

Introduction

Injecting drug users (IDUs) and sex workers are the main drivers of the HIV epidemics in Central Asia. Sentinel surveillance conducted in the region since 2005 have demonstrated a high prevalence of risky behaviors among injecting drug users (sharing of needles and syringes and unprotected sex) and sex workers (unprotected sex).

At the same time, HIV prevention interventions in 2005 covered a limited number of the most-at-risk populations (MARPs), reaching only 7-15% of the estimated IDU population in Central Asia. The lack of effective coordination between the stakeholders, low capacity and expertise of service providers, and the low priority of HIV prevention among MARPs by policy makers all contributed to the low coverage. Because of this situation, JSI Research & Training Institute, Inc together with partners developed and implemented a model for achieving high coverage of MARPs with a comprehensive package of essential HIV prevention interventions (the TUMAR project).

Program methods

Model objectives and expected outcomes

The model pursued the following three objectives:

1. Develop mechanisms of coordination of stakeholders for the provision of prevention services to IDUs and sex workers in selected sites;
2. Ensure increased coverage of IDUs and sex workers with a comprehensive package of essential HIV prevention services; and
3. Prove effectiveness of HIV prevention activities.

The following key outputs and outcomes were expected as a result of the model implementation:

- Increased knowledge about modes of HIV transmission and methods of prevention;
- Decreased HIV-related risky behavior among target groups; and
- Decreased incidence of HIV infections.

Preparation stage

The main steps undertaken in preparation for model implementation included:

- Developing the comprehensive package of services;
- Identifying pilot sites and a participatory needs assessment;
- Selecting of implementing partners;
- Signing agreements with site partners; and
- Securing funds for project implementation.

The comprehensive package of services developed by the USAID-funded CAPACITY project and included into the TUMAR design was based on WHO, UNAIDS and other UN agencies and international organizations working on HIV prevention among MARPs. The package consisted of four key elements:

1. Reduction of stigma and discrimination. Advocacy activities, such as meetings and trainings, were planned with key community members—including police, mass media and religious leaders—to overcome negative attitudes towards MARPs and PLHIV and to create a favorable political environment for HIV prevention activities.
2. Provision of HIV education and information. Through outreach and drop-in center-based activities, IEC materials were developed and volunteers were trained to provide information and materials about HIV prevention and risk reduction to MARPs.
3. Provision of individual means of protection against HIV infection. Through outreach and/or drop-in center-based activities, individual means of protection were made available and distributed to MARPs.
4. Access to medical services related to risk practices. Referral systems were set up among various medical institutions and medical consultants were contracted to provide free



and the percent who also use injection drugs.

Participation in the project was the only factor that influenced the condom use rates both during the last month and with the last client (OR=2.5; 95% CI:1.9-3.2 and OR=4.8; 95% CI:3.4-6.7). A greater percent of sex workers from the project sites (79%) reported always using condoms with clients during the last month, compared to sex workers from the control sites (60%), and 91% percent of sex workers from the project sites used condoms with their last client, compared to 69% from the control sites. The effect of the project interventions also spread to non-clients at the project sites, who were more likely to use condoms with their last partner when compared to respondents from the control sites (OR=1.8; 95% CI:(1.1-2.8). A similar number of respondents from both groups reported having a regular sexual partner. There was no difference between the percentage of sex workers at project and control sites who reported using condoms with their regular partners. There was also no difference between the level of reported pregnancies between the project sites and the control sites.

Knowledge about the most common STI symptoms was better among respondents from the project sites (54%) than from the control sites (39%) (OR=0.6; 95% CI: 0.8- 0.3). However, the percentage of women who reported having any STI symptoms and those who sought professional medical help for STIs in both groups was the same. The odds of sex workers being screened for STIs within the last 6 months was much higher among respondents from the project group than among controls (OR=4.0; 95% CI:3.1- 5.2). Thus, 69% of sex workers at project sites sought STI diagnostic services during the previous 6 months, compared to 36% of those at control sites. As many as 35% of respondents from the control sites had never been tested for STIs, compared to 7% of those from project sites.

Sex workers from project sites were more likely

than those from control groups to correctly identify sex (94% vs. 70%), injections (68% vs. 32%), and both sex and injections (66% vs. 29%) as modes of HIV transmission. Clients who were in regular contact with the program (5 or more contacts) were almost three times more likely to understand the risk of needle sharing (OR=2.9; 95% CI:1.5-5.6). Almost half of all respondents from the project group (47%) were able to name both sex and injections as modes of HIV transmission and had no misconceptions about HIV transmission, compared to only 20% among controls. Only 23% of respondents from project sites were able to list all four modes of HIV transmission and had no misconceptions, though this was still higher than for controls (7%) (OR=1.3; 95% CI:0.9-1.7). The project group was also better-informed that a person infected with HIV can look healthy (OR=2.5; 95% CI:1.9-3.2).

Knowledge about HIV prevention was also better among respondents from the project groups compared to those from the control groups. 77% of the project group and 58% of the controls understood that regular use of condoms can decrease the risk of HIV infection (OR=3.2; 95% CI:2.3-4.5). Likewise, a greater percentage of project clients knew that avoiding needle sharing can decrease the risk of HIV infection (78% vs. 60%) (OR=0.8; 95% CI:0.6-1.1).

