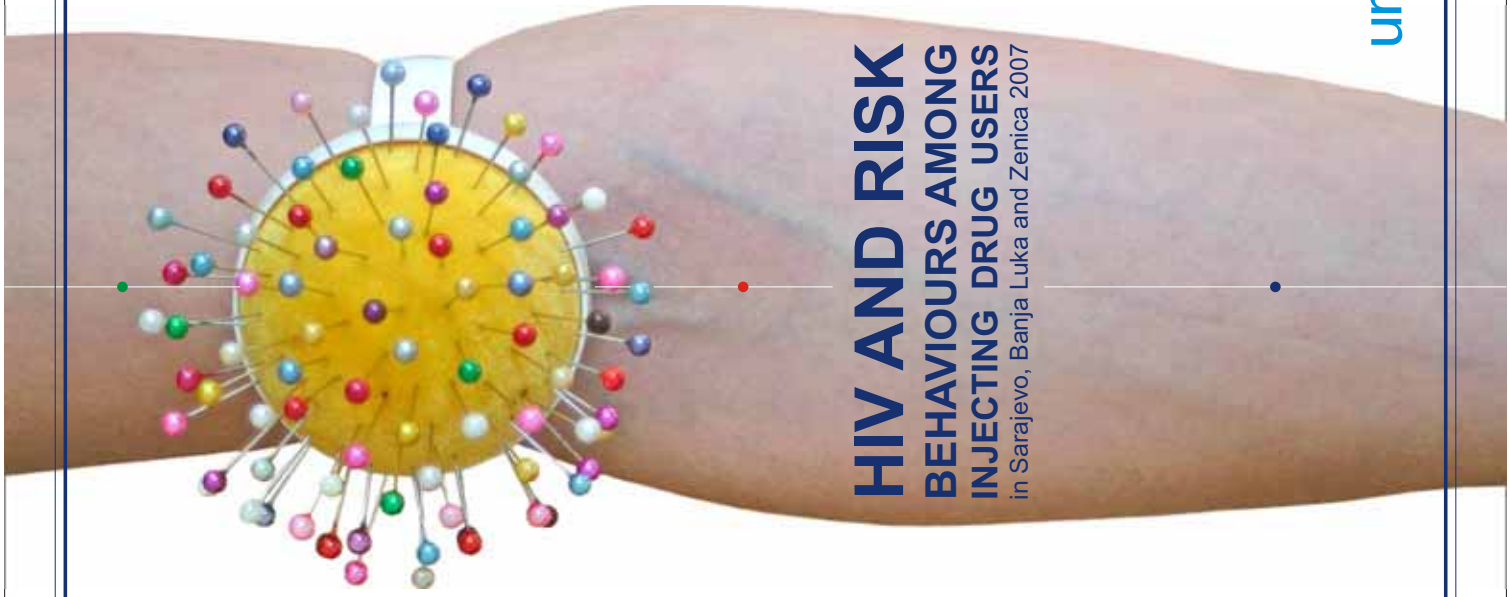




Report on results:  
**BIOLOGICAL AND  
BEHAVIOURAL  
SURVEY AMONG  
INJECTING  
DRUG USERS**  
Bosnia and Herzegovina, 2007

Prevalence of HIV and  
other parenterally and  
sexually transmitted  
infections and risk  
behaviours among  
injecting drug users  
in Sarajevo  
Banja Luka  
and Zenica



**HIV AND RISK  
BEHAVIOURS AMONG  
INJECTING DRUG USERS**  
in Sarajevo, Banja Luka and Zenica 2007



## Foreword

Children and adolescents are our future, but this future can be jeopardized if their health and development is at risk.

UNICEF and its partners work to educate and inform adolescents, especially those most at risk, of the consequences of risky behaviours and support the development of policies and services to assist adolescents in developing safely into adulthood.

UNICEF in Bosnia and Herzegovina has been working to enhance the knowledge base on the behaviours and attitudes of young people for more than five years. UNICEF conducted a Rapid Assessment and Response (RAR) on Especially Vulnerable Young People in 2002. This study provided the first primary source data in the country on the behaviours of young people that place them at risk of STIs, including HIV. The RAR study was followed by research on Young People who Sell Sex (YPSS) in 2005, which examined risk behaviours, including transactional sexual behaviour, among young people. This study provides further information on a specific target population.

According to official data, the main mode of HIV infection transmission in B&H is heterosexual, although there are variations in transmission modalities within sub-groups. For instance, a steady growth of HIV infection through injection drug use is noticeable and has already surpassed sexual transmission between MSM as the primary transmission mode according to government figures.

As part of UNICEF's ongoing efforts to support Bosnia and Herzegovina's HIV/AIDS response, particularly by strengthening the system for monitoring and evaluation and introducing the second generation of HIV Surveillance, a biological and behavioural surveillance study (BBS) of injecting drug users (IDUs) was organised by UNICEF in 2007. Information was collected on the prevalence rates of HIV, hepatitis B, C and syphilis, as well as the specific drug-related and sexual behaviours of this sub-population.

The study results presented in this report will serve as baseline data for UN General Assembly Special Session (UNGASS) indicators, which should be reported regularly by all countries, and for the Global Fund's HIV project indicators related to IDUs. This data will also contribute to the ongoing development of the National Strategy of Supervision Over Narcotic Drugs, Prevention and Suppression of the Abuse of Narcotic Drugs in BiH.

It is our hope that these study results will provide current and relevant information on the prevalence of HIV among drug-injecting communities in the three largest cities in BiH, and will support the efforts of policy-makers to deliver sustainable, targeted interventions for those individuals most at risk of contracting HIV, including adolescents.

We would like to sincerely thank the Swedish Government, SIDA and Irish Aid for their generous contribution to this survey, as well as all our partner organisations that helped to carry out this study.

*June Kunugi*  
Representative  
UNICEF Bosnia and Herzegovina

## Prevalence of HIV and other parenterally and sexually transmitted infections and risk behaviours among injecting drug users in Sarajevo, Banja Luka, and Zenica

Publisher: **UNICEF** Bosnia and Herzegovina

Study coordination: **UNICEF** Bosnia and Herzegovina

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The opinions expressed in this publication are those of the contributors and do not necessarily reflect the policies or views of UNICEF, SIDA and Irish Aid.

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**UNICEF, 2007, Biological and Behavioural Survey among Injection Drug Users, Bosnia and Herzegovina: UNICEF** Bosnia and Herzegovina

## Contents

Acknowledgments.....	5
Executive summary.....	7
<b>1. Introduction.....</b>	<b>9</b>
<b>2. Objectives of the survey.....</b>	<b>13</b>
<b>3. Survey methods and data collection procedure.....</b>	<b>17</b>
Laboratory tests.....	21
Training.....	21
<b>4. Results</b>	
<b>Sarajevo.....</b>	<b>23</b>
Demographic characteristics.....	25
Drug use history.....	25
Injecting and needle sharing practices.....	25
Police and prison experience.....	26
Knowledge of HIV/AIDS and risk assessment.....	26
Sexual history.....	26
Sexual behaviour.....	26
Condoms and reproductive health.....	27
Drug treatment and prevention.....	27
Prevalence of sexually and parenterally transmitted infections.....	27
Results for respondents aged 18-24 years.....	27
<b>Banja Luka.....</b>	<b>29</b>
Demographic characteristics.....	31
Drug use history.....	31
Injecting and needle sharing practices.....	31
Police and prison experience.....	32
Knowledge of HIV/AIDS and risk assessment.....	32
Historija seksualnih odnosa.....	32
Sexual behaviour.....	32
Condoms and reproductive health.....	33
Drug treatment and prevention.....	33
Prevalence of sexually and parenterally transmitted infections.....	33
Results for respondents aged 18-24.....	33
<b>Zenica.....</b>	<b>35</b>
Demografske karakteristike.....	37
Historija korištenja droga.....	37
Prakse ubrizgavanja i zajedničkog korištenja igala i šprica.....	37
Police and prison experience.....	38
Knowledge of HIV/AIDS and risk assessment.....	38
Historija seksualnih odnosa.....	38
Sexual behaviour.....	38
Condoms and reproductive health.....	38
Drug treatment and prevention.....	38
Prevalence of sexually and parenterally transmitted infections.....	39
Results for respondents aged 18-24.....	39
<b>5. Discussion.....</b>	<b>41</b>
<b>6. Policy recommendations and conclusion.....</b>	<b>47</b>
Policy recommendations.....	50
<b>7. References.....</b>	<b>53</b>
<b>8. Appendix 1 - Survey staff.....</b>	<b>57</b>
<b>9. Appendix 2 - Results tables (All age groups).....</b>	<b>on CD</b>
<b>10. Appendix 3 - Results tables (Age group 18-24).....</b>	<b>on CD</b>
<b>11. Appendix 4 - Questionnaire.....</b>	<b>on CD</b>

## Acknowledgments

Our thanks go out to the diligent survey staff who managed to successfully implement a complex methodology in the face of many challenges.

We would specifically like to thank SIDA and IrishAid for their generous financial support.

We are also grateful to NGOs Proj (Sarajevo), Margina (Zenica), Viktorija (Banja Luka), Clinical Center of University in Sarajevo, Cantonal Hospital in Zenica, Clinical Centre in Banja Luka and many other institutions that have indirectly contributed to the success of the survey, such as entity ministries (Federal Ministry of Health and RS Ministry of Health and Social Welfare), municipalities and police departments.

We give special thanks to the Entity HIV/AIDS Coordinators, the team from Knowledge Hub for Capacity Building in HIV/AIDS Surveillance, "Andrija Stampar" School of Public Health, Medical School, University of Zagreb, the team from the London School of Hygiene and Tropical Medicine, and UNICEF Regional Office in Geneva.

