

# Albania Behavioral and Biological Surveillance Study Report

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# Contents

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<b>Survey Working Group</b> .....	<b>iii</b>
<b>Contents</b> .....	<b>iv</b>
<b>Figures</b> .....	<b>vi</b>
<b>Tables</b> .....	<b>vi</b>
<b>Abbreviations and Acronyms</b> .....	<b>vii</b>
<b>Acknowledgments</b> .....	<b>viii</b>
<b>Foreword</b> .....	<b>ix</b>
<b>Executive Summary</b> .....	<b>ES-1</b>
Results .....	ES-2
Biological Data.....	ES-2
Behavioral Data.....	ES-2
<b>Introduction</b> .....	<b>1</b>
Overview of Behavioral and Biological Surveillance Study.....	1
Objectives of Bio-BSS in Albania .....	2
<b>Methodology</b> .....	<b>3</b>
Survey Instruments.....	3
Sample Design .....	3
IDU and MSM .....	3
Roma and General Populations.....	4
Sample Size .....	4
Data Collection Procedure.....	5
Statistical Data Processing and Analysis.....	6
<b>Background Information</b> .....	<b>7</b>
Albania .....	7
HIV/AIDS/STI in Albania.....	8
<b>Results</b> .....	<b>11</b>
<b>I. Injecting Drug Users</b> .....	<b>11</b>
1. Sociodemographic Characteristics of IDU .....	11
2. Alcohol and Drug Use .....	12
3. Needle- and Equipment-Sharing Behaviors.....	14
4. Drug Treatment .....	15
5. Sexual Behaviors and Condom Use .....	16
6. STI Knowledge.....	18
7. HIV Knowledge .....	18
8. HIV Testing Knowledge and Behaviors .....	19
9. Stigma and Discrimination.....	19
10. RDS Network Size and Recruitment Information.....	20
11. Biological Data.....	21
<b>II. Men Who Have Sex with Men</b> .....	<b>23</b>
1. Sociodemographic Characteristics of MSM .....	23

2. Alcohol and Drug Use .....	24
3. Sexual Behaviors and Condom Use .....	24
4. Condom and Lubricant Knowledge.....	28
5. STI/HIV Knowledge and Attitudes .....	28
6. HIV Counseling and Testing.....	29
7. Stigma and Discrimination.....	30
8. RDS Network Size and Recruitment Information.....	31
9. Biological Data.....	31
<b>III. Roma Population and General Population .....</b>	<b>33</b>
1. Sociodemographic Characteristics of Roma and General Population .....	33
2. Alcohol and Drug Use .....	34
3. Sexual Behaviors and Condom Use .....	35
4. STI Knowledge and Symptoms.....	38
5. Condom Knowledge .....	39
6. HIV Knowledge .....	40
7. HIV Testing Knowledge and Behaviors .....	42
8. Stigma and Discrimination.....	43
9. Biological Data.....	43
<b>Discussion.....</b>	<b>45</b>
Injecting Drug Users .....	45
Men Who Have Sex with Men.....	46
Roma Population.....	47
<b>Limitations .....</b>	<b>49</b>
<b>Recommendations.....</b>	<b>51</b>
Future Behavioral and Biological Surveillance Studies.....	51
General Recommendations Across Study Groups .....	51
Recommendations by Population.....	52
Injecting Drug Users.....	52
Men Who Have Sex with Men.....	52
Roma.....	53

## Appendices

A	Data Tables
A1	Injecting Drug Users
A2	Men Who Have Sex with Men
A3	Roma and General Population
B	Research Questionnaires
B1	Injecting Drug Users
B2	Men Who Have Sex with Men
B3	Roma and General Population
C	Bio-BSS Staff Members

## Figures

1	Most Frequently Injected Drugs During Past Month .....	14
2	Estimated Drug Treatment for Drug Addicts.....	16
3	Knowledge About How to Prevent HIV/AIDS.....	18
4	HIV Testing .....	19
5	Educational Level Among Tirana MSM .....	24
6	Number of MSM Female Sex Partners in Past 6 Months.....	28
7	MSM Knowledge of HIV Prevention Methods .....	29
8	Roma HIV Prevention Knowledge .....	41
9	HIV Testing .....	42

## Tables

ES-1	Sample Size Projected and Achieved, by Study Population.....	ES-2
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1	Sample Size, Projected and Achieved, by Study Population.....	4
2	Summary of Testing, by Population.....	5
3	Sociodemographic Characteristics of IDU .....	11
4	Drug Use Behaviors .....	12
5	Needle- and Equipment-Sharing Behaviors .....	14
6	Sexual Behaviors and Condom Use .....	16
7	Stigma and Discrimination Toward PLWHA.....	19
8	IDU Adjusted Network Size, by Selected Characteristics.....	20
9	Biological Data for IDU .....	21
10	Sociodemographic Characteristics of MSM .....	23
11	Alcohol and Drug Use .....	24
12	Sexual History: Oral Sex and Condom Use.....	25
13	Sexual History: Anal Sex and Partner Type .....	25
14	Sexual History: Anal Sex and Condom Use with Commercial Sex Workers .....	26
15	Sexual History: Anal Sex and Condom Use with Non-Commercial Sex Partners ..	27
16	HIV Counseling and Testing .....	30
17	Stigma and Discrimination Toward PLWHA.....	30
18	MSM Adjusted Network Size, by Selected Characteristics .....	31
19	Biological Data Among MSM in Tirana .....	31
20	Sociodemographic Characteristics of Roma and General Population.....	33
21	Alcohol and Drug Use, by Population and Gender .....	35
22	Sexual History: Condom Use, by Population and Gender .....	35
23	Sexual History: Condom Use with Regular Partners .....	36
24	Sexual History: Condom Use with Commercial Sex Partners.....	37
25	Sexual History: Condom Use with Non-Regular, Non-Commercial Sex Partners .....	37
26	Knowledge of STIs, by Population and Gender.....	38
27	Knowledge About Condoms, by Population and Gender.....	39
28	Knowledge of HIV/AIDS, by Population and Gender .....	40
29	Misconceptions About Transmission Modes.....	41
30	Stigma and Discrimination, by Population and Gender .....	43
31	Disease Rate Among Roma and General Population .....	43