Finally, sex workers from the project sites (65%) were more likely to have had a recent HIV test (in the last 6 months) than those from control sites (29%) (OR=3.2; 95% CI:2.5-4.2). In addition, 40% of sex workers at the control sites had never had an HIV test, while this was true of only 15% of sex workers at the project sites. (See Table 4 at the end of this chapter for detailed comparisons of behavior and knowledge results among sex workers from the end-line survey).

Why sex workers engage in HIV- risk behaviors

When sex workers from both the project and

control sites were asked why they do not always use condoms with clients, 42% responded that their clients object to using condoms; 18% do not like to use condoms themselves; 12% trust their clients; 11% did not have condoms available; 6% said their clients will pay more for sex without condoms; and 3% said they could not control themselves because they were drunk. Surprisingly, among sex workers in the control sites, 12% said they did not know what condoms are, while none of the sex workers in the project sites reported this reason. Among project clients, behavior change did not seem to be influenced by the number of program contacts they had.

Sex workers in both groups who had regular sex partners were asked why they did not use condoms with these partners. 57% said they trust their partners; 18% said their partners object to using condoms; 12% said that they themselves do not like using condoms; 5% were trying to get pregnant; and 5% were worried about losing their partner's trust.

Finally, when sex workers at both the project and control sites were asked why they did not go for an HIV test, 45% replied that they did not think about it; 32% said it was not necessary; 6% said they do not want to be tested, and 5% said the location of the test is inconvenient. 16% of the sex workers in the control sites said they were afraid to get tested, while none of the sex workers in the project sites replied with this answer.

Discussion

Model strengths

- Targeted interventions. The model provided services to primary drivers (IDUs and sex workers) of HIV epidemics in Central Asia at 7 sites where coverage with prevention services before the project was low but HIV prevalence was notably high.

- High coverage. The model aimed to and succeeded in reaching a majority of clients with HIV prevention services.

- Essential package of HIV prevention services. The model services package was developed through an analysis of internationally-recognized, evidence-based approaches and tailored to address the unique aspects of the Central Asian epidemics.

- Multi-sectoral approach. Local stakeholders from government structures and civil society at each project site were involved in the model development and implementation process to ensure that the various and diverse needs of the MARPs were met with broad sectoral support and various, locally-developed mechanisms.



Photo: Round table meeting with member of the Coordination Committee in Kurgan Tube, Tajikistan

- Participatory approach. This project was developed and implemented in close collaboration and consultation with beneficiaries (MARPs) at each site to ensure transparency, participation, and appeal.

- Monitoring and evaluation. The model featured a rigorous M&E and reporting component, implemented by an independent expert organization and directly linked to each

country's national M&E program to ensure effective implementation and linkage to national program needs.

The main premise of the TUMAR project was that in order to have a significant impact on the HIV epidemics in Central Asia, it is necessary to provide a high level of coverage for the most-at-risk populations with quality, comprehensive HIV prevention services. The project succeeded in reaching the vast majority of the estimated target populations at least once (97%). The proportion of MARPs who regularly received prevention services, defined by at least five program contacts, was also high at 52%.

The end-line survey results demonstrated that the hard work of project implementers paid off. Compared to IDUs and sex workers in control sites, those who had access to the TUMAR interventions exhibited lower levels of risky needle and syringe sharing and higher levels of consistent condom use. IDUs and sex workers in project sites were also more likely to undergo STI and HIV diagnosis than those in control sites. Accurate knowledge about HIV transmission and prevention was also higher among IDUs and sex workers in project sites than in control sites. Furthermore, the end-line survey results showed that clients who had regular and frequent program contacts had greater risk reduction than those who encountered the program seldom or infrequently. Each of these results indicates that with concerted efforts it is possible to reach a high proportion of most-at-risk populations, and that doing so will reduce HIV risk behaviors and increase HIV knowledge. In addition, the project demonstrated a certain level of herd immunity. 'Herd immunity' is when a threshold proportion of a population receives an intervention and the benefit of that intervention spills over to a proportion of the population that does not receive the intervention.

This most clearly seen with vaccines, where by vaccinating a large majority of the population, the level of pathogen in the population decreases overall, thereby decreasing everyone's, even those who were not vaccinated, chance of infection,.

To determine if there was a herd immunity effect of the TUMAR project, non-clients from the project sites were compared with the sample from the control sites, all of whom were non-clients. Among IDUs, the non-clients from the project site were much more likely to practice safe injecting behaviors but not more likely to use condoms or to know more about HIV than IDUs from the control sites. Among sex workers, non-clients from the project site were somewhat more likely to use condoms, but not more likely to go for STI diagnosis or to know more about HIV than sex workers from control sites. These results suggest that there is some amount of herd immunity effect for the most important HIV risk behaviors – needle and syringe sharing, and condom use. Herd immunity effect could be a result of indirect contact with project interventions – clients passing on information, needles and syringes, and condoms to non-clients. In the case of IDUs, it could also be the result of fewer opportunities to share injection equipment, since project clients were less likely to do so.

Understanding the barriers to changing behaviors can help program implementers to improve services. When IDUs in both project sites and control sites were asked why they share needles and syringes and why they do not use condoms, the vast majority said it is due to not having enough money. Much less frequently, but the next-most common reason cited for both, was a fear that refusing to share needles and syringes with peers, and insisting on condom use would indicate a lack of trust between the injector and his or her injecting and sexual partners. The reasons why most IDUs do not get tested for HIV is because they do not

get tested for HIV is because they do not want to, they do not think about it, or because they are afraid.

