

Development and implementation of a cross-border HIV prevention intervention for injection drug users in Ning Ming County (Guangxi Province), China and Lang Son Province, Vietnam

Theodore M. Hammett^{a,*}, Don C. Des Jarlais^{b,1}, Wei Liu^{c,2}, Doan Ngu^{d,3},
Nguyen Duy Tung^{e,4}, Tran Vu Hoang^{f,5}, Ly Kieu Van^{g,6}, Meng Donghua^h

^a *Abt Associates Inc., 55 Wheeler Street, Cambridge, MA 02138-1168, USA*

^b *Edmond de Rothschild Foundation Chemical Dependency Institute, Beth Israel Medical Center, 1st Ave at 16th Street, New York, NY 10003, USA*

^c *Guangxi Center for HIV/AIDS Prevention and Control, 80 Taoyuan Road, Nanning 530021, China*

^d *International Cooperation Department, National AIDS Standing Bureau, 41 Nguyen Dinh Chieu Street, Hanoi, Viet Nam*

^e *General Planning Department, National AIDS Standing Bureau, 41 Nguyen Dinh Chieu Street, Hanoi, Viet Nam*

^f *Family Health International, 30 Nguyen Du Street, Suite 201, Hanoi, Viet Nam*

^g *Lang Son Provincial Health Service, 50 Dinh Tien Hoang, Lang Son, Viet Nam*

^h *Ning Ming County Health Department, Ning Ming City, Guangxi, China*

Received 12 January 2002; received in revised form 29 July 2003; accepted 29 July 2003

Abstract

This paper describes the background and early implementation of a peer-based HIV prevention intervention involving social marketing of sterile needles and syringes for injection drug users (IDUs) in a border region of northern Vietnam and southern China. Peer educators collect and safely dispose of used needles and syringes and provide IDUs with a choice of new needles/syringes or vouchers redeemable in pharmacies and clinics for new needles/syringes. The project arose from a pattern of changing drug use and increasing HIV infection in the region but its development took 4 years and faced many challenges. Implementation of the intervention posed a new set of challenges for the participating health departments, police, peer educators, pharmacists, injection drug users, and the communities at large. Early implementation of the project has revealed successful multi-sectoral collaboration, and broad acceptance by IDUs of pharmacy vouchers and distribution of new needles/syringes. However, IDUs' persistent fear of the police, particularly in Vietnam, has required reliance on separate collection by peer educators of used needles/syringes and distribution of pharmacy vouchers and new needles. In China, new needles/syringes and vouchers are largely being provided through exchange. Understanding the development and implementation challenges and the strategies that were successful in overcoming them (including the importance of being flexible and adaptable to contextual factors) may be useful to those interested in launching similar, much-needed interventions in other parts of the world.

© 2003 Elsevier B.V. All rights reserved.

Keywords: Injection drug users; HIV; AIDS

Background

The intertwined epidemics of injection drug use and HIV/AIDS are well known and have been documented in more than 100 countries on every continent (Ball, Rana, & Dehne, 1998). However, the problems posed by injection drug use and HIV infection are particularly challenging in border regions where geopolitical sensitivities may exacerbate already difficult issues.

One such region is the border between northern Vietnam and southern China. Fig. 1 shows the location of the

* Corresponding author. Fax: +1-617-349-2734.

E-mail addresses: ted.hammett@abtassoc.com (T.M. Hammett), dedesjarla@aol.com (D.C. Des Jarlais), gasc@public.nn.gx.cn (W. Liu), Fhi-nasb@netnam.vn (D. Ngu), Tung_vn@yahoo.com (N.D. Tung), Hoang@fhi.org.vn (T.V. Hoang).

¹ Fax: +1-212-387-3897.

² Fax: +86-771-5316432.

³ Fax: +84-4-974-1563.

⁴ Fax: +84-4-974-1572.

⁵ Fax: +84-4-943-1829.

⁶ Fax: +84-25-875456.