## Abbreviations and Acronyms

AIDS	Acquired Immunodeficiency Syndrome
APRAD	Association for Prevention of Drugs and Alcohol
ART	Antiretroviral Treatment
ARV	Antiretroviral
Bio-BSS	Behavioral and Biological Surveillance Study
BSS	Behavioral Surveillance Survey (or BSS+)
CI	Confidence Interval
EIA	Enzyme-Immunoassay Antibodies Test
ELISA	Enzyme-Linked Immunosorbant Assay
FHI	Family Health International
HCV	Hepatitis C Virus
HIV	Human Immunodeficiency Virus
ID	Identification Number
IDU	Injecting Drug User
IEC	Information, Education, and Communications
INSTAT	Institute of Statistics
IPH	Institute of Public Health
ISOP	Institute of Public Opinion Studies
MOH	Ministry of Health
MSM	Men Who Have Sex with Men
MTCT	Mother-to-Child Transmission
N	Number
NAP	National AIDS Program
NC	Not Calculated
NGO	Non-Governmental Organization
PCR	Polymerase Chain Reaction
PHSC	Protection of Human Subjects
PI	Principal Investigator
PLWHA	People Living with HIV/AIDS
RAR	Rapid Assessment and Response
RDS	Respondent-Driven Sampling
RHS	Reproductive Health Survey
RPR	Rapid Plasma Reagent
SGA	Albanian Gay Association
STD	Sexually Transmitted Disease
STI	Sexually Transmitted Infection
SWG	Survey Working Group
TPHA	<i>Treponema pallidum</i> Hemoagglutination Assay
TWG	Technical Working Group
UHCT	University Hospital Center in Tirana
USAID	United States Agency for International Development
VCT	Voluntary Counseling and Testing

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## Foreword

Albania established a National AIDS Program (NAP) within the Institute of Public Health (IPH) in 1989 to coordinate Albania's national response to HIV/AIDS. One of the goals of the NAP is to establish an HIV behavioral and biological surveillance system to inform the NAP strategy.

Regular sentinel surveillance (e.g., women in antenatal clinics) does not currently exist in Albania, and there have been few behavioral surveys focusing on HIV. Subsequently, it is difficult to estimate HIV prevalence and behavioral trends in any sub-population. Thus, there is a need for surveillance among groups that may be at high risk to determine their HIV prevalence, knowledge, and risk behaviors so that modes of transmission can be ascertained and appropriate evidence-based responses developed.

The challenge is to keep HIV rates low in Albania and to address issues of stigma and discrimination to ensure that people living with HIV/AIDS (PLWHA) and their families receive treatment, care, and support.

This publication represents a groundbreaking effort to establish the Bio-BSS in Albania. The systematic collection of data from three vulnerable populations— injecting drug users (IDU), men who have sex with men (MSM), and the Roma—will provide baseline information and systems for monitoring key behavioral and biological trends over time. Through this Bio-BSS, we have created a solid foundation for ongoing surveillance of high-risk behaviors and related infections as an integral part of the Albania National AIDS Program Monitoring and Evaluation Plan.

In closing, I wish to thank the Survey Working Group and the numerous individuals and organizations that have contributed to the success of this endeavor.

Prof. Dr. Eduard Z. Kakarriqi  
Director, Institute of Public Health  
Ministry of Health  
Albania

## Executive Summary

This report presents the results of the 2005 Behavioral and Biological Surveillance Study (Bio-BSS) conducted in Tirana, Albania, the first such study conducted in Albania. The survey collected data from the following three groups: injecting drug users (IDU), men who have sex with men (MSM), and the Roma population. Survey data were also collected from the general Albanian population (General Population) to be used as a comparison for the data from the Roma sample.

The Bio-BSS was implemented with financial support from the United States Agency for International Development (USAID)/Albania. A Survey Working Group (SWG), consisting of members of the Institute of Public Health (IPH), Institute of Public Opinion Studies (ISOP), USAID, The Synergy Project, and Family Health International (FHI), was formed to design and manage the surveillance activities. FHI and The Synergy Project provided technical assistance for the design, implementation, analysis, and report-writing of the Bio-BSS.

The overall goal of the current round of the Bio-BSS was to establish a second-generation National HIV biological and behavioral surveillance system. The general objectives of the Bio-BSS were to:

- Provide baseline measurements of key behavioral and biological indicators for high-risk and vulnerable groups in Albania, including correlations between risk behaviors and exposure to specific sexually transmitted infections (STIs)
- Enhance National capacity to maintain surveillance as part of the National AIDS Monitoring Plan
- Conduct analyses to inform Albanian National HIV prevention program planning

Before starting the Bio-BSS, ethical approval was obtained from the Albanian Medical Ethical Committee and from FHI's Protection of Human Subjects Committee.

Respondent-driven sampling (RDS) was used to recruit IDU and MSM respondents. RDS is a modified form of snowball sampling that allows researchers to recruit highly stigmatized groups who do not congregate in known locations. RDS not only provides a probability method for achieving a desired sample size, but also allows the study team to identify the networks and characteristics of those within the networks. Thus, the data from the RDS samples allow us to make inferences about the characteristics of the larger networks of IDU and MSM in Tirana.

