Wang Youji, and Zhao Xiang
Date: 6 November 2008

What we have done this month

A) Field education activities

Name: Field education activities

One-to-one communication

Group discussion (2–5 persons)

Talked about HIV/AIDS in the regular meeting

Of whom, those receiving HIV/AIDS information for the first time were

Times	Participants
14	14
3	44
3	107
...	49

B) Condom distribution

Condoms distributed for free (pieces)	400:	Amount sold	0
---------------------------------------	------	-------------	---

C) An achievement this month was:

Some people who used to go to sex workers did not do that anymore.

D) Experience and lessons learned were:

The best way to develop field education was to engage the target in general chat and then follow up with HIV prevention information.

E) The biggest difficulty and barrier I met this month was:

Not enough time to contact more coworkers.

Source: ADB.

This new approach proved both manageable and effective in generating key information. It was adopted by other sites and is recommended as a format for other companies.

Step 15: Conducting external monitoring of site HIV prevention work

- Rationale: Experience on other projects has repeatedly demonstrated that contractors are more focused on their contractual obligations when they are subject to monitoring.
- Responsibility: Expressway project headquarters

The LBHQ and the TA team designed tools to allow the monitoring of HIV contract clause compliance by nonspecialists as part of routine safety monitoring. Ideally, however, monitoring should also involve quality assurance. This can be done by a special site inspection dedicated to HIV prevention work, combining road management staff and health promotion experts. A combined team has both the technical expertise to improve the quality and impact of site HIV prevention work and address any problems, and the authority to require action.

For the HIV/AIDS Prevention in the Transport Sector in Yunnan and Guangxi Project, the monitoring team consisted of an LBHQ representative, an expert from the local Center for Disease Control and Prevention (CDC), and a member of the project team. Sections were assessed based on the monitoring indicators highlighted in Table 2 (p. 16), using the following methods:

- listening to a brief report from the HPT and discussing key issues, successes, and constraints;
- consulting relevant records of site HIV prevention activities;
- going to the field to inspect the visibility of HIV materials; and
- spot interviewing workers to assess the coverage and effectiveness of site HIV prevention publicity and training activities, as well as the skill of correct condom use.

Each site received a grade and a brief report: excellent (90 points), very good (80 points), good (70 points), satisfactory (60 points), and unsatisfactory (less than 60 points). All sections were expected to take prompt action to address problems identified in the report.

3.3 Working with Communities and Entertainment Sites

In line with ADB's *Practice Guidelines for Harmonizing HIV Prevention Initiatives in the Infrastructure Sector: Greater Mekong Subregion* and drawing also on experience of the Baolong Healthy and Safe Action (BHSA) Project, the project team took a settings approach to HIV prevention. This involved complementing work on construction sites with activities in entertainment venues and communities near the expressway. The nature of appropriate HIV prevention programs in communities and entertainment sites associated with transport development is affected by a range of contextual factors such as the features of the HIV/AIDS problem, preexisting levels of HIV/AIDS knowledge among the local population, existence of local responses (including availability of services), and the capacity of local organizations responsible for the issue. In the case of the Longbai Expressway, for example, the project benefited significantly from links with the local CDCs, which were already implementing HIV prevention activities with a focus on entertainment sites.

Table 6: Comparison of Results of Site Monitoring and Evaluation of Longbai Expressway

Section	Excellent	Very Good	Good	Satisfactory
1-1	●			
1-2	●			
2-1 and 2-2				●
4	●			
5			●	
6		●		
7		●		
8		●		
9	●			
10	●			
11	●			
12	●			
13			●	
14		●		

Source: ADB.

Sample Site Monitoring Correction Report: Section 10

The rate of including HIV prevention-related information at induction did not reach 100%.