Jedranka Mimica and Milena Simic-Lawson must be recognized individually for their contribution to the study preparation.

Our particular gratitude goes to survey participants.

## List of Acronyms

ASSPH	Andrija Štampar School of Public Health
HBeAg	Hepatitis B virus "e" antigen
HBSAg	Hepatitis B virus surface antigen
HBV DNA	Hepatitis B virus deoxyribonucleic acid
HCV	Hepatitis C virus
HIV	Human immunodeficiency virus
IDU	Injecting drug users
NGO	Non-governmental organisations
RDS	Respondent-driven sampling
RDSAT	Respondent-driven sampling analysis tool
STI	Sexually transmitted infections
TPHA	Treponema pallidum haemagglutination assay
UNGASS	United Nation General Assembly Special Session on HIV/AIDS
UNICEF	United Nations Children's Fund
VDRL	Veneral disease research laboratory test

## Executive summary

This report presents the results of the first population-based survey on the prevalence of HIV and other parenterally and sexually transmitted infections (STIs) among injecting drug users (IDUs) in Sarajevo, Banja Luka, and Zenica in Bosnia and Herzegovina. Under the coordination of UNICEF, data collection was conducted by three NGOs – "PRO" in Sarajevo, "Viktorija" in Banja Luka, and "Margina" in Zenica. Technical assistance in survey preparation, design and data analysis was provided by the Knowledge Hub for Capacity Building in HIV/AIDS Surveillance based at the "Andrija Štampar" School of Public Health, University of Zagreb, Croatia. The study was initiated and funded by the UNICEF office in Bosnia and Herzegovina, thanks to a SIDA contribution.

Respondent-driven sampling (RDS) was the method used to recruit IDUs. It is a type of sampling most commonly used to recruit members of groups most at risk of HIV infection into a survey using their social networks, particularly in settings where their behaviours are stigmatised and/or illegal. This is a type of probabilistic sampling method that allows us to draw inferences about the population from which the sample was drawn. The survey was successfully completed in all three cities in an average period of 10 weeks. The final sample sizes were 260 in each city. All three surveys took place in locations selected by the NGOs that were conducting the survey with the aim to ensure confidentiality and anonymity to the participants. Data were not disaggregated by sex due to very low number of female respondents.

An estimated one half of the IDUs in Sarajevo and slightly more than a quarter in Zenica experienced their first sexual intercourse before the age of 15. Having more than one sexual partner in the past year was reported by 62 percent of respondents in Sarajevo, 63 percent in Banja Luka and 58 percent in Zenica. Having casual partners in the past year was common and reported by slightly more than a half of respondents in Sarajevo and Zenica and 67 percent in Banja Luka. A quarter of those with casual partners reported always using condoms over the past month in Sarajevo and Banja Luka, and a third in Zenica. Paying for sex was most common in Zenica (13 percent) and the least common in Sarajevo. Approximately one third of IDU population in each city has been estimated to have been sharing needles and syringes in the month preceding the survey. A close friend is the most common person with whom sharing of injection equipment occurred. The median age of the first use of drug of any kind was in the range of 15–17 years, while the median age of the first drug injection was 20 years. Private houses and apartments were estimated to be the most common places where drug injection takes place, followed by shooting galleries. More than 90 percent of IDU respondents in all three cities have injected heroin in the last month.

A very small number of IDUs tested positive for HIV; one person in Sarajevo, one person in Banja Luka and no one in Zenica. The prevalence of Hepatitis C was high, reflecting high prevalence of sharing injecting equipment: 46 percent in Sarajevo, 43 percent in Banja Luka and 19 percent in Zenica. The prevalence of Hepatitis B virus surface antigen was 0.5 percent in Banja Luka, 3.6 percent in Zenica and 6.9 percent in Sarajevo. No one was diagnosed with syphilis in Banja Luka or Sarajevo, and only one person tested positive in Zenica.

Data analysis on the age group 18–24 was performed on a non-weighted data set due to sub-samples of insufficient size to create population estimates. Data on young people aged 18–24 suggest that the majority started injecting when they were younger than 18. Sharing of injecting equipment in the past month was most common in Sarajevo (among 54.7 percent of respondents) and slightly less common in Zenica (39 percent) and Banja Luka (37.7 percent). The average number of partners in the past year ranged from 3–5, which suggests a substantial partner change rate. One half of young IDUs in Sarajevo reported having casual sexual partners in the past year, while that proportion was much higher in Banja Luka (75.6 percent) and in Zenica (71.8 percent). The use of condoms during most recent sexual intercourse with a causal partner ranged from 65 percent in Sarajevo to 42.5 percent in Banja Luka and 41.5 percent in Zenica. No one was diagnosed with HIV and syphilis, while HCV infection rates were similar for Sarajevo and Banja Luka (36 percent and 34.4 percent, respectively) while only 6.1 percent of young IDUs in Zenica were found HCV infected.

The survey results indicate an urgent need to increase the provision of harm reduction services and outreach services to IDUs, which includes the provision of clean needles and syringes, condoms, HIV and HCV testing or referral to such services, and advice on HIV and STI prevention and care. There is also a strong need to actively promote such services to IDUs, as the majority did not know of any support services in their cities and many did not know where they could get an HIV test. Access to confidential and anonymous testing for HIV and HCV should be provided and facilitated, as the majority of respondents were not tested before the survey. There is also a need to work with police as arrests and imprisonments are common. The very low number of IDUs who tested positive for HIV and syphilis is challenging to interpret in the context of the presence of substantial levels of high risk injecting, sexual behaviours and the high prevalence of HCV. It may be due to low levels of HIV and STI prevalence in their sexual and drug using networks. HCV prevalence was high, which indicates the high burden of this infection, particularly in Sarajevo and Banja Luka, and the possibility of HIV transmission due to sharing of injecting equipment.

It can be concluded that, the current prevalence of HIV and syphilis is likely to be low in these three cities. In the context of the high prevalence of HCV, however, the low prevalence of other infections measured should be seen as a temporary window of opportunity to prevent the spread of HIV and other parenterally and sexually transmitted infections in the population. This should be addressed through a rapid scale-up, including increased visibility and reach, of harm reduction services, particularly those provided through community outreach.

## Report on results: BIOLOGICAL AND BEHAVIOURAL SURVEY AMONG INJECTING DRUG USERS Bosnia and Herzegovina, 2007

### Introduction

1.

<sup>1</sup> Transmitted via intravenous or intramuscular route, mainly by injecting

## 1. Introduction

The social nature of HIV means that it mainly affects those parts of the population whose behaviour exposes them to a higher risk of infection. Commercial sex workers, men who have sex with men, and injecting drug users have been found to be at the highest risk of infection in the developed world. Because of the stigma and illicitness of their behaviour, members of these groups tend to be hidden and particularly difficult to reach for surveillance purposes. This is one of the reasons why there is a scarcity of quality surveillance data when it comes to most-at-risk populations. This report presents results of the first probability-based survey of injecting drug users (IDUs) conducted in three cities in Bosnia and Herzegovina. It was organized with the goal of providing high quality data in order to more effectively monitor, understand, and prevent an HIV epidemic in Sarajevo, Banja Luka, and Zenica. The emphasis was on understanding the behavioural patterns of those in the age group of 18-24.

The survey was conducted by UNICEF in Bosnia and Herzegovina with financial support from Swedish International Development Cooperation Agency - SIDA and Irish Aid. Design, preparation and implementation of the survey were done in collaboration between UNICEF, the three nongovernmental organizations from each respective city and the Knowledge Hub for Capacity Building in HIV/AIDS Surveillance from the "Andrija Stampar" School of Public Health (ASSPH), University of Zagreb, Croatia. The three NGOs - "PROI" (Sarajevo), "Viktorija" (Banja Luka), and "Margina" (Zenica) - provided survey staff and facilities for survey implementation. ASSPH provided technical assistance in survey design, preparation and data analysis, while also offering continuous monitoring and assistance to survey staff throughout the data collection period.

The data presented in the report is organized into three main sections. The first section describes survey methods and gives an overview of the most important findings specific to each city. The second section is reserved for a discussion of some of the relevant findings that called for more detailed analysis. The final section is a collection of main policy recommendations based on acquired data. In addition to these three main sections, the survey questionnaire and full data tables are provided in the appendices. The final sample consisted of 780 active drug injectors, while the statistical software (RDSAT) required that 18 initial respondents be excluded from the analysis. Respondent-driven sampling was the method used for data collection in order to yield a probabilistic sample of the target population. The data were gathered between early May and late July 2007.

**Report on results:  
BIOLOGICAL AND  
BEHAVIOURAL  
SURVEY AMONG  
INJECTING  
DRUG USERS  
Bosnia and Herzegovina, 2007**

**Objectives  
of the survey**

**2.**

## 2. Objectives of the survey

The main survey objectives were to determine the prevalence of HIV, HBV, HCV, and syphilis in the population of injecting drug users in Sarajevo, Banja Luka, and Zenica, and to assess the risk behaviour and social aspects of HIV transmission through providing baseline data that can inform and guide policy measures related to HIV prevention and control in BiH. This was the first survey of its kind in the country, and one of very few in the region. It is hoped that in the near future, the national surveillance system will be capable of periodically conducting probability-based surveys that would yield high quality data and allow for effective and reliable monitoring of trends related to the HIV epidemic in the country.