The Roma and General Population groups were sampled using standard household cluster sampling techniques. First, the Bio-BSS team updated and verified existing IPH maps of Roma neighborhoods. After the maps had been verified, 3 Roma settlements (each representing a cluster) were randomly selected from the 11 settlements that had been mapped. Next, a random sampling method was used to select specific households within the selected settlements. One male and one female, between the ages of 18 and 49, were randomly selected from among each household's members to participate in the study. **Table ES-1** presents the calculated (desired) and achieved sample size for each of the study populations.

**Table ES-1. Sample Size Projected and Achieved, by Study Population**

<b>Group</b>	<b>Sample Size Calculated</b>	<b>Sample Size Achieved</b>
<b>IDU</b>	200	225
<b>MSM</b>	200	199
<b>Roma</b>	620	630
<b>General</b>	620	629
<b>Total</b>	1,640	1,683

## **Results**

### **Biological Data**

Overall, the prevalence of biological infections among the Bio-BSS target populations was low. HIV was not detected among the IDU and the General Population; estimated prevalence among the Roma was 0.3% and among MSM 0.8% (95% CI: 0.1%–2.0%).

Syphilis was most prevalent among the Roma—2.5%—indicating a potential risk for HIV transmission. Syphilis among the other groups was lower: 0.6% for IDU and 1.2% for MSM.

Hepatitis B occurred at much higher rates than syphilis in all populations. The General Population had a rate of hepatitis B of 5.6%, while the rate among the Roma population was 13.5%. IDU and MSM also had high rates of hepatitis B (15% and 17.6%, respectively). Most disturbing, however, is the elevated rate of hepatitis C among IDU. It is estimated that one in every four IDU is infected with hepatitis C, indicating a potential pathway for HIV transmission. Behavioral data related to HIV for each study population are presented below.

### **Behavioral Data**

#### **Injecting Drug User**

The estimates regarding the IDU population in Tirana reveal that the majority of IDU are male, that about half of IDU are less than 25 years old (47%), and that the majority are not married and do not live with a sexual partner (65%). In terms of education, most IDU have completed at least middle school (8 classes), with one-third having also completed high school (12 classes). An estimated 11% of IDU are illiterate.

The vast majority of IDU (92%) have injected for 5 years or less; almost 18% have injected for less than 12 months. The median age at first injection is 21 years, with about 45% of IDU estimated to have injected before the age of 20. More than two-thirds of the population (82%) inject drugs multiple times daily. The most commonly used injectable and non-injectable drugs in the past month were heroin (91%), diazepam (51%), marijuana (47%), and cocaine (26%). It is estimated that slightly more than half of IDU (54%) have injected with a used needle in the past month, indicating that sharing of needles and syringes is common.

Almost 90% of IDU are estimated to have engaged in sexual intercourse, while fewer (77%) had sexual intercourse in the past 12 months. More than one-fourth (27.8%) of the IDU population is estimated to have used a condom with their regular partner during their last sex, and 38.9% used a condom with non-regular partners.

The vast majority of respondents (91.6%) reported that they knew a person could get HIV by injecting with used needles, and almost three-fourths knew that switching from injecting to non-injecting drugs could help protect them against HIV. Approximately 30% of IDU have had their blood tested for HIV, and of those, almost two-thirds were tested voluntarily.

### **Men Who Have Sex with Men**

The median age of MSM participants was 26.9 years, and it is estimated that more than half of MSM in Tirana are younger than 24 years. More than 90% of MSM have completed at least the compulsory education of 8 classes, with 36% having completed a minimum of 12 classes; a total of 8% reported never receiving any formal education. In terms of drug use, it is estimated that about half of MSM have experimented with marijuana and one-third have tried heroin. More than 20% of MSM also use cocaine and ecstasy. Population estimates indicate that more than one-fourth of MSM inject drugs (27.1%), and that heroin is the most common drug injected among MSM in Albania.

The MSM population is sexually active, with almost 100% estimated to have had sex in the past 6 months. During that time, about 60% of MSM had oral sex with a man, and almost half ejaculated into one's mouth (his or his partner's). The majority of MSM (67%) are estimated to have had more than one sexual partner during this period, with almost 10% having five or more oral sex partners. Almost all respondents (97%) had anal sex in the past 6 months, with an estimated 40% of MSM having had anal sex with a commercial partner.

Only 16% of MSM used condoms consistently during every act of sexual intercourse. Among MSM who did not use a condom, "not liking it" was the main reason given. Less frequently mentioned reasons were related to access (not available or too expensive) and to awareness (not necessary, not thinking of it). Similarly, only a minority of respondents are estimated to use lubricants (19%), with "not liking lubricants" the most frequent reason given for not using them. Among MSM who use lubricants, oil-based lubricants, including butter and cooking oil, were the most frequently used.

While an estimated 80% of MSM are aware of the availability of confidential HIV testing in Tirana, only a small proportion have ever taken an HIV test. For most of those MSM who have been tested, their HIV testing was voluntary, and they received their test result.

### **Roma**

The weighted Roma study sample was young; one-third (31%) of participants were under the age of 24 (median age = 31). Half of the respondents reported that they married before the age of 16 (official age for marriage in Albania is 18). More than one-third of the Roma had received no education, in contrast to the 1.3% among the General Population. The majority of Roma study participants had been married (90%) and almost 77% lived with their spouse.