1. The proportion of incoming managers and workers receiving HIV/AIDS-related information in the safety and technology education at induction should reach 100%. Section.10 did not carry out this work fully, so the proportion only reached 80%. The reason was that when the HPT held HIV induction training at the work camp, some workers had extra work, and some were not on site. In addition, some construction teams hired local occasional laborers and their names were not reported to safety officers in a timely manner. To avoid this problem, follow-up should be done by the part-time safety officers in the respective work areas, ensuring that the incoming site laborers are 100% covered for induction training.

There is a need to strengthen the field educator team.

2. Because of the frequent change of construction teams, the field education training should be strengthened. The HPT should pick one or two responsible persons with secondary school education or higher from the incoming work team leaders, monitors, or group leaders to attend the field education training. The field educators should make use of their working time and break time to discuss HIV/AIDS information and attitudes and exchange views with each other. This should help the workers accept the information more quickly and the result will be positive.

The correct use of condoms needs to be promoted to increase the prevention skills of site managers and construction workers.

3. When the HPT members and field educators undertake the HIV prevention work, they should make a special effort to do an effective condom demonstration and provide a clear explanation. (They should use the field educators' *Health and Safety with Me* manual as a reference.)

Requirements from the monitoring team.

4. It is required that section 10 should implement and perfect the HIV prevention work after receiving these recommendations from the monitoring team. The improvement report should be handed over to the Longbai Highway HIV prevention project office on 15 April 2010. Please finish all work on time.

Source: ADB.

As there are many existing resources on designing and implementing HIV/AIDS activities in communities and entertainment sites, this section only outlines the experience from the Longbai Expressway and highlights issues relating to the road construction context.

HIV Prevention in Nearby Communities

The potential HIV/AIDS implications for communities surrounding road construction vary from place to place. Where road construction sites are located in or near existing communities, for example, workers are more likely to interact daily with the local communities. As a result, there is considerable potential for developing sexual relations between workers (usually men) and local community members (usually women). In many instances, particularly in remote areas, mobile workers are likely to regard local women as safe from HIV and therefore do not see the need for using condoms. This can place the women at high risk.

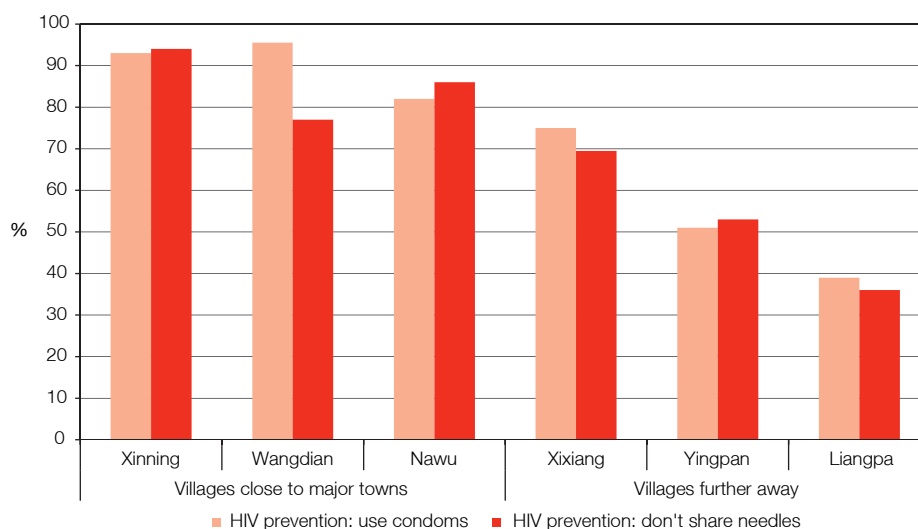
There are also longer-term implications for communities after roads are completed, particularly where these roads open up previously remote areas, exposing local community members to new ways of life. The growth of the sex trade following completion of a new road has already been clearly documented in neighboring Lao People's Democratic Republic, for example (footnote 1). Further, long-distance truck drivers are frequently identified as among the most at-risk populations. It is important for health authorities to be aware of the need to plan for these issues, which are generally accepted to fall outside the scope of road construction companies.