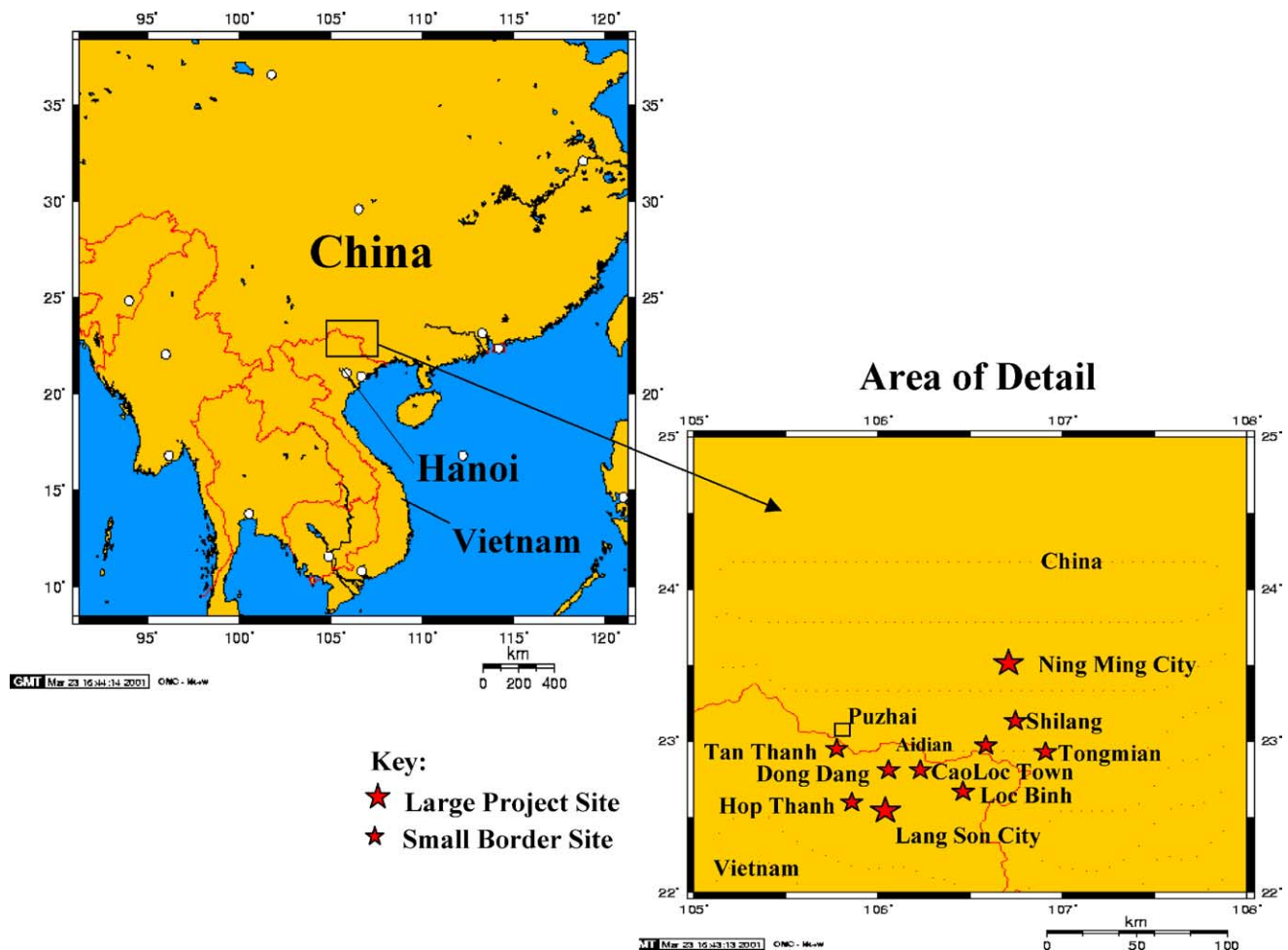


Fig. 1. Geographic setting of the cross-border project.

cross-border project described in this paper. Complex patterns of cross-border movement have combined to produce serious problems of drug use-related HIV infection and a situation ripe for collaborative interventions. These include increased heroin injection, sharing of injection equipment, and rising HIV infection along drug trans-shipment routes, and small-scale movement of drug dealers and users across the long, mountainous, and highly porous border.

This peer-based intervention involves social marketing of sterile needles and syringes to injecting drug users (IDUs) (employing a combination of direct distribution, exchange, and pharmacy vouchers) and the collection and safe disposal of used needles and syringes. Researchers have found that IDUs in Guangxi Province, China and in Vietnam are receptive to such interventions (Quan et al., 1998; Yap, Wu, Liu, Ming, & Liang, 2002).

This paper describes the background, development, and early implementation of the cross-border project. Subsequent papers will report on baseline surveys of IDUs and community members and the outcomes of the interventions as reflected in follow-up surveys.

Drug trans-shipment routes

Beyrer et al. (2000) described heroin trans-shipment routes in South and Southeast Asia. One route leads from the Golden Triangle of Thailand, Myanmar, and Laos, a leading heroin producing region, into northern provinces of Vietnam, thence into Guangxi Province, China to Nanning, the provincial capital, and finally to Hong Kong and the world. With the increasing availability of heroin along trans-shipment routes, traditional opium smoking gave way to smoking and inhalation of heroin and often quickly to heroin injection, largely because of the cost-effectiveness of this method.

Most heroin injectors are poor people who often cannot afford new needles and syringes despite their widespread and cheap availability in pharmacies or cannot gain access to pharmacies at night when they need to obtain needles. These circumstances resulted in pooling of resources among users, sharing of injection equipment, and thus to increased transmission of HIV and hepatitis C virus (Hoang et al., 2001; Lai et al., 2000; Nguyen et al., 2002; Tung et al., 2001; Vinh, 2002; Yap et al., 2002).

In Guangxi Province, China HIV spread along drug trans-shipment routes. HIV prevalence among IDUs in southern China is highest in Yunnan Province to the west of Guangxi, where HIV prevalence among IDUs is as high as 75% (UNAIDS, 2000). The epidemic in Guangxi has not yet reached these proportions. In Pingxiang, near the Vietnam border, about 20% of IDUs are HIV infected (Lai et al., 2001), while in Ning Ming County, the baseline prevalence in our project sites is 18% overall—12% in Ning Ming City and 20–30% in the smaller sites closer to the border (GX AIDS, unpublished data, 2002). There are about 1300 registered IDUs in Ning Ming County, but the real number is thought to be substantially higher, perhaps 2500–3000.

On the Vietnam side, HIV prevalence among IDUs had reached very serious proportions in provinces to the east of Lang Son by 1998—65% in Quang Ninh and as high as 74% in Hai Phong (Chu et al., 2000; Hien et al., 1999; Nguyen, Hoang, Pham, & Detels, 2001; Quan et al., 2000). In Lang Son, the number of HIV infections increased sharply from 1995 to 2001 with a cumulative total of over 1300 by the end of 2001. About 80% of new HIV infections occur among IDUs, of whom there are about 2500–3000 in the province. Our baseline survey of IDUs revealed 46% HIV prevalence across all Lang Son project sites, much higher than the rates in Ning Ming County.