Almost 98% of the Roma (87.5% of the General Population) reported having had sexual intercourse (defined as vaginal or anal intercourse). The median age at first sex was 16 years for Roma and 19 years for the General Population. The majority of Roma (88%) had sex before the age of 18, with 23% having first engaged in sex between the ages of 10 and 14. This early age of sexual initiation is more common among the Roma females, of whom 35.5% first had sex between the ages of 10 and 14, compared with only 1.2% of females in the General Population. Only 11% of the Roma reported ever using a condom, in comparison to 36% of the General Population. Almost 80% of the Roma reported having sex in the past 12 months without using a condom, as did more than the half of the General Population.

Almost 30% of the Roma females, compared with 8.7% of General Population females, reported that a sexual partner forced her to have sex when she did not want to in the past 12 months.

Despite a general awareness of HIV prevention methods, both the Roma and General Populations had misconceptions about HIV. For example, only about 15% of the Roma were aware that HIV is not transmitted through mosquito bites or by sharing a meal with someone who is HIV-positive. Of particular importance is the fact that only 64% of the Roma believed that a healthy looking person could be infected with HIV (84% in the General Population). Correct and incorrect response rates to knowledge questions were relatively similar for males and females within each study group. A high percentage of respondents reported being aware that a confidential HIV test is available in Tirana (61.1% Roma and 81.1% General Population). However, while awareness was high, actual HIV testing was infrequent across study groups, with Roma participants less likely to have been tested than their General Population counterparts (3.1% for Roma versus 7.7% for General Population).

## **Introduction**

This report presents the results of the 2005 Behavioral and Biological Surveillance Study (Bio-BSS) in Tirana, Albania, the first such study conducted in Albania. The survey collected data from the following three groups: injecting drug users (IDU), men who have sex with men (MSM), and the Roma population. Survey data were also collected from the general Albanian population to be used as a comparison for the data from the Roma sample. The data collected for this report are presented in Appendix A, Data Tables. The questionnaires used to collect the data are presented in Appendix B, Questionnaires. Appendix C contains a list of Bio-BSS staff members and their positions.

The Bio-BSS was implemented with financial support from the United States Agency for International Development (USAID)/Albania. A Survey Working Group (SWG), consisting of members of the Institute of Public Health (IPH), Institute of Public Opinion Studies (ISOP), USAID, The Synergy Project, and Family Health International (FHI), was formed to design and manage the surveillance activities. FHI and The Synergy Project provided technical assistance for the design, implementation, analysis, and report-writing of the Bio-BSS. The goal of the Bio-BSS was to establish a second-generation HIV surveillance system that will continue to monitor behavioral and biological information among high-risk groups as an integral part of the Albania National HIV/AIDS Prevention Strategy that was adopted in 2004.

This introduction provides background information that is necessary to understand the social, economic, and epidemiological context of the target groups and their HIV prevention behaviors. Following this descriptive introduction, the report presents the results of the research and a comparative analysis of findings on key indicators for each study population. These indicators provide key information on the social demographics, risk behaviors, and the HIV, hepatitis B and C, and syphilis prevalence rates of each target group. Following presentation of the findings, there is a list of recommendations for HIV prevention programs and policies for each of the study populations. These recommendations are based on the analysis and interpretation of specific Bio-BSS behavioral and biological indicators and their translation into practical solutions.

The information provided in this report is intended to increase the understanding of the social and epidemiological context of HIV-related risk behaviors of these vulnerable populations and their social networks in Tirana. The information will guide policymakers and program planners and managers in developing appropriate strategic policy and prevention activities as part of a comprehensive HIV prevention agenda.

## **Overview of Behavioral and Biological Surveillance Study**

The Bio-BSS is a surveillance method designed to track trends in HIV/AIDS-related knowledge, attitudes, and behaviors in sub-populations at high-risk of HIV infection, including injecting drug users (IDU), men who have sex with men (MSM), and other vulnerable sub-populations. The Bio-BSS consists of repeated cross-sectional surveys conducted systematically to monitor changes in HIV/STI-related risk behaviors. The key benefit of this methodology is its standardized approach to questionnaire development, sampling frame construction, and survey implementation and analysis. Most of the questions in the questionnaires have been validated in various populations. The results of the Bio-BSS may serve multiple purposes, including identifying specific behaviors that need to be changed, and providing data that may be used to advocate for support (political and financial) and policy changes.

Since 1999, FHI has worked with national and local entities to conduct a Bio-BSS in more than 25 countries in Africa, Latin and Central America, Eastern Europe, and Asia. Results from these Bio-BSS studies have provided valuable information for understanding the HIV epidemic, from both regional and country-specific perspectives. In several countries, multiple rounds of Bio-BSS have already been conducted, and the trend data are being used to formulate new programs and to adapt and revise existing programs.

## **Objectives of Bio-BSS in Albania**

The overall goal of the current round of Bio-BSS in Albania was to establish a second-generation National HIV biological and behavioral surveillance system. The general objectives of the Bio-BSS were to:

- Provide baseline measurements of key behavioral and biological indicators for high-risk and vulnerable groups in Albania, including correlations between risk behaviors and exposure to specific STIs
- Enhance National capacity to maintain surveillance as part of the National AIDS Monitoring Plan
- Conduct analyses to inform Albanian National HIV prevention program planning

Before starting the Bio-BSS, ethical approval was obtained from the Albanian Medical Ethical Committee and from FHI's Protection of Human Subjects Committee.

# Methodology

## Survey Instruments

The survey instruments used in this Bio-BSS were standardized behavior study questionnaires provided in the FHI-published manual *Behavioral Surveillance Surveys: Guidelines for Repeated Behavioral Surveys in Populations at Risk for HIV*. Questionnaires appropriate for each of the four different study populations are included in the manual.