Knowing that the potential HIV risks of the expressway would extend beyond the period of project construction, the TA team considered it important to work closely with local authorities. Six communities were chosen for phase 1 of the project. They were close to the existing phase 1 work sites, making them both high priority and relatively easy to approach. HIV prevention teams were formed in these communities, comprising village leaders, the Party secretary, family planning staff, women's representatives, and the local clerk, who was in charge of report writing. A baseline study was carried out and revealed major differences in knowledge levels based on distance from a major town along the expressway (Figure 2). The study findings highlighted the potential vulnerability of people in remote communities as exposure to the outside world increases.

The activities supported by the TA in the communities focused primarily on awareness raising. In this regard, good use was made of public events such as markets and festivals. HIV information was included in folk songs, and in one community, a basketball competition for youth was held and used to promote HIV knowledge. The contractors from sections 8 and 9 sent teams to join the competition, and the section 8 contractor provided financial support. This is a good example of how construction contractors cooperated with surrounding communities on HIV prevention. The work was subsequently expanded to three additional communities in phase 2 of the TA.

In phase 2, the section 4 contractor took support for HIV prevention in communities a step further. In November 2009, the major building work was nearing completion and construction workers were about to leave, necessitating a review of HIV prevention activities. At this point, 90% of remaining construction workers were local people and the

Figure 2: HIV Prevention Baseline Knowledge Levels (%)



Source: Asian Development Bank. 2011. *HIV/AIDS Prevention in the Transport Sector in Yunnan and Guangxi, People's Republic of China*. Consultant's report. Manila (TA 6321-7-PRC).

HPT identified this as a good opportunity to expand the impact of HIV prevention work. They provided leaflets with HIV prevention information to local construction workers, asking them to distribute these to community youth and to take the opportunity to pass on what they had learned. In this way, local construction workers became educators for their neighbors, at the same time strengthening their own knowledge.

While some aspects of the community program were very encouraging, particularly the use of existing events and the cooperation with the construction sites, a number of constraints were also noted. Low knowledge rates among some local officials led to a lack of stronger commitment, while the HIV prevention teams encountered indifference from some community members who felt the threat of HIV was very remote, and fear from others who did not want to participate in activities. HPTs also complained of limited funding and lack of ongoing support after the project was completed. As such, working through existing channels was not able to ensure sustainability.

The International Federation of Consulting Engineers (FIDIC) HIV clause recommends that contractors hire a suitably qualified and approved service provider (either a local health

authority or a nongovernment organization) to undertake work in communities. The TA team was reluctant to follow this recommendation, believing that the proposed approach was not necessarily replicable across all expressway projects. Further, contractors cannot realistically

"We are encouraging construction workers to use condoms with entertainment workers. The Center for Disease Control and Prevention is encouraging entertainment workers to use condoms with construction workers. That has to be good."

Road construction company representative,
Guangxi

be expected to fund activities following completion of their construction work.²⁸ More consideration is needed of how to best address the needs of communities in this context; the responsibility of contractors; and the best ways in which this work can be funded, taking into account its long-term nature.

HIV Prevention in Entertainment Sites

As noted earlier, the project was fortunate that local CDCs were already implementing HIV prevention programs in entertainment sites in the project areas. The TA therefore worked within existing initiatives, providing additional resources for the CDCs to expand their activities to cover projected increases in the sex trade from increased demand related to an influx of male migrant workers.

"The construction of bridges and expressways should benefit the local people and there is no doubt that this is an important way to improve their lives. But we must pay attention so that it does not also lead to bad impacts such as increased transmission of diseases, especially HIV/AIDS. With great support from ADB and Longbai Expressway headquarters, the project team has developed effective large-scale HIV prevention publicity and education programs. Other construction projects without support from ADB can learn a lot of lessons from this project."