Molecular epidemiology suggests that HIV spread across the border from Vietnam into China. Beyrer and others (Beyrer et al., 2000; Kato et al., 1999; Shao et al., 1998; Yu, Chen, & Shao, 1998; Yu et al., 1999) identified matching strains of subtype E on both sides of the border, a strain hitherto commonly found in Vietnam but not in other parts of China where subtype C predominates. This pattern supports the hypothesis that subtype E entered southern China from northern Vietnam. The discrepancy between the baseline HIV prevalence in the Ning Ming sites and the Lang Son sites suggests the potential for additional cross-border HIV transmission.

Small-scale movement of dealers and users

The HIV epidemic in northern Vietnam and southern China is fuelled by complex patterns of small-scale cross-border movement of drug dealers and drug users. The 200 km border between Guangxi and Vietnam is largely mountainous and remote. There is only one official crossing and about five “semi-official” crossings where one can pay a small fee (about US\$ 0.15) to cross. Otherwise, the border is essentially open. During site visits, we observed hundreds of people crossing in both directions at semi-official gates in the course of a half hour with no intervention or supervision. Drug users and dealers reportedly cross the border frequently.

The mobility patterns are variable, influenced by current price and purity of heroin and the ebb and flow of law enforcement activity. Formative research and subsequent interviews with project peer educators reveal that heroin tends

to be purer and cheaper in Vietnam than in China. Thus, Chinese users reportedly cross into Vietnam to buy and use the drug. However, tightening of law enforcement and other market shifts in Vietnam have occasioned changes, whereby dealers from Guangxi (including those from as far away as Nanning) cross into Vietnam to buy larger quantities of heroin for resale back in China. Market and law enforcement changes have also made it difficult for Vietnamese users to buy small quantities of heroin for their own use in Lang Son, so they often cross into Ning Ming County, China to buy and use. In Aidian, a project site right on the border, about one-third of the respondents to our baseline IDU survey were Vietnamese. One of the peer educators reported that 10–20 Vietnamese IDUs regularly come to Aidian to buy and use heroin. Vietnamese sex workers are also common in Chinese communities along the border.

There is also a great deal of legitimate trade and migratory employment in the region. Lang Son City, Aidian, and Puzhai (near Pingxiang) are bustling centers of legitimate cross-border trade, as well as drug trafficking and sex work. Many people cross the border daily and seasonally to find work and many are employed as porters in the cross-border trade.

The region is home to many ethnic minority groups some of whom, such as the Zhuang, live on both sides of the border. There is frequent intermarriage across the border, although this is illegal and leads to loss of nationality. Kinship ties, like migratory employment and trade, result in additional cross-border movement.

Development of the project

This is the first-ever cross-border HIV prevention project targeting IDUs in which the same interventions are being implemented in both countries. The project is opportune in that HIV prevalence has reached a possible “takeoff” point in Ning Ming County, China and risen even higher in Lang Son Province, Vietnam during the time the project was under development.

Despite the need for the project, its development proved extremely challenging and ultimately required 4 years from the germination of the idea in 1997. Vietnam and China have friendly relations now but the two countries needed time to develop collaborations involving sensitive issues such as drug use, HIV/AIDS, and the border itself. In both countries, drug use is considered a “social evil” (the explicit term used in Vietnam), drug users are heavily stigmatized, and people found in possession of drugs are committed to punitive re-education camps where they undergo “cold turkey” detoxification. In this policy atmosphere, international collaboration in the implementation of interventions with a “harm reduction” orientation is understandably controversial and therefore cautiously pursued.

Plans for this cross-border intervention called for increasing the use of sterile needles and syringes by drug users.

Syringe exchange programmes (SEPs) are a standard procedure for increasing use of sterile needles and syringes and removing potentially contaminated injection equipment from the community. During the planning stage, syringe exchange was permitted by national policies in Vietnam but not in China. Fortunately, the United Kingdom's Department for International Development recently negotiated a memorandum of understanding with the Chinese government in support of the China-UK AIDS Prevention and Care Project. This permitted "social marketing" of sterile injection equipment to reduce HIV transmission among injecting drug users. "Social marketing" did not include direct syringe exchange, but otherwise was loosely defined. This permitted us to develop our own ideas for social marketing.

Besides devising the social marketing strategies, development of the project involved securing in-country partners: ultimately, the National AIDS Standing Bureau (NASB) and Lang Son Provincial Health Services in Vietnam and the Guangxi Center for HIV/AIDS Prevention and Control (GX AIDS) and Ning Ming County Health Department in China. Several other partners and a number of potential funders came and went along the way. Finally, the Ford Foundation's offices in Hanoi and Beijing and the National Institute on Drug Abuse (NIDA), US National Institutes of Health, emerged as funders in 2001 and it was possible to begin the project. A 4-year NIDA grant is supporting the research and evaluation while the Ford Foundation grants are covering most of the intervention costs. US law prohibits the use of Federal funds to support any form of SEP. In this project, the Ford Foundation, which is not subject to this prohibition, is paying the salaries of the peer educators and the costs of purchasing needles and syringes and printing and redeeming pharmacy vouchers.

Implementation and evaluation of the interventions

The intervention aims to reduce HIV risk behaviours among IDUs and thereby stabilise HIV prevalence and reduce HIV incidence on both sides of the border, as well as prevent additional cross-border HIV transmission. The project also seeks to benefit the larger public health by collecting and safely disposing of large numbers of discarded needles and syringes that might otherwise put others at risk. The project involves intensive community education and regular meetings with relevant agencies, including the police, to increase understanding and awareness of HIV/AIDS and to build and maintain support for the interventions.