Supervisors, interviewers, and other team members participated in a 5-day training program, which included orientation to the Bio-BSS and training in consent procedures, confidentiality, sampling procedures, interviewing skills, data quality, sensitization to issues pertaining to high-risk populations, and roles and responsibilities. The training included role-plays and mock interviews. A training guide was developed for interviewers and supervisors that explained the questions on the questionnaires and their intended meaning.

The questionnaires includes questions on: sociodemographic characteristics, sexual history and partner types, drug injection behaviors, condom use, STI knowledge, STI symptoms, HIV/AIDS knowledge, attitudes, and beliefs, HIV testing, HIV-related stigma and discrimination, health status, and health-seeking behaviors.

## Sample Design

Probability samples were used to collect information from the four study groups. Using a probability sample allows the research results to be generalized to the larger reference population. These methods are also repeatable and may be used to measure behavioral and biological trends over time. Two different sampling techniques were used for the Bio-BSS in Albania: (1) respondent-driven sampling for IDU and MSM and (2) standard household clustering technique for the Roma and General Population samples. These sampling designs and the inclusion criteria for each population are described in detail below. All data were collected from the end of June through August 2005.

### IDU and MSM

Respondent-driven sampling (RDS) was used to recruit IDU and MSM respondents. RDS is a modified form of snowball sampling that allows researchers to recruit highly stigmatized groups who do not congregate in known locations. RDS not only provides a method for achieving a desired sample size, but also allows the study team to identify networks and characteristics of those within the networks.

The first step in RDS is to collaborate with nongovernmental organizations (NGOs) that work with the target populations to recruit 10–15 initial respondents, called “seed” participants. The IDU and MSM seed participants in Albania attended the study site and completed the behavioral survey and biological component of the study (including HIV and STI testing). After completing the study, the seed participants were provided with transportation and reimbursed for their time, were given two coupons to recruit two additional peers to participate in the Bio-BSS, and received additional reimbursement for each participant they recruited who completed the study. This process was repeated until the desired sample size was reached. The number of coupons per seed participant was limited to two to ensure that a broad array of seed participants had an opportunity to recruit participants, thus reducing homophily among survey participants, as well as preventing the emergence of semi-

professional recruiters and potential turf battles over recruiting rights. Within Tirana, IDU were interviewed at three sites and MSM at one site.

For this Bio-BSS, IDU were defined as “any person who has injected substances into their bodies during the previous 1 year.” MSM were defined as “any male who has engaged in sexual activities with other men in the past 1 year.”

## Roma and General Populations

The Roma and General Population groups were sampled using standard household cluster sampling techniques. First, the Bio-BSS team updated and verified existing IPH maps of Roma neighborhoods. After the maps were verified, 3 Roma settlements (each representing a cluster) were randomly selected from the 11 settlements that had been mapped. Second, a random sampling method was used to select specific households within the selected settlements. One male and one female, between the ages of 18 and 49, were randomly selected from among each household’s members to participate in the study. All selected individuals were then invited to participate in the surveillance research at a study site (e.g., community centers, health clinics) identified by the SWG. A similar mapping exercise was conducted among General Population settlements that were geographically close to the selected Roma sites and that had similar social characteristics in terms of access to schools, health care, transport, water and sanitation, and electrical power. Within the three General Population sites, blocks were randomly selected, then households, and then participants.

Roma population members were defined as “men and women, ages 18–49, who identified themselves as Roma.” Men and women from the same age groups from the General Population were also surveyed to serve as a reference group for the information obtained from the Roma population.

## Sample Size

Sample sizes were calculated to detect a change of 15% in several indicators for each target population over time. The initial values for the variables were estimated to be 50% (the most conservative estimate possible that would generate the largest sample size because little was known about the current risk behaviors of these target groups). The design effect was estimated at 1.3 for IDU and MSM populations based on the RDS design, and at 2.0 for the Roma and General Populations based on the cluster sampling design. The level of precision was set at 0.05 for a one-sided test with 80% power. Sample sizes were increased by 10–15% to account for potential non-responses. The sample sizes required, according to these calculations, as well as the sample sizes actually achieved, are listed in **Table 1**.

**Table 1. Sample Size, Projected and Achieved, by Study Population**

	Sample Size Calculation	Sample Size Achieved
<b>IDU</b>	200	225
<b>MSM</b>	200	199
<b>Roma</b>	620	630
<b>General</b>	620	629
<b>Total</b>	1,640	1,683

## Data Collection Procedure

All data were collected from the end of June through August 2005. For IDU and MSM, NGO staff, outreach workers, and healthcare providers facilitated recruitment of the “seed” participants because these workers are familiar with and trusted by the target populations. For the Roma and General Populations, trained recruiters made the initial contact at people’s homes and invited them to come to the study site. Professionally trained interviewers administered the questionnaires after obtaining written consent (participants had the option of providing witnessed, oral consent if they were uncomfortable providing a signature). The interviewers conducted one-on-one face-to-face interviews with each respondent in a private setting. Each interview lasted approximately 1 hour for IDU and MSM population respondents and 45 minutes for Roma and General Population respondents. Field supervisors reviewed all completed questionnaires to ensure responses were recorded accurately.