Guangxi Communications Department

The CDCs reported in the final project meeting that this support was very important as several new entertainment venues had been established near road construction sites, placing pressure on existing resources. With ADB support, 31 site-based training sessions were undertaken, covering more than 500 participants, and there were 11,000 contacts with sex workers during the period of the outreach activities. Indications were that the work was very successful. During this meeting, the CDCs also reported that the proportion of sex workers that did not regularly use condoms fell from 13.8% to 6.7% over the project timespan, while the sexually transmitted infection (STI) rate fell from 10.2% in 2008 to 4.9% in 2009.

There was firm agreement among all stakeholders in Guangxi that delegating responsibility to the CDCs for HIV prevention in entertainment settings linked to infrastructure had proved an effective approach and that construction companies could not be expected to take this role. For future projects, it is strongly recommended that this role is contracted out to the local health authorities or another appropriately qualified health service provider, such as a nongovernment organization. Where local organizations are not adequately trained, some form of additional investment may be necessary.

²⁸ The World Bank has amended its version of the FIDIC clause to remove responsibility of the companies for HIV prevention during the defects notification period.

4 Adaptation and Expansion

Transport construction projects vary considerably in different parts of Asia. In some cases, such as the Longbai and Wukun expressways, the work is on closed expressways, replacing existing routes. In other cases, roads open up previously remote areas. Road management systems, including safety systems, vary from location to location, as do the profile of workers, the state of the HIV epidemic, and the extent and quality of surrounding health services.

"This TA is the first project to find a viable approach for HIV prevention associated with expressway construction in Guangxi, maybe even in the PRC. ADB initiated and supported this project, and promoted HIV prevention knowledge and behavior intervention methods, with strong and satisfying effects."

Chen Rucheng (Allain), Deputy Chief
Supervision Engineer
of Longbai Expressway headquarters

These considerations highlight the importance of avoiding a purely prescriptive approach to HIV prevention in the transport sector. Indeed, it was not possible to directly replicate all aspects of the Guangxi approach in Yunnan Province, even within the same TA package. The TA did, however, identify some common themes that the team believes hold across most HIV and transport projects. This section begins by highlighting these themes and then looks at the adaptation of the approach piloted in Guangxi in other contexts, in neighboring Yunnan Province, and farther afield in Mongolia.

4.1 What Can Be Replicated?

A key objective of the TA was to develop, pilot, and refine approaches that could be adapted more widely in the transport sector. At the completion of the project, the TA identified six key themes that could be applied in different contexts. They also noted some issues of concern, which are covered in Section 4.2.

1. Thinking about sustainability from the outset

The TA team already knew quite a lot about HIV interventions in a transport context. Two team members had worked on the Baolong Healthy and Safe Action (BHSA) Project, which had proved very effective. The key was to adapt the approaches from the BHSA project so that they could eventually be taken forward locally. From the beginning, the TA team focused on the question "could the approach being developed here be replicated elsewhere without external funding?"

One example was materials. As part of the program, the TA team produced a dedicated field educators' guide and an induction DVD because the existing materials did not meet the project needs. But all the other materials were obtained either free of charge or at

low cost. Posters were obtained from a range of sources, and suitable ones were copied where there were not enough. A set of playing cards produced by the International Labour Organization (ILO) with HIV information was reproduced, placing the TA project's own design on the back, with ILO permission.

2. Ensuring close communication

Close communication between road construction companies and health service providers was the key to meeting the aims of HIV prevention without impeding the core goal of building safe roads within the allocated budget and time frame. One obvious example was the scheduling of activities to avoid peak work periods but still be able to reach as many workers as possible. It was also important for construction management to understand the basic principles of HIV prevention, in particular that activities must go beyond information provision and that HIV prevention efforts must be ongoing. It was useful also for both parties to cooperate on the selection of field educators to ensure those chosen had the personal attributes necessary to become effective educators.

3. Building interventions into existing processes

As highlighted throughout this case study, opportunities exist to integrate HIV prevention into existing work practices and processes. At a management level, this includes incorporating HIV under an existing structure, such as occupational health and safety, and building HIV-related activities for senior staff into other events. At an activity level, many opportunities for HIV education exist—induction trainings for all workers, site meetings, safety trainings and talks, and monitoring trips that occur day-to-day at the work site. Further, informal education activities can be organized during breaks or over meals. If workers are being bused to a site each day, it might be possible to use this time for education as well.