**Report on results:  
BIOLOGICAL AND  
BEHAVIOURAL  
SURVEY AMONG  
INJECTING  
DRUG USERS  
Bosnia and Herzegovina, 2007**

**Survey  
methods  
and data  
collection  
procedure**

**3.**

### 3. Survey methods and data collection procedure

Populations most at risk of HIV infection, such as injecting drug users, men who have sex with men and commercial sex workers, are usually hidden and hard to reach with traditional sampling methods. Until recently, only convenience samples of these populations were used for surveillance and research purposes. These included regular snowball and targeted sampling or other methods to reach a specific part of the population. Respondent-driven sampling is a relatively new method that relies on social networks of survey participants in order to draw inferences about the general population network that they come from.<sup>1</sup> It results in a probabilistic sample that allows for a generalisation of the findings. The data from this type of survey are more valid than data obtained through convenience sampling. After its introduction in 1997, the RDS method has gone through many stages of development, and is now commonly used for surveillance purposes among hard to reach and "hidden" populations.<sup>2,3,4</sup>

RDS is a form of chain-referral sampling that relies on respondents recruiting each other into the survey. They are expected to recruit their peers from the target population people whom they know and who know them into the survey through a coupon-based recruitment process. In this way, recruitment chains are built and the sample progressively gains in size and diversity. These chains consist of waves that penetrate ever deeper into the population in order to reach its most hidden parts. The method accounts for homophily (in-group recruitment) and non-random selection of initial respondents (called "seeds") that are commonly used in chain-referral sampling methods, such as in snowball sampling.<sup>5</sup> One of its main characteristics is a built-in double incentive system that facilitates the development of the chains and attracts target population members to take part in the survey. The primary incentive is issued to the respondent for his or her own participation in the survey, while the secondary incentive is issued for each person he or she recruited into the survey, and who was both eligible and able to go through the whole survey process. In our case, respondents were allowed to recruit a maximum of three respondents. The primary incentive was 20 KM (14 USD), while the secondary incentive was 10 KM (7 USD). Those younger than 18 years could give blood for testing only if they had parental consent. In case they were not accompanied by parents, they could participate only in the behavioural part of the survey. The survey aimed to include people younger than 18 years of age in order to provide estimates of drug-related behaviours among younger IDUs. In order to succeed in recruitment of younger IDUs, two seeds (initial respondents) were included in Banja Luka and three in Sarajevo. There were attempts to include seeds younger than 18 in Zenica, but they were unsuccessful.

The survey was conducted in the facilities of participating NGOs from all three cities. Interviewing, collection of blood specimens, and issuing of incentives were the main activities that took place there. The survey staff consisted of two interviewers, two screeners, a coupon manager, site manager, medical technician, project manager, and the survey site supervisor at each respective location. All the staff members received training before the start of the survey. Interviewers conducted face-to-face interviews, and screeners screened recruited people to make sure they fulfilled the eligibility criteria. Eligible participants had to be living, studying or working in the respective city where the survey was taking place. They had to be older than 16, and had to have injected drugs in the previous month. Once screened and found eligible, they would be taken to the interviewer, medical technician, and the final stage would be with the coupon manager. The coupon manager was responsible for giving out incentives, distributing recruitment coupons with which respondents were supposed to recruit their peers, and for maintaining the coupon tracking form an Excel sheet with the coupon information and incentives payment data for all participants.

The survey was approved by the Ethical Committee of the Clinical Centre of the University of Sarajevo (Sarajevo), Ethical Committee of the Cantonal Hospital in Zenica (Zenica), and the Ethical Committee of the Agency for Drugs, Republic of Srpska (Banja Luka). Data were collected from early May until late July, and the desired sample sizes were reached in each city. Every city had its own multi-sectoral Local Advisory Board that consisted of relevant

stakeholders coming from various ministries and public institutions such as Institutes for Public Health, police, and non-governmental organizations. Their role was to provide support for the survey and an external evaluation of its implementation, as well as linking and partnership building for future interventions and initiatives. All study participants received pre-test counselling, and were able to find out their test results. This was done in cooperation with local hospitals and their laboratories that provided both the health professional for post-test counselling and medical technicians at the site. They also performed laboratory analysis of collected blood specimens.

The questionnaire was the same for each city and contained 101 questions. Altogether there were 15 sections assessing various characteristics related to HIV risk-taking behaviour among IDUs. They included questions on demographic characteristics, drug use, sexual health and behaviour, police and prison experiences, HIV testing and knowledge of HIV, and drug addiction treatment. Informed consent was obtained from all survey participants. A full version of the questionnaire can be found in the appendices. The questionnaire used standardised questions and variables based on the questionnaire of the Family Health International and the UNGASS core indicators which each country will have to report to the UN in 2008 on progress in implementation of the Declaration on Commitment to HIV/AIDS endorsed at the UN General Assembly Special Session (UNGASS) on HIV/AIDS, New York, 2001. The indicators are used for assessing attitudes, knowledge and risk behaviour of injecting drug users. The questionnaire was pre-tested through individual interviews with target group members of diverse experiences of injecting drug use. The emphasis was placed on question wording and ordering, duration of questionnaire administration, and clarity of questions. Pre-testing was conducted in the city of Banja Luka.

Data analysis was performed with Respondent-driven Sampling Analysis Tool (RDSAT) statistical software specifically designed for the analysis of data collected with RDS method.<sup>6</sup> This software has a built-in algorithm that calculates appropriate weights, taking into account the personal network size of respondents and the degree of homophily. In addition to strictly following the RDS-specific data gathering procedure, RDS data can only be considered representative of the network from which the sample was drawn if it is analyzed with RDSAT. Data were not disaggregated by sex due to very low number of female respondents: 7.3 percent in Sarajevo (n=19), 7.7 percent in Banja Luka (n=20), and only 5.4 percent in Zenica (n=14).

All results are shown in the tables in the appendices for the whole sample (RDS population estimates) and for the sub-sample of 18-24 year-olds (non-weighted sample proportions). In the initial phase of the project, means of attracting younger IDUs into the survey were explored such as awarding them with higher primary incentives. This was not eventually implemented because it would have caused severe disruption and irregularities in the recruitment process (e.g. many older IDUs reporting lower age in order to get higher incentives for the participation in the survey). This is especially difficult to avoid as survey is anonymous and there is no precise way of ascertaining respondents' age. Another way in attempting to reach more young respondents was through including younger IDUs among initial respondents (seeds), which was described previously.

The following formula has been used to calculate the number of IDUs per site.

$$N = 4 * z_{\alpha}^2 * P * (1-P) / W^2$$
$$N = 4 * 1.96^2 * 0.6 * (1-0.6) / 0.12^2$$
$$N = 256.04$$

-  $z_{\alpha}$  is a factor that corresponds to the desired confidence interval (for a 95 percent confidence level,  $z_{\alpha} = 1.96$ )

- P is the expected proportion of patients with the outcome of interest. In this case, P = proportion of IDUs that shared needles the last time they injected. It was estimated that the value of that indicator would be 60 percent

- W is the width of the interval. In this case, the width of the confidence interval i.e. the width for a margin of error was estimated to be +/- 6 percent is 0.12

### Laboratory tests

Testing in Sarajevo was done for: **sypphilis** (TPHA, Newmarket Laboratories and VDRL carbon antigen), **HCV** (AXSYM MEIA, Abbott GmbH Diagnostika), **HBsAg** (Enzygnost, Dade Behring), **HIV** (Enzygnost anti-HIV1/2, Dade Behring; confirmation with HIV BLOT 2.2 Genelabs Diagnostic Version 2.2 Western Blot/immunoblot).

Testing in Banja Luka was done for: **sypphilis** (TPHA; Newmarket Laboratories); **HCV** (Innotest HCV Ab IV, Innogenetics), **HBsAg** (Enzygnost HBsAg 5.0 EIA, Dade Behring), **HIV** (Enzygnost anti-HIV1/2, Dade Behring).

Testing in Zenica was done for: **sypphilis** (TPHA, Newmarket Laboratories); **HBsAg** (Genedia HBsAg ELISA 3.0, Green Cross Life Science Corp), **HCV** (Innotest HCV Ab IV, Innogenetics), **HIV** (Enzygnost anti-HIV1/2, Dade Behring; confirmation with Abbott Laboratories, Axym HIV test).

### Training

Three-day training for the site staff was held in Banja Luka. The training included the presentations on the concepts of RDS, staff roles and responsibilities and role playing exercises. The emphasis was placed on successful performance of particular roles in the survey process and on instructing staff that performed face-to-face interviews. The site supervisory visits were carried out during the survey implementation and follow-up instructions were issued to site staff in order to improve their performance.

As a part of the preparations for BBS among IDUs, UNICEF has organized basic/advanced training on VCCT for 22 health professionals and NGO activists. Purpose of the training was to provide attendees with practical skills and knowledge on interviewing techniques and confidentiality. Further on, UNICEF provided technical support to the research staff through its regular monitoring and site visits.

• **Prevalence of HIV and other parenterally and sexually transmitted infections and risk behaviours among injecting drug users**

## Sarajevo

### Results

4.

## Demographic characteristics

RDS population estimates indicate that the majority of the injecting drug users in Sarajevo are aged 25-34 (56.8 percent), while only 1.0 percent is older than 45 (Appendix 2). Men dominate the drug scene in the city, comprising more than 90 percent of its IDU population. Almost 70 percent have finished high school, and more than 80 percent are unemployed (Figure 1). Slightly more than half are single (57.6 percent), while about one quarter is in a steady relationship.