In a larger sense, the project hopes to demonstrate effective and replicable HIV prevention strategies and foster additional cross-border collaborations to address HIV/AIDS and other public health issues. Already, there is evidence of increased collaboration. NASB and GX AIDS are planning another cross-border HIV prevention intervention in Quang Ninh Province, Vietnam and a neighbouring county in Guangxi Province, China. The semi-annual joint meetings

of Chinese and Vietnamese collaborators on the cross-border project are spawning additional smaller meetings and informal contacts to discuss research and intervention issues. Bilingual educational materials are being developed and shared and plans are underway for reciprocal acceptance of pharmacy vouchers.

The project is being implemented in six sites in Lang Son Province and four sites in Ning Ming County (Fig. 1). In each country, there is a larger site at some distance from the border (Ning Ming City, about 35 km, and Lang Son City, about 15 km) and some smaller sites closer to the border. Sites were selected in consultation with health department officials. Peer educators were recruited and are being supervised by provincial, county, and local health department staff. The peer educators contact IDUs in the community (at their own or the IDUs' homes, shooting places, and other locations) to provide risk reduction information and materials. In Vietnam, the peer educators also provide home-based support to HIV-positive people and their families.

The social marketing component is designed to provide sterile injection equipment to IDUs at no cost, to dispose safely of potentially contaminated injection equipment and to serve as a medium for communicating information about HIV/AIDS. Peer educators in both countries collect used needles and syringes for safe disposal and offer IDUs the choice of new needles and syringes or vouchers good in participating pharmacies for new needles and syringes. The vouchers have HIV/AIDS prevention messages printed on them, thus serving as reminders to IDUs to practice safer injection (see the Vietnamese voucher in Fig. 2) (Piane, 2000; Silverman et al., 1996). In Vietnam, the vouchers are good for a new needle/syringe and an ampoule of distilled water or a condom. Also in Vietnam, the vouchers are redeemable in selected clinics for an STD examination and treatment, although to date few if any IDUs have exercised this option.

The intervention was launched in both countries between January and October of 2002—in Vietnam, community education and collection of used needles and syringes commenced in January with full implementation of the interventions in July, while in China full implementation began in early October. Table 1 summarises process data to the end of 2002 on numbers of used needles and syringes collected, pharmacy vouchers distributed and redeemed, and new needles and syringes provided by the project either directly or through redemption of vouchers.

Vietnam more than doubled the goal of collecting 75,000 used needles/syringes per year in the first year of the project, while China was running slightly behind the goal for the first year. The large gap in Vietnam between the total number of new needles/syringes provided directly and through vouchers (about 5000 per month) and the number of used needles/syringes collected (about 14,000 per month) indicates a need to scale up the provision of vouchers and new needles/syringes. In China, conversely, more new needles/syringes were distributed than used needles/syringes collected, suggesting the need to increase collection efforts.

"I Care Do you....?!"

NASB LSPHS FORD FOUNDATION

Project:
A COMPREHENSIVE INTERVENTION FOR INJECTION DRUG USER BASED ON PEER EDUCATION IN LANG SON

HEALTH CARE SERVICE CARD

"Vượt qua rào cản kỹ thị và phân biệt đối xử"

NO: _____

"HIV/AIDS Prevention is the responsibility of each individual, each family and the society"

NATIONAL AIDS STANDING BUREAU (NASB) LANG SON PROVINCIAL HEALTH SERVICES FORD FOUNDATION

Project:
A COMPREHENSIVE INTERVENTION FOR INJECTION DRUG USER BASED ON PEER EDUCATION IN LANG SON

HEALTH CARE SERVICE CARD

The Project is implemented by:

1. LANG SON PROVINCIAL HEALTH SERVICES;
2. NATIONAL AIDS STANDING BUREAU OF VIETNAM;
3. WITH SUPPORTS FROM THE FORD FOUNDATION (USA).

Please Document exchanged materials (For Pharmacy Use)

One needle and syringe and a water tube.....

One needle and syringe and a condom.....

Other (Specify).....

"I Care Do you....?"

"To overcome stigmatization and discrimination"

NO.: _____

" CARE FOR PEOPLE LIVING WITH HIV/AIDS "

USAGES OF THE CARD:

1. To have your health checked, to receive counseling and some anti-opportunistic infection drug at:
 - LANG SON PROVINCIAL GENERAL HOSPITAL.
 - PROVINCIAL CENTER FOR ANTI SOCIAL EVILS
 - LANG SON PROVINCIAL PREVENTIVE MEDICINE CENTER
2. To exchange a package of 01 needle and syringe and water tube; or a package of 01 needle and syringe and a condom or regular drug costed 1,500 VND at the following pharmacies:

LANG SON TOWN	CAO LOC DISTRICT
Pharmacy No.12 - Printing House <input type="checkbox"/>	Cao Loc Town's Pharmacy <input type="checkbox"/>
Pharmacy No.2- House No.22 - Phai Ve Str <input type="checkbox"/>	Pharmacy House 22, Group 7, Cao Loc <input type="checkbox"/>
Kioque No.3 Book Company- Bac Son Str <input type="checkbox"/>	Pharmacy No.43 Dong Dang Market <input type="checkbox"/>
General Department - Lang Son town HCC <input type="checkbox"/>	Dong Dang Market's Pharmacy <input type="checkbox"/>
Pharmacy, House No.165 Le Hong Phong Str <input type="checkbox"/>	Pharmacy No.14 Dong Dang Market <input type="checkbox"/>
Pharmacy No.4, House 118-Tran Hung Dao Str <input type="checkbox"/>	VAN LANG DISTRICT
Pharmacy House 145B Le Loi Str <input type="checkbox"/>	Pharmacy of Ward No.2 - Tan Thanh <input type="checkbox"/>
Pharmacy House 05 - Ngo Quyen Str <input type="checkbox"/>	Pharmacy Bamako-Tan Thanh HCC <input type="checkbox"/>
Pharmacy No. - Ba Trieu Str <input type="checkbox"/>	LOC BINH DISTRICT
Pharmacy No.169 Bac Son Str <input type="checkbox"/>	Pharmacy No.01 - Loc Binh <input type="checkbox"/>
Pharmacy No.6-House 423Tran Dang Ninh Str <input type="checkbox"/>	Pharmacy No.02 - Loc Binh <input type="checkbox"/>
Pharmacy House 207 Tran Dang Ninh Str <input type="checkbox"/>	Pharmacy No.03 - Loc Binh <input type="checkbox"/>

3. The card can be used for just once and is invalid on 30/09/2002.
4. The card can not be exchanged for money
5. The card can be exchanged for the above-mentioned materials from 7h00 to 19h00 everyday

"DO SAFE BEHAVIORS TO PREVENT HIV/AIDS INFECTION"

Fig. 2. Pharmacy/clinic voucher—Lang Son Province .

Table 1
Cross-border HIV prevention project: process data, through December 2002

	Chinese sites (start: October 2002)	Vietnamese sites (start: July 2002)
Pharmacy vouchers		
Distributed	17040	17600
Redeemed	15912	11042
New needles/syringes distributed	19982 ^a	14000 ^b
Used needles/syringes collected	16363	163827 (start January 2002)

^aIncludes needles/syringes directly distributed and those provided through redemption of pharmacy vouchers.

^bRepresents *only* needles/syringes directly distributed and *does not* include those provided through redemption of pharmacy vouchers.

Peer educators have access to protective gloves and puncture proof containers for collection of used needles/syringes. Disposal of used needles and syringes is normally by incineration. The Chinese sites also have incapacitating devices that puncture the syringe and cut off the needle.

Besides the examination of process data, the evaluation will use cross-sectional surveys involving interviews and HIV testing at baseline and 6, 12, 24, and 36 months thereafter, of samples of IDUs to measure HIV prevalence and changes in risk behaviours. The surveys include a “capture–recapture” component using unique identification numbers linking the records of participants who appear in more than one survey that is designed to permit the estimation of HIV incidence and the extent of longitudinal behaviour change. Community attitudes and support will be gauged through concurrent household surveys.

This is considered to be a structural intervention appropriately evaluated at the community level. Thus, the evaluation is not based on an experimental or quasi-experimental design. There are no comparison or control groups or communities.

Implementation challenges and strategies

Challenges have arisen for all of the key actors and stakeholders in the project: health departments, police, peer educators, pharmacists, IDUs and the community at large.

Health departments

This intervention cannot succeed without the active support of public agencies including the police and health departments. Health agencies at multiple levels of government are implementing the intervention and are strongly supportive of it. Nevertheless, there may be tensions between the peer educators and the health department staff supervising them. The peer educators are former or current drug users and the health department staff have some

(probably justifiable) suspicion of their work habits and concerns that they would attempt to “game the system”—for example, by selling the pharmacy vouchers to IDUs rather than distributing them free of charge. There has been substantial turnover among peer educators during the early implementation period, some the result of criminal activity or poor attendance. Based on these suspicions and the early experience of this project, as well as the accumulated experience of many programmes, peer educators require close supervision and prompt response to relapses or violations of project rules (Broadhead & Heckathorn, 1994).

Police

Police support and co-operation are also critical to the success of this intervention. Although possession of needles and syringes is legal in both China and Vietnam, in practice the line between legal and illegal activities can become indistinct. There is some question, for example, whether drug residue in a used syringe constitutes illegal possession of a drug, or whether it may be considered illegal for a known IDU to possess needles/syringes.

The police in all sites have formally agreed to support the project and allow its activities to go on without interference, and indications to date are that these commitments are being honoured. There have been no reports of police interference with the interventions or project staff. However, many IDUs continue to be concerned that police may harass and arrest them for possession of needles/syringes. The potential for disjunction between leaders’ commitment of support and rank-and-file practice is a common problem with these types of interventions (Des Jarlais, McKnight, Eigo, & Friedmann, 2000; Vuong et al., 2002) and police practices regarding the interventions must be carefully monitored.

A primary reason for the initial success of the project in achieving strong inter-agency support and collaboration is that regular meetings of health department, police, and other agency representatives are held to discuss project implementation. Such meetings provide opportunities to address and resolve practical problems of individual police behaviour and educate police regarding the need for and appropriateness of harm reduction interventions for IDUs, an important goal in its own right (Khoshnood & Weber, 2002). Violations of the rights of peer educators or clients must also be brought to the attention of the cognizant IRBs.

Peer educators

Peer educators are paid a modest salary—about US\$ 21 per month in Vietnam and about US\$ 60 per month in China. This discrepancy has been discovered through interaction of peer educators working in communities very near the border. It is an issue that should be addressed as it could cause morale problems among the peer educators in Vietnam. The

Chinese peer educators also receive 0.1 RMB (about US\$ 0.015) for each used needle and syringe they collect. In both countries, peer educators are offered vocational training, such as in motorbike repair or small-business development, to help them obtain long-term employment but lack of real career opportunities continue to pose challenges.