4. Placing strong emphasis on monitoring

Building monitoring criteria into the existing safety system was essential. Because safety was taken seriously, it forced contractors to focus on the HIV/AIDS requirements. Although the inclusion of HIV clauses in road construction contracts has been a positive step, they have often been ineffective in the past due to lack of monitoring. In some projects, contractors were not even aware of the clauses.

5. Defining contractual obligations in a set of core steps

Both company compliance with HIV contract clauses and monitoring of this compliance will be greatly facilitated if the requirements for HIV prevention can be divided into a series of concrete steps, as illustrated by this case study. If these steps are not included in the contract clauses themselves, they can be articulated in a separate document.

6. Identifying the areas in which HIV-prevention expertise was essential and those where the contractors could do the work themselves

The advisory materials the TA team had seen on HIV in the construction industry prior to this TA contained different messages about the involvement of specialist HIV expertise. Some insisted that all work should be contracted to an approved service provider, an approach the team considered may create a cost deterrent and therefore possibly not be replicable. Others suggested that contractors could undertake a full HIV prevention program without outside assistance, raising concerns about effectiveness.

The team therefore sought to find a middle ground, identifying the areas where specific HIV-prevention expertise was essential, where it was desirable and where work could be done effectively by contractors themselves.

4.2 Adapting to Different Contexts: The Program in Yunnan Province

The Yunnan Provincial Department of Transport (YPDOT) has been assigned responsibilities in HIV and drug prevention under the Migrant Workers Action Plan, part of Yunnan Province's 10-point HIV Prevention and Treatment Plan. The action plan recognizes the growing importance of migrant workers in combating HIV and places responsibility on the YPDOT to incorporate

"Our work can be summed up in one word: change. Change in the mind-set and knowledge of the HIV prevention team, which is now able to conduct training and other HIV/AIDS activities during routine meetings. Change in the confidence of the prevention team, which is comprised mainly of young women, in dealing with male construction workers. Change in the attitude of workers to condoms—from shyness to actively requesting them. There is also less shyness in talking about the issue. Our work needs to continue, especially in view of high turnover of workers. We hope that outgoing migrants would be able to spread knowledge on new sites."

Contractor representative, Yunnan Province

HIV prevention knowledge into training for migrant road construction workers. It sets clear targets in terms of knowledge and behavior, to be achieved with technical support and monitoring from the Yunnan Provincial Bureau of AIDS Prevention and Control. The YPDOT has established an HIV prevention working committee to coordinate efforts to meet these requirements.

The strong regulatory requirement for the YPDOT's involvement in HIV prevention was one of two distinguishing characteristics of Yunnan's response. The other was that the department contains a hospital, the Yunnan Central Transport Hospital, which provides the YPDOT with in-house expertise on HIV/AIDS, as well as on wider health issues.

HIV prevention work on the Wuding–Kunming (Wukun) Expressway commenced almost 2 years after HIV prevention activities began on the Longbai Expressway. During this time, members of the YPDOT visited the Longbai Expressway on several occasions, enabling them to draw on that experience. HIV prevention work on the Wukun Expressway followed a similar approach to Longbai with the following modifications:

1. **Different structures were used.** Yunnan Province followed the Guangxi principle of integrating HIV prevention into existing work process but modified the practice to fit the local structures. Rather than work through the safety management system, the TA team worked with the general administration system as its terms of reference already included health. In addition, the administrative officers had a liaison role with local communities, facilitating links with community HIV prevention activities.
2. **Wider health concerns were addressed.** Ready access to the Yunnan Central Transport Hospital enabled HIV issues to be incorporated as part of wider health concerns, something that had been previously advocated by ADB staff. At the request

of training participants, issues covered ranged from dental health to alcohol to high blood pressure. A more multifaceted training program was not only useful for the workers but also helped increase the acceptability of the work to the contractors.