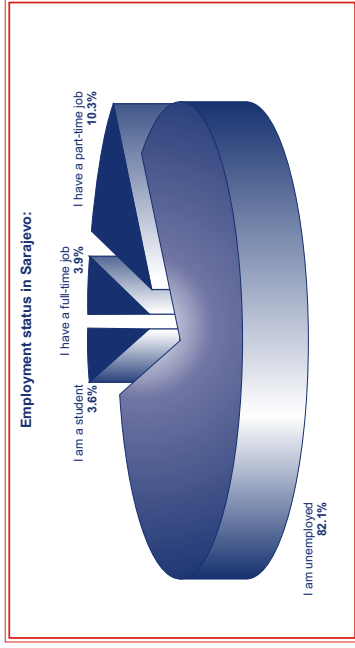


Figure 1. Employment status in Sarajevo

The most common type of person recruited by participants into the survey were people they knew, either a friend (49.7 percent) or an acquaintance (41.3 percent). Financial incentive was reported as the main reason for participation in the survey (72.9 percent), together with STI and HIV testing (58.8 percent and 46.6 percent, respectively). The mean network size in Sarajevo was 18.6 (range: 1-150).

## Drug use history

The mean age for first drug use experience is 16, with almost exactly half of the population having such an experience when they were younger than 15. Close to one third first injected drugs when aged 16-18, while the mean age at first injection is 21. Most members of the IDU population in Sarajevo have been injecting drugs for more than three years (62.4 percent), with only 2.7 percent have been IDUs for less than a year. Almost half (54.4 percent) inject two to three times a day. Private house or apartments are the most common places where drugs were injected in the past month. In the street or a park, deserted building, lobby of a building, and a shooting gallery have all been cited about quarter of the time as drug injection localities visited in the last month (25.2 percent, 28.7 percent). Heroin has no match as the most frequently injected drug in the last month (96.8 percent). It is also the type of drug that all respondents have injected in the last month, with liquid Methadone and Trodon estimated to be injected in the same period by 7.7 percent and 11.2 percent of the population, respectively.

## Injecting and needle sharing practices

About a third have shared needles/syringes with one or more persons in the last month, and the most commonly reported last time that this took place was between one and seven days (23.1 percent). Sharing practices usually occur among close friends (62 percent). Almost all reported trying to clean the needle before their last injection (94.7 percent). The median number of times

that the last needle/syringe was used before being thrown away was two, and 95.5 percent reported purchase in a pharmacy as the most common source of new needles and syringes.

### **Police and prison experience**

Slightly more than half of the IDU population is estimated to have ever been in prison (54.9 percent), of whom most have been imprisoned once (42.8 percent). About one fifth have injected drugs during their last imprisonment. A majority of IDUs have been arrested during the past year (64.7 percent).

### **Knowledge of HIV/AIDS and risk assessment**

Correct use of condoms has been reported by 82.9 percent as an effective means of HIV prevention, while use of already used needles/syringes is recognized as an HIV transmission route by an estimated 93.2 percent of the population. Only 7.1 percent think they are not personally exposed to the risk of HIV infection, while most consider the risk to be small (31.3 percent), moderate (26 percent) or high (24.8 percent).

### **Sexual history**

Not all respondents had had sexual intercourse in their lifetime, but large majority had (96.8 percent). Most had their first vaginal and/or anal sex when they were younger than 15 (54.1 percent), with the mean age for first having sex was 16. More than half have had two or more (62.1 percent) sexual partners in the last year.

### **Sexual behaviour**

Having sex with a steady partner in the last year was reported by 78.2 percent of respondents. Condoms were rarely used, with the estimation that 63.7 percent of the population never used a condom during sex with a steady partner in the last month. The figure is no higher when it comes to the last episode of vaginal and/or anal sex with steady partners at which occasion only 23.2 percent used a condom. Of the 52.9 percent of those who had sex with a casual partner in the last year, only 28.5 percent always used a condom, while 52 percent did not use a condom the last time they had vaginal and/or anal sex with a casual partner (Figure 2). A minor fraction of the population is estimated to have bought sex in the last year (4.1 percent), and 3.7 percent had ever taken money, goods or drugs in exchange for sex.

### **Condoms and reproductive health**

Tobacco shops and gas stations are the main source of condoms for the IDU population in Sarajevo (41.8 percent), and pharmacies are second (14.9 percent). Genital ulcers and genital discharge were reported by 5.5 percent of participants. Almost 80 percent know where they can get an HIV test, but only 32.5 percent have taken one more than once. 65.8 percent have taken an HCV test, and 92.9 percent of this group know the result.

### **Drug treatment and prevention**

Population estimates say that 77.4 percent of the population does not know any organisations that are working on HIV prevention among injecting drug users in the city, nor did they get any sterile needles/syringes from an NGO or a governmental institution in the last year (94.4

Frequency of condom use during last month with steady and casual partners in Sarajevo:

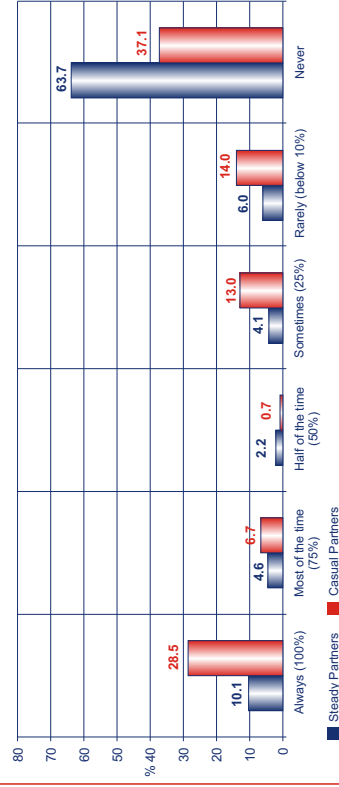


Figure 2. Frequency of condom use in Sarajevo

percent). Most have been in treatment for drug dependence (72.4 percent), and 25.6 percent are currently in treatment. Hospital detoxification with use of medications and self-help were the most commonly cited means of treatment (23.5 percent and 22.9 percent, respectively).

### **Prevalence of sexually and parenterally transmitted infections**

There is a high HCV prevalence, estimated to be 46.2 percent of the population, and a moderate prevalence of HBs antigen (6.9 percent). There was only one case of HIV diagnosed in this survey, and none of the respondents tested positive for syphilis.

### **Results for respondents aged 18-24 years**

For this age group, in all three cities, analysis was performed on a non-weighted data set due to insufficient sample size to obtain relevant population estimates with RDSAT statistical software. The results are presented in the Appendix 3. There were altogether 75 respondents in the Sarajevo sample in the age range 18-24. About 80 percent were male, 53.3 percent had finished a high school, and 81.3 percent were unemployed. The most often reported reason for participation in the survey was the financial incentive (66.7 percent).

A majority (68 percent) first used drugs of any kind when they were younger than 15, which is also the mean age for first drug use. Slightly more than a half had injected drugs for the first time when they were 18 years old or younger. In addition to a private house or an apartment (66.7 percent), a shooting gallery and a lobby of a building were also the commonly mentioned places of injecting in the past month (36 percent each).

All the respondents in this age range had injected heroin in the previous month. More than half (54.7 percent) had shared their injection equipment in the last month, and in most cases a person they were sharing with was a close friend (63.6 percent). By far the most common way of obtaining needles and syringes was through purchasing them in a pharmacy. Almost a half of younger injecting drug users in the sample had been in prison (42.7 percent), and of these 25 percent have injected drugs during the last imprisonment.

A large majority had had sex in their lifetime and the average age at the time of their first sexual intercourse was 16 years. The average number of sexual partners in the last year was three.

Most had sex with a steady partner in the last year (86.4 percent). The frequency of condom use in the last month was very low with only 10.5 percent reported always using condoms with steady partners, and 45.6 percent never had used them (Figure 3). Approximately three quarters of respondents did not use condoms during the last sexual intercourse with their steady partner.

About a half had had sex with a casual partner in the last year, and about one third reported having two or more casual sexual partners in the last month (35.7 percent). 65 percent used condoms at the last time they had sex, while exactly 50 percent of those who had sex with a casual partner in the last month reported always using condoms (Figure 3).

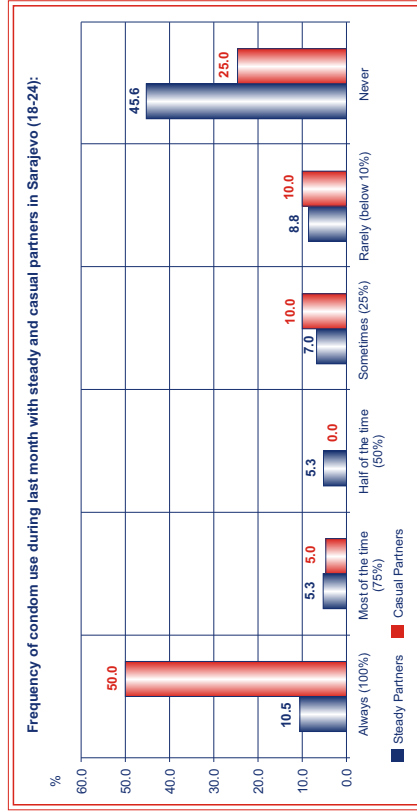


Figure 3: Frequency of condom use for young respondents in Sarajevo

The majority of respondents know where to get an HIV test (74.7 percent), although more than half (57.3 percent) had never taken one. The proportion is very similar when it comes to ever having taken an HCV test. In regards to HIV knowledge, 96 percent gave a correct answer to the question whether HIV can be transmitted by using an already used needle or syringe.

Very few respondents knew about any organizations that are working on HIV prevention among IDUs in Sarajevo (13.3 percent), while only one had received a sterile needle or a syringe from an NGO or a governmental institution in the last year. Most were in treatment for drug dependence (62.7 percent).

No one was found to be infected with HIV and syphilis but 36 percent were infected with HCV. HBs antigen was found in even 6.7 percent of young IDUs.