After completing the behavioral survey, participants underwent the biological portion of the surveillance research, which consisted of the following: pre-test counseling, venous blood draw for HIV and STI rapid and confirmatory tests, treatment and referral for positive STI results, and post-test counseling. The Hexagon rapid HIV test was used for HIV testing. The Hexagon test is noted for its high sensitivity and, therefore, a negative result was considered a true negative. Confirmatory (enzyme-linked immunosorbant assay) ELISA and Western Blot tests were conducted at the Albanian National HIV Laboratory for indeterminate or positive rapid test results. All participants were told where and when to obtain their laboratory HIV and STI confirmatory results. All participants who had a reactive test for HIV or hepatitis were referred for continued follow-up and care at the University Hospital Center in Tirana (UHCT). All participants who tested positive for syphilis (25 cases) were treated promptly with antibiotics at the study site, according to the protocol.

**Table 2. Summary of Testing, by Population**

<b>Virus</b>	<b>Rapid Test</b>	<b>Confirmatory Test</b>	<b>Biological Sample</b>	<b>IDU</b>	<b>Roma and General Population</b>	<b>MSM</b>
<b>HIV</b>	Rapid test/ Hexagon HIV	ELISA/ Global Med LLC	Venous blood	X	X	X
<b>Syphilis</b>	Rapid test/smart check syphilis device	TPHA (Human)	Venous blood	X	X	X
<b>Hepatitis B</b>	Rapid test/smart check HBsAg device	ELISA/ Global Med LLC	Venous blood	X	X	X
<b>Hepatitis C</b>	Rapid test/smart check anti-HCV device	ELISA/ Global Med LLC	Venous blood	X		

Participation in the survey was voluntary and participants were compensated for their time and transportation costs (10 Euro per respondent. IDU and MSM who participated in the RDS sampling methodology were compensated an additional 5 Euro for each participant they referred who successfully completed the study). Participants were assured of confidentiality of all the information they provided. Compliance with ethical requirements for the research was observed during data collection and throughout the study.

## Statistical Data Processing and Analysis

Data collection forms and biological specimens were collected daily from the study sites and stored in a secure location at the Institute of Public Health (IPH). Data entry also took place at IPH, with data from all study groups double-entered into the SPSS version 12 software. Any discrepancies in data entry were resolved by the Data Entry Manager, who also cleaned the data by examining frequencies and cross-tabs for inconsistencies.

A preliminary data analysis plan developed by the SWG guided data analysis. For IDU and MSM, data from the SPSS program were transferred into a software package designed specifically for the analysis of RDS data (RDS Analysis Tool version 5.4.0). For the IDU and MSM study groups, a partition analysis was performed that allowed the analyst to define multiple exclusive subgroups of a population (e.g., participants who use condoms consistently with regular partners); from those subgroups the RDS software generates population proportion estimates and confidence intervals. These estimated population proportions and their corresponding confidence intervals provide a method for characterizing the larger community of IDU and MSM in Tirana. Essentially, RDS makes it possible to estimate, based on the network data collected from the study sample, the characteristics of a broader network of IDU and MSM in Tirana. Therefore, the IDU and MSM data tables have two columns. The left column presents the sample percentages; that is, the actual proportion of the sample that had a specific characteristic (e.g., the percentage of male and female respondents among IDU). The right column presents the estimated population proportion as calculated using the RDS software analysis package. The population proportion and corresponding confidence intervals provide an estimate of the characteristics of the larger network of IDU and MSM in Tirana. Such estimates of population proportions are important for policymakers and program designers because the population estimates may vary from the sample characteristics, and it is important to understand not only the sample but also the larger IDU and MSM networks within the city. The Results section of this report emphasizes presentation of data on the estimated population proportions, with reference to sample percentages only when the two figures differ greatly.

Data analysis of the information from the Roma and General Population was performed using SPSS version 12. These data were first weighted based on the probability of selection into the study. Simple statistical tools, such as frequency distribution, percentages, range, proportions, mean, and median were used to analyze the weighted data from the surveys.

## Background Information

To date, little is known about HIV/AIDS in Albania, and the Bio-BSS is the first systematic attempt to understand the HIV epidemiology and the behaviors among three distinct groups: IDU, MSM, and Roma. The following background information on Albania illustrates the contextual setting within which the Bio-BSS took place. Such information provides a framework for considering the study findings as well as a guide to data use as a means to strengthen the National response to HIV/AIDS.

### Albania

Albania is a small country (about 28,748 km<sup>2</sup>) in southeastern Europe. It borders Greece to the south, the former Yugoslav Republic of Macedonia to the east, the United Nations–administered province of Kosova and Republic of Serbia and Montenegro to the north, and the Adriatic and Ionian Seas to the west. There are 720 km of land borders and 362 km of coastline. The terrain is mountainous, except along the central coast. About 42% of the 3.1 million people of Albania live in urban areas, and approximately 20% live in the capital, Tirana.<sup>1</sup> Albania has the youngest population in Europe, with an average age of 29 years, and 40% of the population is under 18 years old. Albanians are the majority ethnic group, making up over 95% of the population. Albania is a multi-religion country; the three major religions—Islam, Orthodox Christian, and Roman Catholic—have contributed significantly to Albanian heritage and culture.

Albania is a lower middle income country, with a Gross National Income per capita of US\$1,380. During the past 15 years, Albania has experienced continuous political and social change. After a period of transition, interrupted numerous times by social crises, such as those of the years 1991–1992 and 1997 (the collapse of pyramid schemes) and the Kosovo crisis in 1999, Albania is now undergoing profound economic and structural reforms. The economy of the country is changing from a central economic planning system to a free-market system, and many questions related to privatization, property ownership claims, and appropriate regulation of business remain unresolved.<sup>1</sup>

During the years 1992–1993, there was a huge wave of emigration from Albania, mainly to neighboring European countries (Greece and Italy). During the period 1990–1995, it is estimated that the number of emigrants fluctuated between 300,000 and 600,000, and the total number of emigrants during that period represented 9–11% of the total 1995 Albanian population. It is estimated that about 40% of these emigrants are women, and a new pattern of women emigrating alone without family members has been noted in recent years. Female trafficking and exploitation as sex workers has appeared in the aftermath of the fall of the former regime and in the vacuum of legislation.<sup>2</sup>

Social changes are also associated with the internal migration within Albania, of the population toward the big cities and, particularly, toward the capital city of Tirana. The internal migration during these years brought changes in the ratio of the urban/rural population. In 1989, the urban population was 36% of the total population; by 2001, the urban population had increased to 42%.<sup>1</sup>

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<sup>1</sup> INSTAT, Census 2002.