3. Innovative approaches were used.

A feature of work on the Wukun project, developed by the contractors themselves, was an acknowledgment that demand for paid sex is, in part, a consequence of long-term separation from spouses and partners. Several contractors

placed an emphasis on encouraging workers to bring their spouses with them to the site, or at least maintain strong contact, including increasing home leave entitlements. The contractors were particularly conscious of the behavior of work team leaders as role models for their work teams and paid special attention to education activities with this group.²⁹

Through our company's work, the knowledge rates have increased. Now we think HIV prevention is as important as safety because we recognize that project office staff are potentially at risk. Managers, especially, go out often and also drivers and work team leaders with access to vehicles. We are encouraging work team leaders to come to the work site with their wives—otherwise they will 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.

Contractor representative, Yunnan Province

4.3 Adapting the Proposed Approaches Outside the People's Republic of China: Mongolia

Toward the end of the TA, a delegation of health and transport officials from Mongolia visited the two project sites to share experiences. The visit shed light on the applicability of the approaches in the PRC to a different country context. One immediate constraint noted by the Mongolian delegation was that, while the Guangxi team had successfully

integrated HIV into well-established health and safety programs, in Mongolia the existing health and safety programs were weak. Further, with a highly dispersed population, Mongolia lacked VCT and STI service coverage. The delegation was thus very interested in the idea of mobile services piloted on the Longbai Expressway project.

"My company is based in Hunan Province. The HIV situation there is not very serious, so at the beginning I was surprised at the attention because I thought it was not necessary. But then the team from Mongolia came to visit and learn from our experiences in the PRC. This helped me realize how serious this issue was."

Contractor representative, Yunnan Province

²⁹ Along similar lines, companies might consider placing more emphasis on employing labor locally, to reduce the number of unaccompanied men on work sites. Another example of an approach that could indirectly reduce risk is arranging for a significant proportion of a migrant worker's pay to be sent directly home, both reducing disposal income which may be used for alcohol, sex, and/or gambling, as well as providing increased security for workers' families at home.

Another relevant aspect of the visit was the discovery that many of the transport construction workers in Mongolia are from the PRC. The team was thus able to share not just experience but also materials. Many of the materials gently emphasize the worker's responsibility to their family in terms of not bringing home HIV. This is a strategy that has been proven effective elsewhere as many workers are more concerned about their families' health than their own. The Mongolia delegation has subsequently been able to take another step forward, securing a ministerial order for the inclusion of HIV clauses in all road construction contracts nationally—not just those funded by international donors—and Mongolia has developed its own recommended package of activities based largely on the framework described in Chapter 3 of this case study.

4.4 Outstanding Issues

Although the TA team was able to make great strides in many areas, a few points of concern remained with regard to adoption of the proposed approaches, particularly in situations where no additional support is available through TA. These are briefly discussed.

Knowing Your Epidemic: How Accurate Is Behavioral Data?

To respond effectively to HIV/AIDS, it is important to understand the key risk factors that underpin the epidemic in different contexts. One way of getting additional information is through research studies. Some practitioners, however, question the value of such surveys. Mining company Anglo Gold, for example, which deals with many issues similar to those faced by construction companies, considers that one of the reasons for the success of its program is that it spent “less time and money on the risk assessment analysis, which is costly and can produce unreliable estimates, and more resources on acting.”³⁰

Two specific concerns are the validity of self-administered questionnaires and the willingness of respondents to provide accurate information on their sexual behavior, a highly personal issue. Various research studies have found incompatible responses between construction workers and sex workers on the extent to which the construction workers visit sex workers and the degree to which they use condoms when they do so.³¹ Responses to questions on the extent of unprotected casual sex may also be understated in baseline studies due to embarrassment and also in endline studies as respondents know they are not supposed to be engaging in these behaviors.