## Prevalence of HIV and other parenterally and sexually transmitted infections and risk behaviours among injecting drug users

### Banja Luka

## Results

# 4.

## Demographic characteristics

The majority of respondents in Banja Luka were older than 25 (59.1 percent), and the median age in the sample was 27 (Appendix 2). The injecting drug scene is predominantly men, with an estimated 93.2 percent of the sample. A majority have a high school education (74.4 percent), and only 19.9 percent are employed (Figure 4).

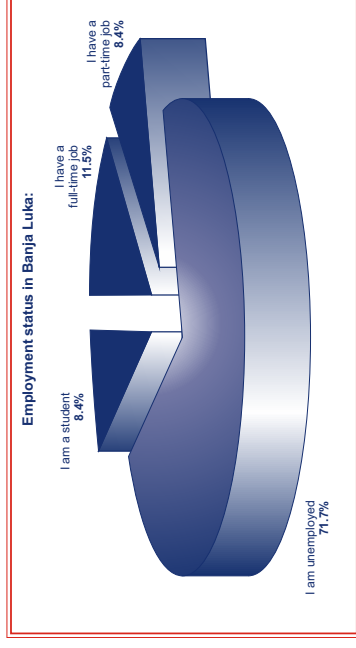


Figure 4: Employment status in Banja Luka

Only one person reported receiving the coupon for participation from a stranger, while most coupons were received from an acquaintance (50.3 percent), and 44.5 percent received it from a friend. The main reason for participation was an HIV test (49.8 percent), in front of an HCY test (34.6 percent) and a financial incentive (30.4 percent). The mean network size in Banja Luka was 21.7 (range: 3-150).

## Drug use history

More than a half of the population is estimated to have first used drugs before the age of 15. The large majority, however, first injected drugs when older than 18 (72.4 percent), and the estimated median age of the first injecting experience is 20 years. The median duration of injection drug use is 3.5 years, while most of the population has been injecting drugs for one to five years (54.2 percent). An estimated 26.9 percent of the population has injected drugs in a shooting gallery in the last month, but the most common place for injection was a private house or an apartment (78.2 percent). An overwhelming majority used heroin in the last month (95.4 percent), and heroin was also the most frequently injected drug in the last month, estimated to be used by 95.7 percent of injecting drug users in Banja Luka.

## Injecting and needle sharing practices

Population estimates indicate that 66.5 percent did not share needles/syringes with anyone in the last month. Of those who shared with one or more persons (33.5 percent), most of them did so with a close friend (46.1 percent), with almost 75 percent attempting to clean the shared needle/syringe before the last such sharing occasion. More than a half (55.6 percent) used the same needle twice or more times before disposing of it. Pharmacies seem to be the main source of needles and syringes (79.2 percent), and two was the median number of new needles/syringes obtained in the previous week.

## Police and prison experience

More than one third (36.6 percent) of injecting drug users in Banja Luka are estimated to have ever been in prison, of whom most have been imprisoned only once (51.2 percent). About 47 percent have been arrested once or more times in the past year, and 12.8 percent of those with prison experience injected drugs during their last imprisonment.

## Knowledge of HIV/AIDS and risk assessment

A reassuring statistic is that 92.7 percent of respondents know that HIV can be avoided by correct use of condoms, and even more (98.4 percent) are aware that HIV can be transmitted using already used needle/syringe. Nevertheless, only 55.6 percent had a correct answer to the question whether HIV can be transmitted by sharing food with an infected person. Regarding self-estimation of risk, most reported that the risk is small (45.5 percent).

## Sexual history

All the respondents confirmed ever having sex, with 16 as the median age for first having intercourse. Also, of all who answered the question, everyone reported having sex in the last year, with a median number of three sexual partners.

## Sexual behaviour

A steady partner was the most common type of sexual partner in the last year (72.6 percent), with casual partners following with 67.4 percent. It was rare that condoms were always used during last month with casual and steady partners 22 percent and 17.3 percent respectively. About one third (37.2 percent and 33 percent) have never used condoms with these types of sexual partners (Figure 5). Condom use during the last time they had sex does not vary greatly in regard to these two types of partners, with 61.2 percent not having used a condom during last vaginal and/or anal sex with a steady partner, and 65.8 percent not using it during last such sexual contact with a casual partner. An estimated 6.9 percent have paid for sex in the last year, while 1.7 percent had ever taken money, goods or drugs in exchange for sex.

## Condoms and reproductive health

Tobacco shops and gas stations were cited as the main source of condoms (30.1 percent), while pharmacy and store/drugstore ranked second with 18.8 percent each. A small proportion (4.8 percent) of respondents reported experience of ulcers or genital discharge in the last year. HIV and HCV testing is low as 60.9 percent had never had an HIV test, and more than half (50.9 percent) didn't know where this test can be done. The figure is even smaller in regard to HCV, with only 35 percent of respondents reported ever having been tested. Almost all of those tested know their test result.

## Drug treatment and prevention

An estimated 84.1 percent of IDUs in Banja Luka do not know about any organizations working on HIV prevention among IDUs in the city, and only 1.1 percent received a sterile needle/syringe from an NGO or a governmental institution in the last year. The majority have been in treatment for drug dependence (77.2 percent), with 26.8 percent currently in treatment. More than half of

Učestalost upotrebe kondoma u posljednjih mjesec dana sa stalnim i povremenim partnerima u Banja Luci:



Figure 5: Frequency of condoms use in Banja Luka

the respondents reported self-help (trying to get off by themselves) as the main type of treatment (59.9 percent), ahead of clinic rehabilitation program (16.8 percent).

## Prevalence of sexually and parenterally transmitted infections

Only one case of HIV was diagnosed, and there was no case of syphilis seropositivity measured by TPHA. However, HCV prevalence is high, with population estimates indicating that almost half of the population (43.4 percent) has an HCV infection. The prevalence of HBs antigens was 0.5 percent.

## Results for respondents aged 18-24

The results are calculated using an unweighted data set. There were 90 respondents aged 18-24 in the Banja Luka sample. About 85 percent were male, 73.3 percent had a high school education and 68.9 percent were unemployed. The most commonly reported reasons for participation in the survey were HIV and HCV test (50 percent and 34.4 percent respectively).

The median age at the time they first used any kind of drug was 14, and most were aged 18 or younger at first drug injection (60 percent). Many had shared needles and/or syringes with one or more persons in the last month (37.7 percent), and in most cases this person was a close friend (53.2 percent). For 77.8 percent, the most common source of injection equipment was the pharmacy.

The median age for first sexual intercourse was 16 years. The median number of sexual partners in the last year was 3. In the last year, 76.7 percent had had sex with a steady partner, and only 15.2 percent had always used condoms with this type of partner in the last month (Figure 6). More than half did not use a condom during their last sexual intercourse with their steady partner (62.2 percent), while it should be noted that 68.9 percent of respondents had a steady partner who is not an injecting drug user.

About three quarters of younger respondents in Banja Luka had sex with a casual partner in the last year. 25 percent always used condoms with their casual sexual partners in the last month, while 42.5 percent used one during the last such occasion. For exactly a half of respondents, these casual partners were not injecting drug users.

Učestalost upotrebe kondoma u posljednjih mjesec dana sa stalnim i povremenim partnerima u Banja Luci (18-24):

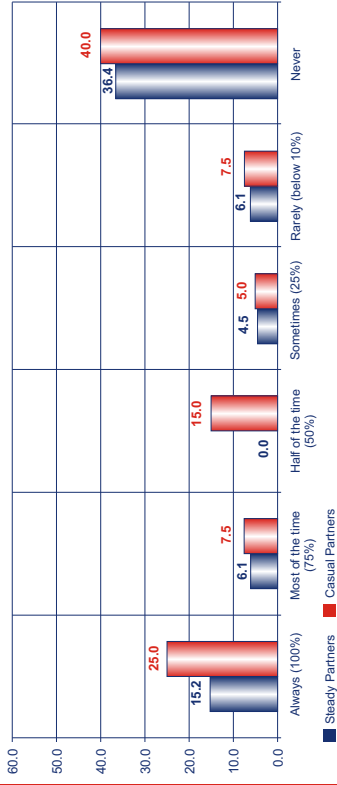


Figure 6: Frequency of condom use for young respondents in Banja Luka

The majority of respondents do not know where to get an HIV test (62.2 percent), and 22.2 percent had taken an HIV test once or more. When it comes to HCV testing, figures remain almost the same. A large majority knew that HIV can be transmitted by using already used needles and/or syringes, while 85.6 percent of respondents did not know about any organizations working on HIV prevention among IDUs in their city. No respondents had received sterile needles and/or syringes from an NGO or a governmental institution in the last year.

No one in this age group was infected with HIV, HBV, and syphilis, while 34.4 percent were infected with HCV.

## Prevalence of HIV and other parenterally and sexually transmitted infections among risk behaviours among injecting drug users

### Zenica

### Results

4.

## Demographic characteristics

The estimated median age of the IDUs in Zenica is 28, while the majority falls within the age range 25-34 (45.7 percent) (Appendix 2). Men account for the vast majority of the sample (92.8 percent), as is the case with Banja Luka and Sarajevo. Most have high school education (64 percent), and almost all are unemployed (90.9 percent), while only 5.3 percent have a full time job (Figure 7). Slightly more than half of participants received a coupon from a friend (52 percent), followed by an acquaintance (39.3 percent). An HIV test was the most commonly cited reason for participation in the survey (84.8 percent), in addition to STI testing (42.3 percent), and receiving advice about HIV/AIDS (27.2 percent).