Peer educators are also concerned about how the police will treat them. They are former or current IDUs most of whom have had experience with the police. In both countries, the project has provided peer educators with picture identification cards intended to protect them from interference or mistreatment. The Vietnamese peer educators also have distinctive uniforms. To date, as noted above, police have allowed the peer educators to do their work unimpeded. Peer educators in Ning Ming City were instrumental in causing the relocation of the project centre from a building directly behind a police station to another one farther away. One peer educator remarked that encouraging IDUs to come to a centre near the police station would be like leading them into “the mouth of the tiger”.

Pharmacies

Pharmacies' participation is also crucial to the success of the intervention. They redeem the vouchers provided to the IDUs for new needles/syringes or other merchandise. There has been tension between pharmacies and IDUs. Pharmacy sale of needles and syringes is legal in both Vietnam and China but IDUs sometimes report that pharmacists will not sell to a person they think is a drug user. Pharmacists, in turn, often report being threatened or victimised by IDUs, and having IDUs beat on their doors late at night demanding to buy needles. (The vast majority of these pharmacies are very small shops whose proprietors live in the back with their families.) Thus, the project teams in both countries tried to recruit the most “friendly” pharmacies and those most convenient to popular shooting places. The Chinese sites have four pharmacies covering two of the sites and clinics covering the other two sites, which have no pharmacies. In the Vietnam sites, there are 22 participating pharmacies.

In both countries, the intervention has been designed to offer some benefit to pharmacies. In China, each participating pharmacist receives a fixed monthly stipend and the new needles/syringes are provided to pharmacies free of charge. In Vietnam, there is no fixed payment to participating pharmacies, rather they are reimbursed each month for the vouchers they actually redeem. Visits to several participating pharmacies revealed that they were enthusiastic about the voucher programme and reported few problems from IDUs, other customers or neighbours. Some pharmacies in both countries reported increased business as a result of the voucher programme. One non-participating pharmacy in Vietnam reported losing business (most likely to a participating pharmacy down the street) and now wished to join the programme. Additional pharmacies are also applying to join the programme in China.

Injection drug users

Some injection drug users (IDUs) may be reluctant to participate for fear of being harassed or arrested by the police, or having their confidentiality violated. There is a long history in these communities of mistreatment and repression of drug users, a history that may be hard to overcome even after police departments have agreed to support the intervention. In the words of one of the Vietnamese collaborators, “the tiger still has his teeth and looks dangerous”. It will be important to see whether the police maintain their early support of the project and refrain from arresting IDUs for possession of needles/syringes. It will also be important to see if such changes, in turn, lead to increased willingness of IDUs to engage with peer educators and participate in the programme. If, on the other hand, IDUs perceive that there is a relationship between meeting with a peer educator and being harassed or arrested by police, this could undermine IDUs' trust of peer educators and deal a severe blow to the intervention.

IDUs are also given assurances that the information they provide to interviewers and other project staff, as well as their HIV test results, will remain confidential. In Vietnam, the National AIDS Standing Bureau's IRB expressed concern that, despite assurances of confidentiality, many potential respondents would refuse to participate in the cross-sectional surveys if they were required to sign the informed consent form. Therefore, consent is being obtained orally in Vietnam, with the interviewer certifying the oral consent by his or her signature.

Finally, participants in Vietnam are offered an incentive for accepting and using the pharmacy vouchers. Each voucher is worth 1.5 times the cost of a new needle/syringe. Thus, a voucher will obtain a new needle/syringe and an ampoule of distilled water, a new needle/syringe and a condom, or other merchandise worth 1500 VND. This incentive, as well as vouchers' greater susceptibility of being carried unobtrusively compared to new needles/syringes, are the main reasons that most IDUs in Vietnam reportedly prefer the vouchers to new needles/syringes. However, interim process data (Table 1) indicate that more new needles/syringes are being directly distributed by peer educators than are being provided through redemption of vouchers.

In China, there was no such incentive at first: the vouchers were redeemable for one new needle/syringe only. The 1-for-1 exchange came about because pharmacists balked at the proposed 1-for-1.5 exchange, claiming that this would make it difficult to reconcile the number of vouchers redeemed with the numbers of new needles/syringes dispensed. At first, IDUs in China reportedly favoured the vouchers and direct receipt of new needles/syringes equally, in part because they appear less reluctant to carry needles/syringes than their counterparts in Vietnam and because there was no incentive associated with the vouchers in China. About 5 months into the project, the vouchers in China were made redeemable for a new needle/syringe plus

an ampoule of distilled water plus a condom. As a result of this change, IDUs began to show strong preference for the vouchers.

Despite the mechanisms and incentives built into the project, some IDUs—especially in Vietnam—remain reluctant to carry used needles and syringes for exchange because they fear being arrested. Vietnamese IDUs tend to want to dispose of their needles/syringes as soon as they finish injecting and so simply discard them on the ground at the shooting place. (Peer educators urge IDUs to recap their needles and/or to stick the needles into the ground to reduce the likelihood of injury and potential transmission of infection to others.) As a result, in Vietnam, there is very little actual exchange of used needles/syringes for new needles/syringes or pharmacy vouchers occurring. Rather, the peer educators make regular rounds of the shooting places to collect used needles and syringes and simply distribute the vouchers and new needles/syringes to the IDUs separately. This occurs mainly in their own or in IDUs' homes. At first, some IDUs would not accept the vouchers (even without exchange) because they were afraid that possession of vouchers might identify them as IDUs. However, this problem dissipated and IDUs quite quickly began to accept the vouchers willingly and request them from peer educators.