It seems clear that well-administered surveys are much more likely to produce accurate information on knowledge and attitudes than on behaviors. Based on its experience, the project team considers that a short, simple survey on knowledge and awareness can be useful both in assessing key areas of focus for educational activities and materials, and also for measuring change over time. This can be complemented by other techniques

³⁰ Anglo Gold. Quoted in J. Thomason and L. Richie. n.d. *Mining Sector Public-Private Partnerships for Health*. JTA International. p. 3.

³¹ See, for example, Pact. 2011. *Baseline HIV Risk on Highway 1A in Ca Mau, Vietnam: Knowledge, Attitudes and Practice Related to HIV Prevention Among Construction Workers, Female Sex Workers and General Residents*. World Bank: Washington, DC.

such as focus group discussions and observation to provide insight into attitudes and behavior. (ADB's *More Safety* manual provides a straightforward explanation of how to apply these techniques.)

Evaluating Impact

This case study has highlighted how monitoring of activities, together with some form of quality assurance, can realistically be built into most HIV and transport responses. This will help ensure that planned HIV prevention activities have taken place and that construction companies have complied with contractual obligations, where these exist. This is very important, but it does not guarantee an impact of these activities on knowledge or, in particular, on behavior, which is the key determinant of the success of an HIV prevention program.

At a project level, changes in knowledge, attitudes, and behavior can potentially be assessed through baseline and follow-up surveys, as was done by the HIV/AIDS Prevention in the Transport Sector in Yunnan and Guangxi Project, ideally complemented by supporting information such as the number of condoms distributed or sold. As noted, however, collecting reliable information on highly sensitive topics, such as sexual behavior, is not easy. Trained researchers and data analysts are needed to improve the likelihood that such behavioral studies yield accurate results. This can be both difficult and expensive, particularly in remote areas.

An alternative, or complement, to the project-based approach is to further integrate HIV and transport programs into provincial and national evaluation systems and processes, such as second-generation surveillance surveys. These combine data on prevalence of HIV/AIDS and other STIs, with research on knowledge, attitudes, and behaviors among selected groups. Given the dearth of existing data throughout Asia on the specifics of the relationship between the AIDS epidemic and transport infrastructure, as well as on the relative effectiveness of different prevention programs, it is recommended that governments in the region consider identifying strategic transport development sites and incorporate these into national HIV surveillance systems. At the same time, on occasions when evaluation work is built into HIV and transport programs, aligning this work with national systems in terms of questions, indicators, and methodology can add to the overall knowledge base.

Adapting to Situations where Fewer Services Are Available

Two key components of an effective HIV prevention package are encouraging workers to seek prompt treatment for STIs, and promoting voluntary testing and counseling. In reality, however, these services are not always available, particularly in remote settings. Even medical practitioners on the Baolong Expressway were found to have insufficient ability to accurately diagnose and treat STIs, for example. Privacy can also be an issue in both STI treatment and VCT. In these circumstances, it can be ineffective or even counterproductive to encourage workers to seek out these services.

Solutions to this problem are perhaps best found on a case-by-case basis. If health clinics exist close to key sites, for example, contractors could consider supporting training for

medical staff.³² Another option is to negotiate with health providers to strengthen STI and VCT services. In some circumstances the option of mobile STI and VCT teams, as successfully piloted in the HIV/AIDS Prevention in the Transport Sector in Yunnan and Guangxi Project, could be considered.

Technical Support

The constraints on replicating the approach piloted in Guangxi are not primarily financial. Based on estimates developed under the BHSA project, the annual cost of implementing the activities proposed in this document would be in the order of \$5–\$10 per worker, less than 1% of the total safety production budget for the road.³³ However, technical support is required for effective implementation. This is recognized in both the original International

"I would like to say that we are very willing to work on this issue but are not professionals so we would like to request ongoing technical support."

Transport company representative,
Yunnan Province

"It's hard to say what will happen when the ADB project finishes in future. At the beginning, workers were against learning about HIV/AIDS. They thought that they didn't have the disease so wondered why they had to learn about it. Now it's better when there is the project that is directed by Ms. Fu. Furthermore, this project is also very instructive for us. We may do it ourselves in future but may not get so good an effect."