These responses suggest that for IDUs, needles and syringes and condoms should be free-of-charge and easily available. More emphasis needs to be placed on disassociating the practice of safer behaviors from the feeling of distrust of partners. Rather, emphasis should be placed on associating safer behaviors with caring for and the protection of partners. More work also needs to be done to improve familiarity and knowledge about the benefits of HIV testing so more IDUs will think about, remember, and not be afraid to get tested.

Sex workers in both project and controls sites were also asked why they do not use condoms with clients and regular partners, and why they do not get tested for HIV. A large proportion of sex workers said they do not use condoms because their clients refuse, or because their clients pay more for sex without condoms, thus demonstrating that money is the important factor. Most sex workers said they do not use condoms with their regular partners because they trust them or because their partners do not want to use them. Sex workers' reasons for not getting tested for HIV were similar to those given by IDUs.

Sex workers need to be trained to better-negotiate condom use with clients. They can also learn techniques for convincing clients to use condoms, such as introducing the condom just before penetration, when clients' resistance may be reduced. As with IDUs, project implementers should work to reduce the association between condom use and distrust of their partners, and emphasize that using condoms shows caring and protects their loved ones. Sex workers also need continued and increased knowledge about HIV tests.

While IDUs and sex workers in project sites

definitely benefited from TUMAR's interventions, levels of HIV knowledge and condom use still need to increase, needle and syringe sharing needs to decrease, and STI and HIV diagnosis needs to be accessed more. Thus, it is recommended that TUMAR's interventions be maintained, strengthened, and scaled up.

Nevertheless, it is clear that the TUMAR project interventions have been successful. In addition to maintaining and strengthening interventions in the existing project sites, it is recommended that the interventions should be expanded to other sites with a high prevalence of injecting drug use and sex work. This is especially important since both IDUs and sex workers tend to migrate from one geographic area to another.



Photo: Outreach work in Osh, Kyrgyzstan

Limitations

The TUMAR project was limited by resources, time, and local capacity, and it was not possible to conduct a rigorous project-control baseline survey. Although local capacity improved during the project so that a good end-line survey was possible, since pre- and post-project comparison weren't done there remains the possibility, however slight, that project sites already would have had better knowledge and behavior results from the beginning and that the demonstrated differences were not due to the project. Since the end-line results were consistent across all

project sites, it seems most likely that the project was responsible for the differences.

Also due to time, resources, and local capacity limitations, it was not possible to conduct HIV prevalence surveys. Therefore, even though behavioral and knowledge indicators demonstrate important risk-reduction among vulnerable populations, it is not known whether there was any resultant reduction in HIV transmission.

Changes in risky behaviors were recorded based on self-reported information and considering the increased level of knowledge among project clients, it is possible that behavior changes were over-reported. Nevertheless, the reported change in needle and syringe sharing and condom use is quite large so over-reporting could not account for all of the change.

Conclusion

The TUMAR project was implemented to demonstrate how to provide comprehensive HIV prevention services to the most-at-risk populations, such as IDUs and sex workers. TUMAR also set out to show that providing these services would result in significant and measurable reductions in HIV risk-related behaviors, especially the sharing of needles and syringes and the wearing of condoms. TUMAR was successful on both of these accounts. It is now important for local and national governments and international funding agencies to make resources available to scale up these activities. Achieving high coverage of MARPs is possible and necessary to slow the HIV epidemics in Central Asia.



Photo: Mini-session for sex workers in Osh, Kyrgyzstan



Photo: Rabbit named Tumar Kurgan-Tube, Tajikistan



Photo: Counseling session in Urgut, Uzbekistan

Table 3. End-line survey results for IDUs in project and control groups*

Indicator	Project group	Control group
Sample Size	898	751
Age		
Range	16 – 56	16 – 62
Mean	33 (33-34)	31 (31-32)
Sex (%)		
Female	14 (12-17)	11 (6-13)
Male	86 (83-88)	89 (87-91)
Length of time as IDU		
Range	2 months – 31 years	2 months – 33 years
Mean	6.5 years (6-7 years)	5.5 years (5-6 years)
Type of Drugs used (%)		
Heroin	94 (93-96)	44 (41-48)
Opium/Khanka	14 (11-16)	58 (54-61)
Barbiturates	5 (4-7)	0.8 (0.2-1.4)
Percent who did not share syringes in the last month	96 (95-98)	63 (59-66)
Percent who never shared syringes in the last 6 months	95 (94-97)	61 (58-65)
Among those with sexual experience, number of sex partners during last 12 months		
Range	1- 37	1- 100
Mean	3	4 (4-5)
Among those who had sex during last 12 months, percent who always used condoms	54 (51-58)	28 (24-32)
Among those who had sex during last 12 months, percent who used condom during the last sex	60 (57-64)	37 (33-41)
Percent who correctly identified modes of HIV transmission		
Injections	96 (95-97)	58 (54-61)
Sex	98 (97-99)	64 (61-67)
Both injections and sex	94 (93-96)	54 (50-58)
Percent who correctly identified methods of HIV prevention		
Condoms	94 (93-96)	61 (58-65)
Not sharing injecting equipment	96 (94-97)	63 (60-66)
Percent who know that PLHIV may look healthy	72 (69-75)	57 (54-61)
Percent who had their last HIV test		
6 months ago or less	58 (55-61)	44 (40-48)
> 6 months ago	38 (35-41)	23 (20-26)
Never	4 (3-6)	33 (30-37)