In China, IDUs appear much more willing to carry used needles and syringes and exchange them through peer educators for new needles/syringes or vouchers. They also appear much more willing to carry new needles/syringes. While Chinese IDUs still fear the police, their fear is less intense and widespread than among Vietnamese IDUs. During site visits in several Ning Ming sites, we observed IDUs bringing 10–15 used needles/syringes at a time to exchange for new ones at the project centre or through peer educators.

Still, the problem of stigma is serious in both countries. IDUs generally wish to avoid discovery of their status by their families and others in the community. As a result, they prefer to interact with the peer educators in private. IDUs sometimes send a friend to obtain new needles or vouchers for them because they themselves do not wish to be observed or discovered. They also often prefer to redeem vouchers at pharmacies in neighbourhoods and communities at some distance from where they live so as to reduce the likelihood of being observed by people they know.

In Vietnam, some attempts were made to station peer educators at regular shooting places to conduct exchange but this was largely unsuccessful as IDUs did not appear at regular places at regular times and peer educators found that they were wasting substantial time in fruitless waiting. Peer educators have also placed containers for used needles/syringes at shooting places, but with mixed results.

Although the project was designed as an exchange, its most important goal is to get new needles/syringes into the hands of IDUs to help them reduce their risks. Thus, in light of IDUs' fears and concerns about stigmatisation, flexibility in implementing the interventions was necessary. Since exchange appeared unfeasible in Vietnam, peer educators sim-

ply distribute vouchers and new needles/syringes and regularly collect discarded used needles/syringes in shooting places and elsewhere in the community. The latter activity offers a valuable public health benefit to the community and should be maintained for its own intrinsic worth as well as for its utility in building and maintaining public support for the project.

The community at large

Support and understanding of the community in the project sites is critical to the success of the intervention. As is often the case with interventions involving "harm reduction" measures such as increasing the availability and accessibility of new needles and syringes, the community may misperceive that the intervention increases drug use. It is essential that the project staff, including peer educators, diligently and persistently propagate the true objectives of the intervention—to reduce HIV risk behaviours and HIV transmission among IDUs and between IDUs and others, to assist and support IDUs who wish to reduce or cease using, and to benefit the public health by collecting and safely disposing of large numbers of used needles and syringes.

Community meetings in the project sites began before implementation of the interventions and are continuing throughout implementation. Billboards, posters, brochures and mass media are being used to describe the interventions and their intended outcomes. Such media could be used, for example, to publicise the numbers of used needles and syringes collected and safely disposed of by the project. Officials report that there has been and continues to be some public misunderstanding of the project's purposes but overall support is quite strong.

Comparison of baseline and follow-up community surveys of HIV/AIDS knowledge and attitudes towards the interventions will enable us to gauge the level of understanding and support over time. These surveys also offer opportunities to provide corrective information to community members who give responses that indicate misunderstanding of the project.

Conclusions

The development and implementation of cross-border HIV prevention interventions for IDUs pose substantial challenges. These challenges increase in complexity and intensity the more agencies and levels of government are involved. They also increase in relation to the history of police harassment and repression of drug users and to government policies stressing arrest and incarceration of drug users over treatment and support for drug use cessation.

The early implementation experience in this cross-border HIV prevention project already offers some important lessons: (a) multi-sectoral collaboration and ongoing communication among all participating agencies are essential;

(b) the general community must be educated prior to implementation and throughout the project period regarding the true objectives of the interventions; (c) flexibility and adaptability to contextual factors (e.g. willingness to move from the originally planned exchange intervention to separate collection of used needles/syringes and distribution of new needles and pharmacy vouchers, especially in Vietnam) are critical to success; (d) incentives for IDUs and pharmacists may increase participation and acceptance; (e) continued serious stigmatisation of drug use makes it important to engage IDUs in settings that are private and less susceptible to observation and discovery; (f) identification cards and distinctive uniforms can help protect peer educators from interference by the police; (g) all project-related activities, including those of peer educators, pharmacists, and the police must be carefully and continuously monitored.

There are important benefits of collaborative approaches to HIV prevention across international borders. Such programmes may not only improve HIV prevention in these regions but also help to increase and diversify cross-border collaboration in HIV prevention, public health, and other domains. They may also help build momentum for positive changes in governmental policies related to drug use and HIV prevention.

Acknowledgements

Funding Support was provided by National Institute on Drug Abuse, Grant No. 1 R01 DA-14703, and the Ford Foundation (Beijing and Hanoi offices). The authors gratefully acknowledge all of the health department and clinic staff, other public officials, peer educators, and pharmacists in Ning Ming County and Lang Son Province who are participating in and supporting this project. We would also like to acknowledge the support and encouragement of Joan Kaufman and Eve Lee of the Ford Foundation's Beijing office, Lisa Messersmith of the Ford Foundation's Hanoi office, and Helen Cesari of the National Institute on Drug Abuse, US National Institutes of Health.