Xie Yan, Longbai Expressway
project headquarters

Federation of Consulting Engineers (FIDIC) contract clauses, suggesting the involvement of an approved service provider, and in the steps developed under the TA. The TA team itself contained specialist HIV expertise and also benefited significantly from close cooperation with the Baise Center for Disease Control and Prevention in particular.

Such support is not always available, however, particularly given the competing priorities faced by many health service providers and the remoteness of many road construction sites. In Yunnan Province, the YPDOT was able to make good use of the in-house expertise available from its hospital. Departments without such expertise may consider bringing in expertise in the form of a small HIV/AIDS unit. These are likely to be economies of scale if the unit provides assistance across many different transport construction projects.

Dealing with Other HIV Risk Factors

This package of activities has been designed specifically to address risk factors faced by male migrant workers in relation to unsafe sex with non-regular partners. The TA team is confident that sound implementation of approaches outlined in this document will help reduce the HIV risk for those involved. At the same time, the team has strong doubts about whether the approaches outlined could be extended to address other aspects of

³² Even though building local capacity in this area appears outside the scope of the transport sector, the FIDIC guidelines require companies to "provide for STI and HIV/AIDS screening, diagnosis, counseling, and referral to a dedicated national STI and HIV/AIDS program."

³³ ADB and Marie Stopes International. 2008. *More Safety: A Resource Manual for Health and Safety in Infrastructure*. Manila. p. 35.

the AIDS pandemic, notably the complex issue of drug use, which requires extremely specialized expertise, or the highly sensitive issue of men who have sex with men.³⁴

The Post-Construction Period

The potential HIV/AIDS consequences of transport infrastructure do not end with the completion of construction. The HIV implications of transport operations can be significant, particularly where the new transport routes open up previously remote areas. As noted, the growth of the sex trade following completion of a new road has already been documented in neighboring Lao People's Democratic Republic, and long-distance truck drivers are frequently identified as being among the most at-risk populations (footnote 1). It is important for health authorities to be aware of the need to plan for these issues, which are generally accepted to fall outside the scope of transport construction companies. This is recognized by the World Bank, for example, which is removing from its HIV contract clauses reference to the defects notification period, which places obligations on contractors beyond the end of construction.

4.5 Building on the Experiences and Lessons

Since the completion of this project, the Government of the PRC has introduced a contractual requirement for all transport construction companies to include HIV/AIDS awareness activities as part of their health and safety obligations. This affects all new road construction projects in the PRC. As such, it represents a significant step forward in terms of sustainably integrating HIV prevention into transport infrastructure development. At the time of writing, however, the government has not provided further guidance as to what is required of companies in order to fulfill this obligation or on how compliance should be monitored.

This would appear to be a logical and important next step, and the package of activities, as described in this case study, offers a potential starting point for the development of such guidance. It has already been successfully implemented along the Longbai Expressway, and contains tools and approaches not just for implementation of activities but also for monitoring. As detailed in the previous section, the case study has also highlighted where more work needs to be done in addressing outstanding issues, particularly in terms of evaluating progress and effectiveness.

³⁴ The YPDOT is involved in drug prevention work alongside its HIV prevention work. There are particular subtleties to discouraging drug use while at the same time applying harm reduction strategies to reduce the risk of injecting drug use leading to HIV infection. It is unrealistic to expect transport departments to develop the necessary capacity in this area.

Implementing HIV Prevention in the Context of Road Construction

A Case Study from Guangxi Zhuang Autonomous Region in the People's Republic of China

This case study documents HIV prevention work on the Longbai Expressway in Guangxi in the People's Republic of China. It describes how to build HIV prevention into existing processes in road construction projects. It also highlights opportunities and constraints for HIV prevention work in the transport context. Finally it brings examples to show that the basic model can be adapted and replicated.

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