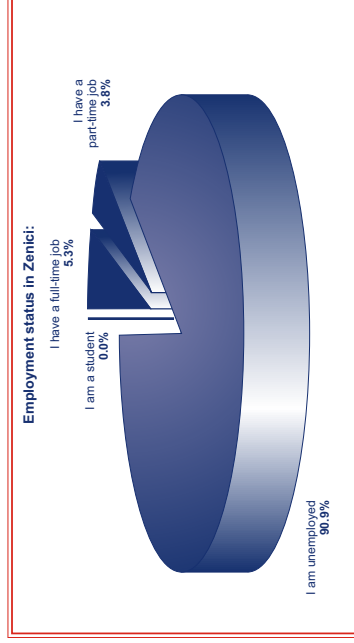


Figure 7. Employment status in Zenica

## Drug use history

About one third of the population is estimated to have first used drugs when younger than 15, and more than third (39.5 percent) were between 16-18. The median age at the first drug injection was 20, while most were older than 18 (70.3 percent) when they first injected. A majority have been injecting drugs for more than three years (56.7 percent), with a median duration of four years. Most of the population injected drugs two to three times a week in the previous month (22.2 percent), followed closely by those who injected drugs two to three times a day (16.4 percent). A private house or an apartment was the most common place for injecting drug use in the last month (66.4 percent), after which comes shooting galleries, estimated to have been visited by 24.9 percent of injecting drug users in Zenica. Most who injected drugs under 18 years-of-age reported doing it in a shooting gallery (about 25 percent). Heroin was both the most frequently used drug in the previous month, and the type of drug most of the population injected in the previous month (94.5 percent and 96 percent respectively).

## Injecting and needle sharing practices

More than one third shared needles and/or syringes in the previous month (36.8 percent), and 18.4 percent of those did it with two or more persons. A close friend is the most often cited type of person the needle/syringe was shared with the last time when sharing occurred (76.4 percent). It is estimated that of those who shared equipment, most tried to clean a needle/syringe before last injection when sharing took place (80.7 percent). The needle and/or syringe used during the last injection were used more than two times before being thrown away 60.9 percent of cases. Pharmacies were referred to by 82.8 percent as the main source of needles and syringes.

## Police and prison experience

Somewhat less than half of the IDU population in Zenica is estimated to have been arrested during the past year (42.3 percent), while the majority have never been in prison (71.8 percent). Of those with prison experience, most have been in prison two or more times (59.9 percent). Sizeable proportion of IDUs (12 percent) injected while being in prison last time.

## Knowledge of HIV/AIDS and risk assessment

A large majority had correct answers to questions about means of HIV transmission and prevention, usually varying around 85 percent, with the exception of the question whether HIV can be transmitted by sharing food with an HIV infected person. A majority consider themselves to be exposed to some level of risk of HIV infection, while 22.7 percent estimate that there is no risk whatsoever.

## Sexual history

Avast majority had had a sexual intercourse in their lifetime (97.4 percent), with the mean age of 16 for first vaginal and/or anal sex. About one quarter were younger than 15 when they first had sex. Most had had two or more partners in the last year (57.7 percent), while 40.2 percent had had only one sexual partner.

## Sexual behaviour

A substantial majority of the population is estimated to have had sex with a steady partner in the last year (87.1 percent), with a percentage of condom use in the last month with this type of partner ranging from only 12.2 percent always using one to 45 percent never using a condom (Figure 8). During the most recent intercourse, 74 percent had not used a condom with a steady partner, and 19.2 percent of these partners are injecting drug users. Somewhat more than half had had sex with a casual partner in the last year (58.3 percent), and 32.7 percent said that they used condoms with casual partners in the previous month. Almost half did not use a condom during the last time they had sex with a casual partner. An estimated 13.7 percent have paid for sex in the last year, and reportedly condoms have always been used.

## Condoms and reproductive health

Tobacco shops and gas stations are the main source of condoms (55 percent), after which come pharmacies (11.9 percent), and drugstores (8.7 percent). More than half do not know where they can get an HIV test (54.4 percent), and 75.6 percent have never had one. 15.1 percent of those tested were required to take an HIV test. Clinic/hospital for infectious diseases was cited by a majority as the place where they had taken their last HIV test (84.2 percent), and most knew their test result (91.7 percent). Only 23.8 percent of the population reported being tested for HCV.

## Drug treatment and prevention

Population proportions indicate that 39.4 percent of the IDU population in Zenica know about some organizations that are working on HIV prevention among injecting drug users in the city, while only 7.7 percent received sterile needles/syringes from an NGO or a governmental institution in the last year. Most had an experience of treatment against drug dependence (56.8 percent), and slightly less than half are currently under treatment (46.5 percent).

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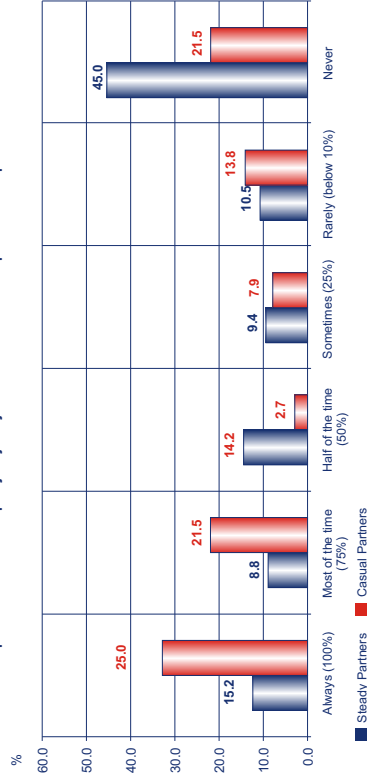


Figure 8: Frequency of condom use in Zenica

## Prevalence of sexually and parenterally transmitted infections

No one was diagnosed with HIV in Zenica, and only one person was diagnosed as being seroreactive on syphilis with TPHA. Prevalence of HBs antigen was 3.6 percent, while HCV prevalence was 18.9 percent.

## Results for respondents aged 18-24

As with the other two cities, the results were obtained on a sub-sample of 18-24 years old using unweighted data. Of 82 respondents in this age group in Zenica almost all were male. About three quarters had high school education, and 92.7 percent were unemployed. The main reported reason for participation in the survey was the HIV test.

The median age at first drug use was 16, while the median age at first injection was 18 years. Private houses and apartments were reported by 63.4 percent as the place where they injected drugs in the previous month, followed by a shooting gallery (32.9 percent). Heroin was injected by all in the previous month. Many younger respondents shared needles and/or syringes with someone in the last month (39 percent). Close friends and casual acquaintances were with whom the injection equipment was most often shared (60.5 percent and 18.6 percent respectively).

Many respondents were younger than 15 years at the time of their first sexual intercourse (39.8 percent). The median number of sexual partners in the last year was three. A large majority had had sex with a steady partner in the last year (91 percent), and 38 percent never used condoms with such partners in the last month (Figure 9). Even less (67.4 percent) used one during the last time they had sex with a steady partner. About 60 percent had steady partners who were not injecting drug users.

A majority had had sex with a casual partner in the last year (71.8 percent). Many had reported having sex with more than three casual partners in the previous month (60.7 percent). Only 28.3 percent always used condoms during sex with this type of partner in the previous month (Figure 9), while 58.5 percent did not use one at last such sex. A worrying finding is that 16.7 percent have paid for sex in the last year.

Učestalost upotrebe kondoma u posljednjih mjesec dana sa stalnim i povremenim partnerima u Zenici (18-24):

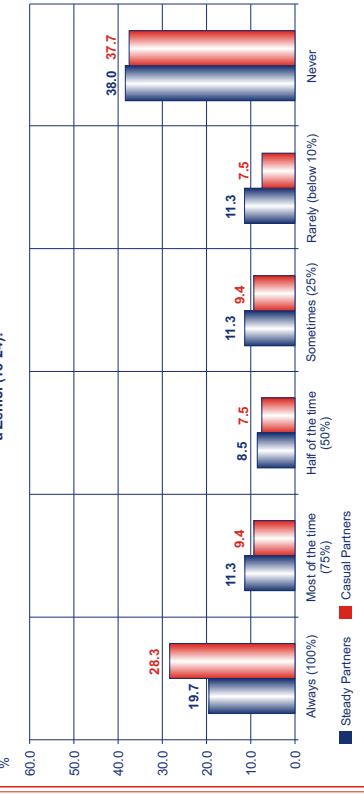


Figure 9: Frequency of condom use for young respondents in Zenica

Slightly more than half of respondents didn't know where to get an HIV test in their city (56.1 percent), while 84.1 percent had never had one. 15.9 percent of respondents had had an HCV test and about a third considered themselves not to be at risk of an HIV infection. Less than half of the younger respondents knew some organizations that are working on HIV prevention among IDUs in Zenica (43.9 percent), while less than 10 percent received a needle and/or syringe from an NGO or a governmental institution in the last year.

No one was found to be infected with HIV and syphilis. Only a small number of respondents in this age group had an HCV infection (6.1 percent) but 4.9 percent were found to be carriers of HBs antigen.

## Prevalence of HIV and other parenterally and sexually transmitted infections among risk behaviours among injecting drug users

## Discussion

5.

## 5. Discussion

The age structure of the samples indicates the predominance of the younger age groups as 40.9 percent of the respondents were younger than 24 years in Banja Luka, as were approximately a third of respondents in Zenica and Sarajevo. A high level of unemployment among IDUs emerged as an important social characteristic of this population, ranging from 71.7 percent in Banja Luka to 90.9 percent in Zenica.