*All figures are shown with 95% confidence intervals in brackets

Table 4. End-line survey results for sex workers in project and control sites*

Indicator	Project sites	Control sites
Sample size	612	465
Age		
Range	16 – 66	16 – 53
Mean	30 (29-30)	31 (30-31)
Length of time as sex worker		
Range	2 weeks – 30 years	2 weeks – 36 years
Mean	5 years (4.5-5 years)	5.5 years (5 -6 years)
Number of clients per month		
Min-max	1 – 500	1 – 450
Mean	44 (39-49)	64 (55-73)
IDU and sex worker, %	3.3 (1.9-4.7)	3.5 (1.8-5.2)
Percent who used condoms with all clients in the last month	79 (76-82)	60 (55-64)
Percent who used condoms with the most recent client	91 (89-93)	68 (64-72)
Percent who had a regular sex partner	57 (53-61)	59 (54-63)
Percent who always used condoms with regular sex partners during the last month	37 (32-42)	33 (27-38)
Percent who had symptoms of STIs during the last 6 months	23 (20-26)	28 (24-32)
Percent who sought qualified medical help for STIs	62 (56-67)	57 (51-63)
Percent whose last diagnostic check for STIs was		
6 months ago	69 (65-73)	35 (31-39)
> 6 months ago	25 (21-29)	44 (38-50)
Never	7 (5-9)	35 (31-39)
Percent who correctly identified modes of HIV transmission		
Injections	68 (64-72)	32 (28-36)
Sex	94 (92-96)	70 (65-74)
Injections and sex	66 (62-70)	29 (24-33)
Percent who correctly identify condoms as a method for HIV prevention	89 (86-91)	71 (67-75)
Percent who know that PLHIV may look healthy	77 (74-81)	58 (53-62)
Percent who had their last HIV test		
6 months ago or less	57 (53-61)	29 (25-33)
> 6 months ago	28 (24-31)	31 (27-35)
Never	15 (12-18)	40 (35-44)

*All figures are shown with 95% confidence intervals in brackets

Table 5. Selected project coverage indicators by sites*

Indicator	Almaty	Kurgan- Tube	Aksu	Karasuu	Urgut	Khujand	Osh	All sites
Estimated population size, n	1 600	900	1 500	1 500	2 000	950	2 000	10 450
Clients ever reached by program, n	1 367	1 022	1 013	2 438	1 332	599	2 390	10 161
IDUs	1 297	848	937	2 329	1 227	13	-	6 651
Sex worker	12	37	41	87	38	538	2 389	3 142
Sex worker/IDU	48	32	3	18	36	39	0	176
Co-dependents	10	105	32	4	31	2	1	185
Sex worker clients	-	-	-	-	-	7	-	7
Clients reached by the program 5 times and more, n	866	562	686	1 222	1 033	466	618	5 453
Clients reached 5 times and more out of estimated target population, %	54%	62%	46%	81%	52%	49%	31%	52%
Clients ever reached by the drop-in center, n	318	784	222	401	723	336	791	3 575
IDUs	292	647	208	361	655	7	-	2 170
Sex worker	2	28	7	27	27	286	791	1 168
Sex worker/IDU	17	26	-	11	21	35	-	110
Co-dependents	7	83	7	2	20	1	-	120
Sex worker clients	-	-	-	-	-	7	-	7
Clients ever reached by outreach program, n	1 314	829	937	2 245	1 316	555	1 819	7 701
IDUs	1 255	689	862	2 148	1 213	11	-	4 923
Sex worker	12	30	41	81	37	503	1 818	2 522
Sex worker/IDU	43	29	3	12	35	37	-	159
Co-dependents	4	81	31	4	31	1	1	153
Sex worker clients	-	-	-	-	-	3	-	3

Table 6. Volume of selected services provided within the project, by site

	Almaty	Kurgan- Tube	Aksu	Karasuu	Urgut	Khujand	Osh	All sites
Number of clients received condoms	1 340	708	963	2 119	1 313	588	2 357	9 388
Number of clients received syringe and needle sets	1 355	782	1 011	2 298	1 331	54	332	7 163
Number of clients received alcohol tissues	918	777	936	2 269	0	40	324	5 264
Number of clients referred to STI treatment	74	435	130	302	224	219	924	2 308
Number of clients referred to overdose treatment	51	321	202	269	46	30	1	920
Number of clients referred to VCT	155	550	95	343	1 014	215	130	2 502
Number of clients referred to prevention of vertical transmission	1	271	0	299	88	11	0	670
Number of clients referred to surgeon	6	85	5	28	161	6	0	291
Number of clients consulted by psychologist	221	573	242	81	264	174	31	1 586
Number of clients consulted by narcologist	91	561	220	502	535	17	3	1 929
Number of clients consulted by STI specialist	91	411	215	323	248	212	155	1 655
Number of clients consulted by gynecologist	97	138	0	20	46	331	910	1 542
Number of clients consulted by social worker	104	548	95	2 261	29	487	285	3 809
Number of clients consulted by lawyer	2	99	0	17	0	44	108	270
Number of condoms distributed	93 860	33 021	241 508	101 548	70 912	162 496	380 380	1 083 725
Number of syringe and needle sets distributed	361 429	119 553	304 633	129 892	103 286	11 556	825	1 031 174
Number of alcohol tissues distributed	206 013	119 212	27 7683	209 243	0	6 973	1494	820 618
Number of all IEC materials distributed	22 942	9 333	32 206	17 180	3 609	9 340	15 188	109 798