<sup>2</sup> National Equity Committee, 2002; Lesko et al., 2003.

The demographic changes and the urbanization process are directly reflected in the decrease of the average household size. In 1979 the average household size was 5.6 persons, with 4.6 persons in urban areas and 6.2 persons in rural areas. The same indicator in 1989 was 4.7, 3.9, and 5.3 persons, respectively, and in the 2001 census was 4.2, 3.9, and 4.5 persons, respectively.<sup>1</sup> It appears that the tendency toward a family with two parents and two children is the new norm in Albania, as in many other countries.

## HIV/AIDS/STI in Albania

The scale and dynamics of the HIV/AIDS epidemic in Albania are difficult to characterize at present. Since 1993, 176 cases of HIV have been identified; 28 new cases were identified during 2005. More than 90% of these infections occurred due to sexual contact (79% heterosexual and 12% homo-bisexual), and the most affected age group is people between the ages of 30 and 40 years. Only 26 blood donors have tested positive for HIV since blood screening began in 1986. HIV transmission via infected blood has been confirmed in 8 cases, mother-to-child-transmission (MTCT) in 5 cases, and injecting drug use in 1 case.<sup>3</sup>

Voluntary counseling and testing (VCT) centers are a new phenomenon in Albania, with few facilities providing the service. Testing is conducted by IPH and the University Hospital Center in Tirana (UHCT). The UHCT also offers free antiretroviral treatment (ART) for people living with HIV/AIDS (PLWHA). With regard to AIDS and people living with HIV, there is at least the perception of a significant lack of confidentiality, as well as severe stigma, discrimination, and rejection at all levels of society. This situation means that individuals and families may resist talking about HIV/AIDS. Ignorance and a sense of disbelief or apathy surrounding HIV/AIDS also impede discussion of this issue.<sup>4,5,6</sup>

Similarly, there is a paucity of accurate data available on other sexually transmitted diseases (STDs) in Albania. During the decades of Albania's isolation (1960s until early 1990s), STIs such as syphilis and gonorrhea were virtually eliminated. However, by the end of 2003, 138 cases of syphilis had been identified in Albania, with women accounting for 48% and men 52% of the cases. Of these 138 cases, 45% had primary syphilis (IPH, 2004). A concomitant HIV infection was observed in 4.5% of the cases in the past 3 years.<sup>7</sup>

In addition, an increase in the number of gonorrhea cases has been detected through routine hospital-based surveillance; a laboratory surveillance of gonorrhea is currently being established. Recent studies also show the presence of herpes viruses among women of child-bearing age. Another study performed by the IPH STI laboratory documented vaginal discharge and the presence of *Chlamydia trachomatis* in 21% of 527 women in Tirana.<sup>8</sup>

During the design phase of the Bio-BSS, the SWG reviewed reports from previously conducted studies and activities about HIV/AIDS/STI and related risky behaviors. The main studies and their key findings identified during this review process include the following:

- Reproductive Health Survey<sup>9</sup> (RHS), conducted in Albania in 2002. Albania was the eighth country in the region to conduct this survey, which was the first systematic effort to gather representative national data on population and reproductive health issues in Albania. The RHS examined patterns and levels of fertility, family planning,

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<sup>3</sup> IPH, Press conference, 2005.

<sup>4</sup> Rapid Assessment and Response, UNICEF, Tirana, 2002.

<sup>5</sup> Rapid Assessment and Response, UNICEF, Tirana, 2004.

<sup>6</sup> Assessment of QOL of PLWHA, UNICEF, Tirana, 2004.

<sup>7</sup> IPH, unpublished data, 2004.

<sup>8</sup> IPH, unpublished data, 2003.

<sup>9</sup> Albania Reproductive Health Survey, 2002.

contraceptive use and method selection, health behaviors, knowledge of HIV/AIDS, and attitudes toward specific contraceptive methods and abortion. In terms of HIV-related risk behaviors, this study found that only 16% of the 15–24-year-olds reported condom use. One-third of young adult women (32%) and 29% of young adult males reported having had sexual intercourse. Study results also showed that only 17% of women and 33% of men know where HIV tests are available.

- Two Rapid Assessment and Response studies<sup>4,5</sup> (RARs), carried out in 2002 and 2004 among vulnerable groups, including young Roma, MSM, commercial sex workers, drug users, and mobile populations. The information in these studies was gathered using different methods (e.g., surveys, focus group discussions, interviews, observations, and mapping exercises), including both qualitative and quantitative data on sexual behaviors of the target populations. According to one RAR study,<sup>10</sup> among a non-probability sample of 170 IDU, 64% of all drug users inject. Two out of every three IDU also reported sharing needles and syringes, but bleaching was practiced infrequently. Sharing syringes was not perceived as a risk for HIV, and knowledge about HIV and STI was low among this population. Many IDU also reported having multiple sex partners, and few reported condom use. Data from IPH also revealed a high prevalence rate of hepatitis C (12.6%) among 63 IDU tested during a pilot study.<sup>11</sup> In 2002, the Toxicology Center in the Central University Hospital treated 1,260 IDU. 65% of these patients were between 20 and 30 years old, and 90% were using heroin.
- Youth risk behavior study, conducted in 2004.<sup>12</sup> This study involved a large representative sample (about 3,600 students nationally) of high school students between the ages of 14 and 18 years. The study's qualitative findings cover a broad range of risk behaviors, including those related to HIV/AIDS and STIs. About 20% of the sample reported having had sexual intercourse, with about 65% of those who had ever had sex reporting condom use. Data also showed that only 3.5% of the sample had more than one sexual partner, and that about 4.5% had sexual intercourse below the age of 14 years.