A substantial proportion of the population started injecting drugs before 18 years-of-age, ranging from 27.6 percent in Banja Luka to 33.1 percent in Sarajevo. The average period of injecting was four years in Sarajevo and Zenica and 3.5 years in Banja Luka. There were considerable variations in frequency of injecting between the cities, being the most frequent in Sarajevo (81.9 percent of IDUs inject at least once daily) compared with Banja Luka (33.5 percent) and Zenica (37.2 percent). Most of injecting in Sarajevo goes on in private houses or apartments, though streets, parks, shooting galleries and deserted buildings were also commonly mentioned. Private houses are also mentioned as the most common sites of injecting in Banja Luka, though 26.9 percent of respondents mentioned shooting galleries, followed by cars, dealers' houses and deserted buildings. In Zenica, drugs are most frequently injected in private houses, followed by shooting galleries (24.9 percent) and streets and parks. Injecting heroin in the previous month was reported by all IDUs in Sarajevo, 95.4 percent of IDUs in Banja Luka and 96 percent in Zenica. In Sarajevo, heroin and cocaine together were used by 14.7 percent of respondents, and Tramadol by 11.2 percent. In Banja Luka, the other most common types of drugs injected were cocaine (4.8 percent), and heroine together with cocaine (4.1 percent), while in Zenica it was cocaine (8.0 percent) and ecstasy (7.3 percent).

About a third of respondents shared needles and/or syringes with one or more person in the previous month in all three cities (Figure 10), and close friends were mentioned most often as the source of shared needles and syringes. Slightly lower proportion of respondents (ranging from 26.2 percent in Zenica to 37.7 percent in Sarajevo) gave their needle or a syringe in the previous month to someone else. Smaller proportions shared injecting equipment with someone that they just met, ranging from 2.1 percent in Zenica to 7.1 percent in Sarajevo. Re-using needles was common, as reported by 74.6 percent of respondents in Sarajevo, 55.6 percent in Banja Luka and 61.9 percent in Zenica. Pharmacies were reported as the main source of needles and syringes in all three cities, while no one reported NGOs as a source of injecting equipment.

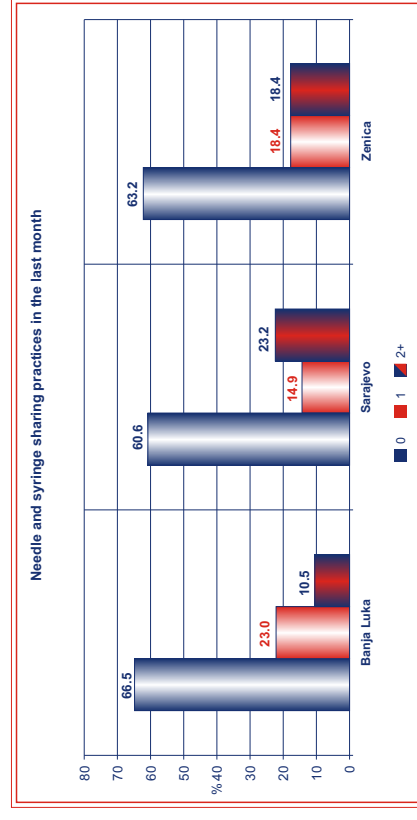


Figure 10: Needle and syringe sharing practices in all three cities

The highest rate of imprisonment was found among IDUs in Sarajevo (54.9 percent), followed by Banja Luka (36.6 percent) and Zenica (27.8 percent). Being in prison more than once was reported by slightly more than half of respondents in each of the three cities. Injecting drugs during their last imprisonment was at considerable levels, from 12.0 percent in Zenica to as high as 20.5 percent in Sarajevo.

The majority of respondents had good knowledge of the ways HIV can be transmitted through sexual contact and injecting drug use. It should be noted, however, that slightly more than a third in Sarajevo and a half in Banja Luka and Zenica perceive themselves at no or low risk of HIV infection.

The characteristics of sexual behaviours found in these studies indicate considerable levels of vulnerability and risk-taking. Early sexual intercourse before the age of 15 was reported by slightly more than a half of respondents in Sarajevo, 43.3 percent in Banja Luka and 26.4 percent in Zenica. Having more than one partner in the past year was reported by 62.1 percent of respondents in Sarajevo, 63.3 percent in Banja Luka and 58.3 percent in Zenica. The majority reported having sex with steady partners in the past year, ranging from 72.6 percent in Banja Luka, and 78.2 percent of respondents in Sarajevo to 87.1 percent in Zenica. Condom use during the last sex with a steady partner was low, as reported by 23.2 percent of respondents in Sarajevo, 38.8 percent in Banja Luka and 21.7 percent in Zenica.

Sex with casual partners in the past year was common and reported by slightly more than a half of respondents in Sarajevo and Zenica and 67.4 percent in Banja Luka. Condom use during the most recent sexual intercourse with a casual partner was least common in Banja Luka (Figure 11). A quarter of those with casual partners reported always using condoms during the previous month in Sarajevo and Banja Luka, and a third in Zenica. A majority of their sexual partners (both steady and casual) are not injecting drug users which signals an increased importance of active injectors as a bridging population facilitating a potential spread of infections to the general population.

The rate of those who had ever paid for sex also shows the variability between the cities, being the lowest in Sarajevo (4.1 percent), followed by 6.9 percent in Banja Luka and 13.7 percent in Zenica. Being paid for sex was reported by 3.7 percent of respondents in Sarajevo and Zenica and 1.7 percent in Banja Luka. No one reported being paid for sex with someone of the same gender, though this question was obviously misunderstood, as it should have referred to having the same sex partners in the past year that were not necessarily commercial partners.

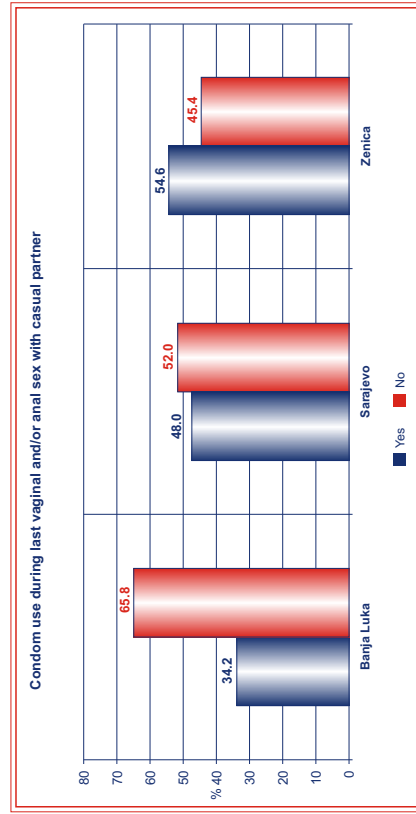


Figure 11: Condom use during last sex with casual partner in all three cities

The survey identified substantial need for increasing the availability and visibility of harm reduction services provided by NGOs and other outreach organisations. This is supported by an alarming finding related to the sources of condoms which indicate that NGOs and outreach workers were mentioned as sources of condoms by only one respondent in Sarajevo and Zenica, and two in Banja Luka. Condoms are mainly bought at tobacco shops, gas stations and pharmacies. IDUs should clearly have much better access to free condoms and information regarding HIV/AIDS provided primarily by NGOs and outreach services. In addition, a small number of IDUs knew the organisations that are working on HIV prevention among IDUs: only 14.5 percent in Banja Luka, 22.6 percent in Sarajevo and 39.4 percent in Zenica. In all three cities only a minority of IDUs received sterile needles and syringes from NGOs and governmental institutions. All these findings indicate weak prevention and intervention coverage with prevention measures aimed at IDU population in respective cities.

More efforts should be directed towards promotion of a range of harm reduction services provided by NGOs, and their more effective outreach to the community. In Sarajevo, 20 percent of respondents did not know where they could get an HIV test, and almost 40 percent had never had one. In Zenica and Banja Luka, slightly more than a half of respondents did not know where they could get tested for HIV, and 75.6 percent and 60.9 percent, respectively, never had an HIV test. A majority of those who tested for HIV knew their test result. The proportion of those tested for HCV showed wide differences between the cities, being the highest in Sarajevo (65.8 percent), followed by Banja Luka (35.0 percent) while the lowest proportion was in Zenica (23.8 percent). The current rate of IDUs in treatment for drug dependence is 26.8 percent in Banja Luka, 25.6 percent in Sarajevo, and 46.5 percent in Zenica.

A very small number of IDUs tested positive for HIV: one person in Sarajevo, one person in Banja Luka and no one in Zenica. The prevalence of HCV was high, reflecting high prevalence of sharing injecting equipment: 46.2 percent in Sarajevo, 43.4 percent in Banja Luka and 18.9 percent in Zenica. The prevalence of HBsAg varied considerably between the cities, from 0.5 percent in Banja Luka, 3.6 percent in Zenica to 6.9 percent in Sarajevo. HBsAg might indicate an active HBV infection and higher infectiousness if other markers of viral replication were present (HBeAg and HBV DNA), but this was not assessed in this survey. No one was diagnosed with syphilis in Banja Luka or Sarajevo, and only one person tested positive in Zenica. The low level of IDUs who tested positive on HIV and syphilis is challenging to interpret in the context of the presence of substantial levels of high risk injecting and sexual behaviours and the high prevalence of HCV; it might be due to the low HIV and STI prevalence in their sexual and drug using networks. The results from all three cities are representative of the population of IDUs living there, however, due to the age composition of the sample, it better represents IDUs younger than 35.