* Proportion of population reached by site is calculated for the population primarily targeted at the site

medical services—including detoxification treatment, STI diagnosis and treatment, VCT for HIV, prevention of vertical transmission of HIV, and management of surgical complications of drug injecting— to MARPs.

Local partners— including Ministries of Health, Republican and Oblast AIDS Centers, AIDS-service organizations (ASO), oblast health departments and local multisectoral AIDS coordinating bodies— collaborated to identify pilot sites. Decisions were based on the HIV epidemiological situation, prevalence of HIV-related risky behaviors, and the existence of ASOs to implement the comprehensive package of services. Together with JSI, local partners conducted a participatory needs assessment involving the model beneficiaries in 7 sites (see Table 1) from February through March 2006 and developed the following recommendations for the model design:

- Expand HIV prevention services package;
- Scale up coverage of IDUs and sex workers with prevention activities;
- Improve access to MARPs for provision of prevention services;
- Decrease stigma and discrimination of drug users and sex workers by law enforcement agencies;
- Increase the involvement of government and non-government organizations and

health facilities in HIV prevention among MARPs;

- Strengthen capacity and substantially involve NGOs in HIV prevention among IDUs and sex workers;
- Create new and support existing needle and syringes exchange points for IDUs;
- Create a community center for the organization and implementation of prevention activities, counseling, and organization of self and mutual assistance; Improve knowledge and skills of health professionals on HIV prevention among MARPs;
- Improve level of awareness about HIV and STIs among the general population;
- Improve coordination and communication among organizations working on HIV prevention;
- Create unified client tracking and referral systems for all implementers of HIV prevention activities;
- Ensure anonymous and accessible services for STI prevention, diagnosis, and treatment among sex workers;
- Inform IDUs and sex workers about services available for them in government organizations;
- Increase the number of volunteers for HIV prevention outreach to MARPs; and
- Develop monitoring and evaluation (M&E) systems for HIV prevention activities.

Country	Model Site Location	Target Population	Population Size	Main Implementing Partner
Kazakhstan	Almaty City, Rabochi Rosyelok	IDUs	1,600	Almaty City AIDS Center
	Aksu Village, Pavlodar Oblast	IDUs	1,500	NGO Zhardem
Kyrgyzstan	Osh City	Sex workers	2,000	NGO Podruga
	Karasuu City and Kashgar Kishlak, Osh Oblast	IDUs	1,500	NGO Parents Against Drugs
Tajikistan	Khujant City, Chkalovsk Village	Sex workers	950	Sogd Oblast AIDS Center
Uzbekistan	Kurgan-Tube City	IDUs	900	NGO Fidokor
	Urgut City and 4 mahallas from Urgutski Rayon, Samarkand Oblast	IDUs	2,000	Samarkand Oblast AIDS Center

Table 1.

Model sites, target populations, and main implementers.

Each implementing partner signed letters of agreement with other service-providing partners—including Republican and Oblast AIDS Centers, STI Dispensaries, Narcology Centers, Surgery and Obstetrics and Gynecology facilities, and AIDS service NGOs—in their the target area. In addition, agreements were made with local AIDS coordinating bodies, city and district authorities, health departments, law enforcement agencies, media outlets, and other partners, to ensure their support and approval of the model activities.

Based on either the existing data from the rapid situation assessments conducted in some sites as part of the sentinel surveillance surveys, or on the mapping and interviews with key informants, the participatory needs assessment also provided data to estimate the size of target populations at each site. Implementing partners for each site were identified based on the assessment results and negotiations with stakeholders (see Table 1 on the previous page).

Finally, JSI supported the local implementing partners to prepare and submit a regional grant application to the World Bank and DFID-funded Central Asia AIDS Control Project (CAAP) in order to secure funding for implementation of the HIV prevention models. The application was approved and funds were granted in July 2007, after which implementation started. During the regional start-up meeting, the implementing partners named the new model 'TUMAR', the Central Asian word for a traditional talisman worn to prevent evil and to promote good luck, and chose a new logo consisting of the AIDS red ribbon with seven stars signifying the seven model sites (see Figure 1).

Figure 1. Logo of TUMAR



Service provision

Outreach activities and behavior change communication. Outreach workers were recruited and trained to implement interpersonal communication interventions for behavior change and distribute personal means of protection. On average, one outreach worker served 45-50 clients. Outreach workers conducted informational and educational sessions on HIV, STIs, personal risk assessment, HIV testing, condom use, and reduction of risk from drug use. Sessions often also included the distribution of individual means of protection as well as several different types of printed IEC materials. During the outreach activities, workers also informed clients about the drop-in centers and their activities and provided referrals to different medical services for clients with medical needs.