References

- Ball, A. L., Rana, S., & Dehne, K. (1998). HIV prevention among injecting drug users: Responses in developing and transitional countries. *Public Health Report*, 113, 170–181.
- Beyrer, C., Razak, M. T., Lisam, K., Liu, W., Yang, J., Liang, S. et al. (2000). Overland heroin trafficking routes and HIV-1 spread in South and South-East Asia. *AIDS Research and Human Retroviruses*, 14, 75–83.
- Broadhead, R. S., & Heckathorn, D. D. (1994). AIDS prevention outreach among injection drug users: Agency problems and new approaches. *Social Problems*, 41, 473–495.
- Chu, T.V., West, G.R., Durant, T.M., Van, T.C., Chunga, C.A., & West, G.R.W. (2000). *Characteristics of the emerging HIV epidemic in Northern Vietnam*. Poster abstract MoPeC2342 presented at XIII international AIDS conference, Durban, South Africa, July 10.
- Des Jarlais, D. C., McKnight, C., Eigo, K., & Friedmann, P. (2000). *US national syringe exchange survey findings*. Presented at the North American syringe exchange conference, Albuquerque, New Mexico, April 2002.
- Hien, N. T., Long, H. T., Chi, P. K., van Ameijden, E., Deville, W., & Wolffers, I. (1999). HIV monitoring in Vietnam: System, methodology, and results of sentinel surveillance. *Journal Acquired Immune Deficiencies Syndromes*, 21, 338–346.
- Hoang, T.V., Son, N.T., Trung, N.T., Ngu, D., & Binh, K.T. (2001). *A rapid assessment of HIV/AIDS situation and vulnerabilities related to drug use in Lang Son* (unpublished report). Hanoi: National AIDS Standing Bureau.
- Kato, K., Shiino, T., Kusagawa, S., Sato, H., Nohtomi, K., Shibamura, K. et al. (1999). Genetic similarity of HIV Type 1 Subtype E in a recent outbreak among injecting drug users in Northern Vietnam to strains in Guangxi Province of Southern China. *AIDS Research and Human Retroviruses*, 15, 1157–1168.
- Khoshnood, K., & Weber, S. (2002). Social vulnerability of China's illicit drug users to HIV/AIDS: Determinants and responses. *Yale-China Health Journal*, in press.
- Lai, S., Chen, J., Celentano, D., Liu, W., Page, J. B., Lai, H. et al. (2000). Adoption of injection practices in heroin users in Guangxi Province, China. *Journal of Psychoactive Drugs*, 32, 285–292.
- Lai, S., Liu, W., Chen, J., Yang, J., Li, Z. J., Li, R. J. et al. (2001). Changes in HIV-1 incidence in heroin users in Guangxi Province, China. *Journal Acquired Immune Deficiencies Syndromes*, 26, 365–370.
- Nguyen, T. A., Hoang, L. T., Pham, V. Q., & Detels, R. (2001). Risk factors for HIV-1 seropositivity in drug users under 30 years old in Haiphong, Vietnam. *Addiction*, 96, 405–413.
- Nguyen, T.H., Vu, V.T., Nguyen, V.T., Ton, T.B., Kamkura, M., van Ameijden, E., et al. (2002). *Explosive HIV epidemic among young heroin users in Quang Ninh Province, Vietnam: Risk factors for HIV seropositivity*. Poster abstract MoPeC3387 presented at XIV international AIDS conference, Barcelona, July 8.
- Piane, G. (2000). Contingency contracting and systematic desensitization for heroin addicts in methadone maintenance programmes. *Journal of Psychoactive Drugs*, 32, 311–319.
- Quan, V. M., Chung, A., & Abdul-Quader, A. S. (1998). The feasibility of a syringe-needle-exchange programme in Vietnam. *Substance Use & Misuse*, 33, 1055–1067.
- Quan, V. M., Chung, A., Long, H. T., & Dondero, T. J. (2000). HIV in Vietnam: The evolving epidemic and the prevention response, 1996 through 1999. *Journal Acquired Immune Deficiencies Syndromes*, 25, 360–369.
- Shao, Y., Su, L., Sun, X.H., Xing, H., Pan, P.L., Wolf, H., et al. (1998). *Molecular epidemiology of HIV infection in China*. Abstract 13132, presented at the XII international conference AIDS, Geneva, Switzerland.
- Silverman, K., Higgins, S. T., Brooner, R. K., Montoya, I. D., Cone, E. J., Schuster, C. R. et al. (1996). Sustained cocaine abstinence in methadone maintenance patients through voucher-based reinforcement therapy. *International Journal of Addiction*, 13, 737–746.
- Tung, N.D., Tuan, N.A., Hoang, T.V., Hien, N.T., Thang, B.D., Kane, T.T., et al. (2001). *HIV/AIDS behavioural surveillance survey: Vietnam 2000*. Hanoi: USAID/FHI/NASB.
- UNAIDS. (2000). *Current status of HIV in China by December 1999*.
- Vinh, D.Q. (2002). *A qualitative study on HIV risk among injecting drug users in Vietnam: Reasons for sharing syringes and needles*. Oral abstract WeOrE1361 presented at XIV international AIDS conference, Barcelona, July 10.
- Vuong, T.H., Pham, H.T., Chu, A.Q., Le, Y.N., Dang, K.V., & Nguyen, K.T. (2002). *Peer-based harm reduction intervention for HIV prevention in injection drug users in Northern Vietnam*. Oral abstract TuOrF1163 presented at XIV international AIDS conference, Barcelona, July 9.

- Yap, L., Wu, Z., Liu, W., Ming, Z., & Liang, S. (2002). A rapid assessment and its implications for a needle social marketing intervention among injecting drug users in China. *International Journal of Drug Policy*, 13, 57–68.
- Yu, X., Chen, J., & Shao, Y. (1998). Two subtypes of HIV-1 among injection-drug users in Southern China. *Lancet*, 351, 1250.
- Yu, X., Chen, J., Shao, Y., Liu, W., Beyrer, C., Liu, B. et al. (1999). Emerging HIV infections with distinct subtypes of HIV-1 infection among injection drug users from geographically separate locations in Guangxi Province, China. *Journal Acquired Immune Deficiencies Syndromes*, 22, 180–188.