Analysis was also done on the sub-sample of young people aged 18-24 using unweighted data. Therefore, these results are not representative and include a small number of respondents as the aim of the survey was not primarily to get estimates that can be generalised for 18-24 year olds, but to the overall population of IDUs irrespective of age. The interpretation of data on young people aged 18-24 as a subset of the sample is limited by a low number of respondents (75 in Sarajevo, 90 in Banja Luka and 82 in Zenica). The results point to an early start of using any drugs which has implications for the development of the school-based programmes on drug use prevention early in the primary school. More than half of the young respondents in Sarajevo shared needles and/or syringes in the past month, while about 40 percent engaged in this practice in Zenica and Banja Luka. The average number of partners in the past year was three, which suggests a substantial partner change rate. About half of young IDUs in Sarajevo reported having casual sexual partners in the past year, while that proportion was much higher in Banja Luka (75.6 percent) and in Zenica (71.8 percent). The use of condoms during the most recent sexual intercourse with a casual partner ranged from 65 percent in Sarajevo to 42.5 percent in Banja Luka and 41.5 percent in Zenica. In Banja Luka and Zenica, less than half of respondents know where to get an HIV test. The awareness of organizations that provide harm reduction services is low. No one was diagnosed with HIV and syphilis, while HCV infection rates were similarly high for Sarajevo and Banja Luka (36 percent and 34.4 percent respectively) while only 6.1 percent of young IDUs in Zenica were found to be HCV infected.

### Limitation of the surveys

One of the limitations of the survey is that questions were read to participants, so it is possible that due to social desirability some answers may have been biased and not accurate, particularly on the sensitive questions about sexual behaviours and commercial sex. Women represent only a small minority of respondents. Whether or not this reflects the true gender composition of the IDU population in these three cities should be explored in qualitative studies by interviewing female IDUs. Also, the answers on same-sex experiences could not be obtained, possibly because the question was not well-understood. Another limitation is a generally small sample size per city. The population estimates would be more accurate had the sample size been larger. It is recommended that the sample size per city in the next survey is increased, and that the survey starts with more female seeds. The tests did not include those on hepatitis B antibodies, so it is not possible to estimate the proportion of those vaccinated against this infection.

### Prevalence of HIV and other parenterally and sexually transmitted infections and risk behaviours among injecting drug users

### Policy recommendations and conclusion

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## 6. Policy recommendations and conclusion

These population-based surveys among IDUs in Sarajevo, Zenica and Banja Luka were successfully completed in 2007 and provide evidence on which to base further policy decisions and services development. We found several factors that might contribute to the spread of HIV and STIs, such as a high prevalence of sharing injecting equipment, a high rate of imprisonment and injecting while in prison. In terms of sexual health, we noted a high partner change rate and low condom use with both casual and steady partners.

The survey identified a substantial need to increase the availability and visibility of harm reduction services provided by NGOs and outreach organizations, as well as by governmental institutions that should provide HIV and STI prevention and control services. Data on the sources of condoms indicate that condoms are mainly bought, and NGOs and outreach workers were mentioned as sources of condoms by only one respondent in Sarajevo and Zenica and two in Banja Luka. The lack of financial means due to high levels of unemployment certainly limits the opportunity to buy condoms.

These three surveys, along with providing evidence on which to base policy decisions, also provided valuable information in terms of HIV, hepatitis and syphilis testing and counselling on prevention of these infections. Before the survey, 20 percent of respondents in Sarajevo did not know where they could get an HIV test, and almost 40 percent had never had an HIV test. In Zenica and Banja Luka, slightly more than a half of respondents did not know where they could get an HIV test, and 75.6 percent and 60.9 percent respectively, had never been tested for HIV. As only a small minority of IDUs received sterile needles and syringes from NGOs and governmental institutions as well as HIV and HCV testing, more efforts should be directed towards promotion of a range of harm reduction services provided by governmental agencies and NGOs, and their more effective outreach to the community. It is encouraging to see that the majority of those tested on HIV and HCV received their test results.

The low prevalence of HIV and syphilis found in this survey should encourage the further work on harm reduction among IDUs and their partners. The observed very low number of IDUs who tested positive on HIV and syphilis is challenging to interpret in the context of the presence of substantial levels of high risk injecting and sexual behaviours and the high prevalence of HCV. As the risky injecting behaviours are the same, it also remains to be clarified why the prevalence of HCV in Zenica is more than twice as low as it is in Sarajevo and Banja Luka.

Planning of services for IDUs should be based on the evidence collected in these surveys, local estimates of the number of IDUs, existing national guidelines on provision of services to IDUs and needs of specific groups, such as young IDUs, unemployed IDUs, homeless, etc.

## Policy recommendations

### Defining structures for the provision of services across the range of providers

- A mapping should be conducted of which kind of providers in Bosnia and Herzegovina are in contact with IDUs, and what their roles and responsibilities in service provision are, what kind of services they should be providing and what kind of services are currently missing (particularly the services that are suggested by WHO, UNODC and other international agencies).<sup>7,8,9,10</sup>
- Health professionals in contact with IDUs should provide advice on drug treatment and cessation programmes, vaccination against hepatitis B and A, and should also ask them about their tetanus immunization status (if unvaccinated, should be encouraged to receive vaccines or vaccination boosters). They should also offer them a test for HIV and hepatitis C, and other blood borne and sexually transmitted infections.
- Similarly to health professionals, the role of other agencies in minimising the individual and societal harm from drug use should be defined (if this does not exist) within the framework of provision of services and treatment for drug users. Such a framework should be accompanied by the monitoring tools that include indicators on risk behaviours, prevalence of infections, criminal activity, etc. Surveillance surveys such as these should be part of these monitoring tools.
- It should be also explored whether there are guidelines in BiH on the provision of methadone and opioid detoxification programmes; psychosocial interventions; needle exchange and other harm reduction services.

### Provision of sterile needles and syringes

- Sterile needles and syringes should continue to be provided and made more visible to the IDU population by NGOs, in particular by outreach services that should be active in the parts of the cities where the majority of IDUs can be found. These services should be available to IDUs in the evenings, during weekends and on public holidays.
- To increase the effectiveness of outreach work, ex-drug users familiar with the population should be included in outreach teams. They can effectively reach those parts of the population that are most hidden, like female IDUs, who were not sufficiently represented in the sample.

### Provision of condoms

- As condom use is low with steady and casual partners, NGOs and outreach services should increase the provision of free condoms to IDUs and make this service better recognized and visible.
- It should be also defined how NGOs can increase condom distribution, i.e. if that has been part of the condom programming in BiH.

### Increase in HIV testing and counselling and testing on other infections

- Policy planners should consider setting up of clinics for vulnerable groups where IDUs and other vulnerable groups (e.g. sex workers, men who have sex with men) can get free HIV and STI (at least hepatitis and syphilis, if possible gonorrhoea and chlamydia) testing and counselling, free condoms and other reproductive health care services that can be provided. These clinics should be walk-in and free, and staff working there should be sensitised to working with vulnerable groups.
- Outreach services should seek to encourage and provide testing on parenterally and sexually transmitted infections.
- All IDUs should be vaccinated against hepatitis B.

- As sexual partnerships with other IDUs were commonly found in these surveys, counselling for HIV and STIs should include partners as well. It is also important to devote special attention during counselling sessions to explaining risks to their sexual partners who are not injecting drugs.

### Interventions that encourage behavioural change

- All those working with IDUs (general practitioners, NGOs, other service providers) should encourage them to stop injecting and provide advice and support on entry into drug treatment programmes.

### Harm reduction services in prisons

- As many IDUs have experience of being in prison and injecting in prisons, harm reduction should be provided there, including both provision of sterile needles, syringes, condoms and voluntary testing on hepatitis and HIV.

### Sensitisation of police

- Public health practitioners that work on HIV prevention among IDUs should be working together with police and other law enforcement agencies to determine ways to decrease the high numbers of arrests and imprisonment and de-stigmatise harm reduction programmes.

### Produce and distribute leaflets that describe the services for IDUs

- Those working on harm reduction among IDUs in BiH should produce and distribute leaflets that describe what type of harm reduction and treatment services existing in the country, with information on the location accessing.

- Info leaflets should contain advice on safe injecting practices, means of avoiding injecting site infections, advice on safe disposal of used equipment and how and where they can access treatment to cease injecting.

### Continue with surveillance

- The next survey on IDUs using RDS method should be carried out in these three cities in 2009 and include at least 400 respondents per city, if possible, other cities that have high prevalence of injecting drug use and injecting-related harm should also be included.

- The next survey should include tests to detect antibodies against hepatitis B (core and surface antigens). It should be also used to monitor the proportion of IDUs that have received free sterile needles and syringes from NGOs and outreach services, the month and year of their last HIV test, whether and when they had a hepatitis C test and whether they are vaccinated against hepatitis B.

- In the next survey, IDUs should be asked whether they had an abscess, sore or an open wound at an injecting site in order to monitor the occurrence of bacterial infections due to injecting.

- Population-based surveys should be carried out in other population groups that are highly vulnerable to HIV and STIs, such as commercial sex workers and men who have sex with men.

- Further studies should explore the HIV and STI prevalence among commercial sex workers in BiH, and the overlap between injecting and sex worker networks.

- Additional surveys, in particular qualitative surveys, are needed to explore the extent of drug use among young females and the ways they can be recruited for such surveys.

**Prevalence of HIV and other parenterally and sexually transmitted infections and risk behaviours among injecting drug users**

**References**

**7.**

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## Appendix 1: Survey staff

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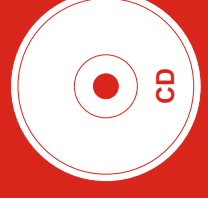
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Prevalence of HIV and other parenterally and sexually transmitted infections and risk behaviours among injecting drug users



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9. Appendix 2. - Results tables (All age groups)  
10. Appendix 3. - Results tables (Age group 18-24)  
11. Appendix 4. - Questionnaire