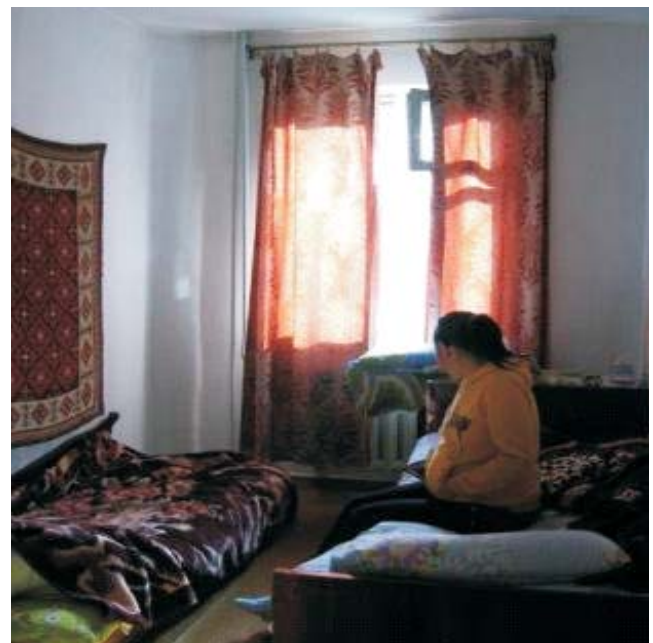


Photo: Drop-in Center in Osh, Kyrgyzstan

Drop-in centers. Each model site drop-in centers provided MARPs with a safe and well-managed space, located, in most cases, outside governmental institutions. Various services were provided at the drop-in centers, including consultations by professionals such as

psychologists, lawyers, substance abuse specialists, and STI specialists. Clients participated in group discussions on HIV/AIDS/STIs in general, HIV prevention in particular, and risk reduction for drug users. They received individual means of protection and IEC materials, and were referred to detoxification, rehabilitation, STI diagnosis and treatment, PMTCT, and other medical services as needed. In addition, drop-in centers provided services to meet everyday needs of clients (shower, laundry, snacks, haircuts, etc.), and constructive spare-time activities (board games, TV, books, music, rabbit-raising and wood-working) in a supportive social space away from their usual social environment that enabled or encouraged further risky behavior. An exception to the rule of placing the drop-in centers outside of government services was in Urgut Rayon of Samarkand Oblast in Uzbekistan, where six previously-existing, government-run 'Trust Points' were supported to function in much the same way as the non-government drop-in centers.

Referral to services. During outreach contacts and visits to the drop-in centers, clients were offered referrals for STI diagnosis and treatment, detoxification and drug rehabilitation, medical services for treatment of post-injection complications, and VCT. Female IDUs and sex workers were referred to gynecological services, and pregnant, HIV-positive IDUs and sex workers were referred to the closest PMTCT service. In order to increase the effectiveness of referrals and to help the clients get to services, volunteers escorted some of the referred clients to the service site and helped them enroll. Clients that declined an escort were provided with leaflets that gave directions to clinics and included instructions and guidelines for utilizing various medical services. Former IDU volunteered to help those IDUs who wanted to go enter detoxification and further rehabilitation services, which increased positive treatment results. Clients needing legal assistance were referred to

lawyers who were contracted to work with the models. Based on signed agreements, service providers were reimbursed for either medicines, services, or both. To ensure that all services were client-friendly, focus group discussions and exit interviews were held with clients.

Advocacy to decrease stigma and discrimination against MARPs and PLHIV. TUMAR staff conducted numerous meetings with local partners, including city administration, law enforcement agencies, and local education and health departments to discuss the progress, results, and future plans of the project. These meetings contributed to a favorable environment for working with MARPs. The project also organized special trainings about HIV prevention and reduction of stigma and discrimination for law-enforcement agencies, religious leaders, and journalists.



Photo: Training for law enforcement workers in Kurgan Tube, Tajikistan

In addition, a short video clip aimed at reducing stigma and discrimination was developed and shown at drop-in centers, medical clinics, and aired on a few television stations. health departments to discuss the progress, results, and future plans of the project. These meetings contributed to a favorable environment for working with MARPs. The project also organized special trainings about HIV prevention and reduction of stigma and discrimination for law-enforcement agencies, religious leaders, and



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Development of IEC materials. Many different types of existing IEC materials developed by other partners in the region were used in the model sites. In topical areas where no or inadequate IEC materials existed, TUMAR developed new materials. Thus, seven printed brochures were developed for distribution during outreach work and at drop-in centers. All IEC materials were made available in Russian and in national languages to increase their utility.

Capacity building

A key component of TUMAR was building the capacity of local implementers and medical consultants to provide HIV prevention services to MARPs. Training activities focused on improving knowledge of HIV, STI, and drug demand reduction issues. Eight outreach worker field guidelines were developed in easy-to-understand language for volunteers to use on various topics relevant to their outreach work. Service providers received on-going consultations and onsite coaching by JSI staff and consultants.

Monitoring for quality and coverage

Another key component of TUMAR was proving high coverage of MARPs with HIV prevention services is both possible and an effective means for behavior change. The project has developed a monitoring and evaluation system to track information about clients' contacts with each type of activity at each model site. Data management was implemented through day-to-day record keeping (contact reports) by outreach workers, medical consultants, and other implementing staff at each site. Data from each site was entered regularly into a single regional database for analysis and comparison across sites. In order to ensure confidentiality and prevent

double counting, each client was assigned a unique identification code that was used in place his/her name. The data was used as a continuous management tool, allowing TUMAR project managers to assess client coverage for all provided services and to make decisions about how to improve service provision.

An assessment of intermediate results, coverage, quality and integrity of the implementation, and performance evaluation of staff was conducted to inform decisions on adjustment of the model activities. Monitoring and evaluation activities were contracted to an external agency, the NGO MedSocInform, which completed regular monitoring visits and conducted process evaluations at each site. JSI staff was also involved in periodic evaluation of project progress and implementation status. The evaluation teams, consisting of MedSocInform and JSI staff, visited field sites and conducted small focus group and individual discussions with project staff and key partners to assess the quality and integrity of TUMAR's services. To ensure that beneficiaries were included in the monitoring process, all assessments among providers were followed by quality checks with clients.

End-line evaluation of results

The evaluation of TUMAR measured whether or not IDUs and sex workers in the target areas had a reduced risk of HIV transmission. Separate evaluation survey instruments were designed for IDUs and sex workers to measure knowledge about HIV and behavioral risk for HIV transmission. Key behavioral indicators included needle and syringe sharing among IDUs, and condom use among IDUs and sex workers. Key knowledge indicators included knowledge about modes of HIV transmission and methods of prevention. Other indicators, such as STI diagnosis and treatment-seeking behavior among sex workers and HIV testing among IDUs and sex workers, were also included.

	Sex workers	IDUs
Project sites	<ul style="list-style-type: none"> • Osh • Khujand 	<ul style="list-style-type: none"> • Aksu • Karasuu • Kurgan-Tyube
Control sites	<ul style="list-style-type: none"> • Karasuu (Kyrgyzstan) • Gafurov (Tajikistan) 	<ul style="list-style-type: none"> • Ekibastuz (Kazakhstan) • Jalalabad (Kyrgyzstan) • Vakhsh (Tajikistan)
Project site respondents, n	612	898
Control site respondents, n	465	751
Clients (project group), n	491	841
Non-clients (project group), n	121	57
Non-clients (control group), n	586	808

Table 2.
End-line study sites and respondents

The surveys were implemented in June, 2009, at five of the project sites and at five control sites. Surveys were given to IDUs at three of the project and control sites to sex workers at two project and control sites. Samples in each of the survey sites were selected using respondent driven sampling (RDS) (Heckathorn, 1997). At each site, 12 respondents were selected as 'seeds' to begin sampling. Each seed respondent was asked to invite up to three additional respondents. This was repeated in up to four waves of respondents until the sample size at each survey site reached approximately 300 (the exact project and control sites and the sample sizes from each are detailed in Table 2). Incentives were provided in the form of food and hygiene packages to all who participated in the survey and to all who successfully referred others to the survey. Each respondent was asked to go through a verification procedure to ensure that s/he fit the requirements for survey participants. Once accepted, individuals were interviewed using a short questionnaire. Participants had a chance to stop the interview at

** RDS is a chain-referral procedure whereby samples are selected from social networks of the target population (in this case, IDU). RDS relies on the assumption that, given sufficiently long referral chains (3-6 waves), the sample composition becomes stable (i.e., reaches "equilibrium") and results in a probability sample of hard-to-reach populations.*

any point in time and skip questions they did not want to answer. All collected data has been kept confidential. Questionnaires were encoded with unique identification codes.

All completed questionnaires were directed to JSI Regional Office for further analysis. Data were double-entered in Excel (Microsoft Corp) and EpiInfo (CDC, Atlanta, GA, USA). After comparison and correction, the data were analyzed using STATA 8.2 (StataCorp LP). Descriptive statistics was used to explain the distribution of the demographic characteristics of the participants. Bivariate and multivariate analyses were performed to detect possible relationships and trends. Comparisons for some outcomes were made between respondents from the project sites and those from the control sites. For other outcomes, non-clients from the project sites were compared with those from the control sites. For some outcomes, the comparison was made between project clients and non-clients (both those from the project sites and those from the control sites). The Mantel Haenszel chi-square test was used and confidence intervals were computed to determine statistical significance. A statistically significant difference was determined at a p-value of less than 0.05.



Results

Client coverage

The estimated total number of MARPs in the TUMAR project areas was 10,450. Among injection drug users, the estimated population size ranged from 900 in Kurgan Tube, Tajikistan, to 2,000 in Urgut, Uzbekistan and totaled 6,651. Among sex workers, the estimated number ranged from 950 in Khujand, Tajikistan, to 2,000 in Osh, Kyrgyzstan and totaled 3,142. An additional 176 sex workers were also injection drug users.

During the 18-month implementation, a total of 10,161, or 97% of the estimated total number of MARPs, were ever reached with services provided by TUMAR. 52% of the estimated total number of MARPs was reached five or more times during the life of TUMAR. This group of clients had regular contact and is considered to have been covered by TUMAR. 33% of ever-reached IDUs and 37% of ever-reached sex workers used the drop-in centers, while 74% of ever-reached IDUs and 80% of ever-reached sex workers were contacted through outreach. This indicates that outreach services were more popular, but drop-in centers still attracted a substantial number of MARPs. (Tables 5 and 6 at the end of this chapter show project coverage and volume of service usage).

Knowledge and behavior change among IDUs

Respondents in both the project and control groups were similar in age and length of time involved in injecting drugs. They differed somewhat in their choice of drugs. Project site respondents were most likely to inject heroin (OR=21.2; 95% CI:15.4-29.1), while control site respondents were split between heroin and opium use.

Participation in project activities, gender, and the type of drug used had the most influence on

the injecting behavior of IDUs. Thus, only 4% and 5% of respondents from the project site reported using needles and syringes that were previously used by someone else or passing his/her own needle and syringe to someone else during the last month and the last 6 months, respectively, compared to 37% and 39% among controls. Heroin users were more than two-and-a-half times less likely to report sharing needles and syringes during the last month and during the last 6 months (OR=2.6; 95% confidence intervals [CI]:2-3.4). In both groups, women were nearly two-and-a-half times more likely than men (OR=2.5; 95% CI:1.5-4) to report safer injecting behaviors (never shared needles). Controlling for gender and type of drug used, project clients were more than 18 times more likely than non-clients to report safe injecting behaviors (OR=18.4; 95% CI:12.3-27.7), when asked about injecting practices over the last month, and more than 13 times more likely (OR=13.6; 95% CI:9.4-19.8) when asked about the last 6 months. Non-client respondents from the project groups were almost 5 times more likely to practice safer injecting behaviors during the last month (OR=4.8; 95% CI:1.7-13.2) and almost 3 times more likely during the last 6 months (OR=2.8; 95% CI:1.3-6.2) than respondents (non-clients) from the control groups. When asked about sexual behaviors and knowledge of HIV transmission modes and prevention methods, no difference was found between the two groups of non-clients.

Frequent clients of the project (five or more contacts) were almost five times more likely than less-frequent clients (1-4 contacts) (OR=4.9; 95% CI:1.5-16.7) to report safer injecting practices over the past 6 months. There was no difference in behaviors between those clients who were contacted once and those who had from 2-4 program contacts.

Among IDUs who were sexually active, 54% from the project sites reported always using condoms during the last 12 months, compared to 28%

from control sites reporting same. Among respondents from the project sites, 60% reported using condoms during last sex, compared to 37% among controls. The odds of reporting regular condom use was almost 11 times greater (OR=10.9; 95% CI:7.1- 16.6) among clients of the program who also reported never sharing needles and syringes during the last 6 months, as compared to non-clients. Less than 24% of control group respondents reported never sharing needles during the last 6 months and always using condoms during the last 12 months, compared to 52% of project clients.

Nearly all IDUs from the project sites correctly identified either sex (98%), or injections (96%), as modes of HIV transmission, while only 64% from control sites identified sex and only 56% identified injections. 94% of project respondents 56% from control groups identified both injecting and sexual modes of HIV transmission; 89% from project and 52% from control groups could name two main modes of transmission and had no misconceptions about HIV transmission while only 36% of IDUs from project sites and 9% from control sites correctly identified all four main modes of HIV-transmission* and had no misconceptions. When analyzed independently, heroin users were more likely than opium users to name both unprotected sex and sharing needles and syringes during injection as modes of HIV transmission (OR=2.5; 95% CI:1.9- 3.1). After adjusting for kind of drug used, the odds of clients knowing two modes of HIV transmission (sexual and via injections) increased to more than 18 times than that of non-clients (OR=18.4; 95% CI:12.9-26.1). Project clients were slightly better-informed about HIV infection (OR=1.9; 95% CI:1.6-2.4), with 72% correctly answering that an HIV-infected person can look healthy, as compared to 57% of the control group.

* Sexual, during injections, blood transfusion and from HIV-infected mother to her child during pregnancy, labor, or breastfeeding.

Less than 0.5% of project clients reported STI symptoms, while in the control group this figure reached 4%. However, logistical regression analysis showed no statistically significant interaction between being a client and reporting any STI symptoms.

IDUs from project sites were more than twice as likely as controls (OR=2.5; 95% CI:2.1-2.8) to have ever had an HIV test, and more likely to have had recent (in the past 6 months) HIV tests (OR 0.6; 95% CI:0.4-0.8) (58% vs. 44%). (See Table 3 at the end of this chapter for detailed comparisons of behavior and knowledge results among IDUs from the end-line survey).

Why IDUs engage in HIV risk behaviors

When IDUs in both project and control sites were asked why they shared needles and syringes, 81% replied that it was because of a lack of money; 10% said they did not have access to clean needles and syringes, and 12% reported it was because they trust their partner, because everybody does it, or because when they are high they do not really think about it. Asked why they do not always use condoms, IDUs said it was because of lack of money (45%); they do not like condoms (17%); they trust their partner (17%); they have a regular partner (14%); they did not have condoms with them (6%); and because their partner dislikes condoms (2%). Finally, asked why they have not undergone an HIV test, IDUs said they did not want to get tested (34%); they did not think about getting tested (32%); they were afraid (22%); they did not think it was necessary (8%); and the HIV testing location was too far away (3%).

Knowledge and behavior change among sex workers

Respondents at both the project and control sites were similar in age, length of time involved in sex work, number of clients seen in a month,