While the above studies provide valuable information on reproductive health, HIV, and STI issues, only one of the studies used a probability sample. Thus, many of the HIV/AIDS-related findings from these studies are not generalizable to a larger population. In addition, few studies have specifically examined the biological infections and behavioral trends among IDU, MSM, and Roma populations. Moreover, little is known about the epidemiology of HIV in Albania, including current transmission patterns and future projections. Conditions in Albania are such that there is the potential for the rapid spread of HIV in Albania. These conditions include rising rates of injecting drug use, a population of women who engage in commercial sex while living outside the country, an increasingly migratory population, marginalized ethnic groups, and a homosexual population that is highly stigmatized. It is presumed that specific groups, such as IDU and MSM, are particularly vulnerable to HIV transmission due to their unsafe injecting and sexual practices. These populations are hidden, however, and stigma and denial hinder efforts to better understand these high-risk groups and their HIV risk behaviors. The Bio-BSS findings from these high-risk groups are presented in the following sections of this report, as well as a discussion of the implications of these findings for HIV prevention and care strategies in Albania.

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<sup>10</sup> Rapid Assessment and Response among Especially Vulnerable Young People in Albania, 2002.

<sup>11</sup> IPH, unpublished personal communication data, 2003.

<sup>12</sup> Youth Risky Behavior, Albania, 2004, in process.



# Results

## I. Injecting Drug Users

A total of 225 injecting drug users (IDU) completed the Bio-BSS. To assess the non-response bias, all recruiters were asked to provide information on the number of people they tried to recruit as well as information on those who refused the recruiting coupon. The 122 IDU who completed the refusal form distributed 461 coupons, with a refusal rate of 20%.

### 1. Sociodemographic Characteristics of IDU

The population estimates of IDU in Tirana reveal that the majority (91%) of IDU are male (**Table 3**). Given the paucity of females estimated to be in the larger network of IDU, as well as the small number of females in the actual IDU study sample, the study findings were not disaggregated by sex. Population estimates reveal that about half of IDU are younger than 25 (47%). The majority are not married and do not live with a sexual partner (65%), 20% are not married and do live with a sexual partner; and an estimated 22% are married, regardless of living situation.

In terms of education, most IDU have completed at least middle school (8 classes), of whom one-third have also completed high school (12 classes). An estimated 10.5% of IDU are illiterate. Almost 72% of the sample population described themselves as Muslim, while one-fourth described themselves as either Catholic or Orthodox Christian. IDU also seem mobile, with more than one-third spending at least 1 month away from the city during the past year.

**Table 3. Sociodemographic Characteristics of IDU**

Characteristic	Sample (n=225) %	Estimated Population Proportion % (95% CI)
<b>Sex</b>		
Male	93.8	91.4 (86.1-96.1)
Female	6.2	8.5 (3.8-13.8)
<b>Age</b>		
Mean	25.39	--
Median	25	--
≤ 24	47.6	47.3 (39.7-55.1)
≥ 25	52.4	52.6 (44.8-60.3)
<b>Highest Education Completed</b>		
Illiterate	11.6	10.5 (4.8-16)
Primary School (4 classes)	16	17.6 (10.8-25)
Secondary School (8 classes)	32	34.7 (26.5-42.6)
Higher (12 classes)	35.1	31.6 (24.8-41.1)
University	5.3	5.3 (2.4-8.6)
<b>Religion</b>		
Muslim	70.7	71.8 (64.3-80.4)
Catholic	13.3	14.4 (7.9-20.6)
Orthodox Christian	10.2	11.2 (6.2-16.7)

**Table 3. Sociodemographic Characteristics of IDU**

Characteristic	Sample (n=225) %	Estimated Population Proportion % (95% CI)
Other	0.9	0.3 (0.0-0.5)
No religion	2.2	2.1 (0.2-4.5)
<b>Marital Status</b>		
Ever married	24.4	22.5 (14.8-3.1)
Age at first marriage		
≤ 18	(15) 27.3	40.4 (15.0-65.6)
> 18	(39) 72.7	59.5 (34.6-84.9)
Current marital status		
Married and living with spouse	12.9	11.6 (5.7-17.5)
Married but not living with spouse or other sex partner	3.6	3.4 (1-5.7)
Not married, living with sex partner	17.8	19.8 (14.3-26.7)
Not Married, not living with sex partner	65.8	65 (57.6-72.6)
<b>Years Living in Tirana</b>		
Spent 1 month or more away from home in past year	39.3	35.5 (28.4-42.8)

## 2. Alcohol and Drug Use

### Alcohol

IDU did not report high levels of alcohol use. Population estimates show that only 15% consume alcohol daily, and that 35% consume alcohol at least once a week. Almost half of IDU are believed to consume alcohol less than once a week or never.

### Drugs

The median duration of injecting drug use among IDU is estimated to be 2 years. The vast majority of IDU (92%) have injected for 5 years or less, with almost 18% having injected for less than 12 months (**Table 4**). The median age at first injection is 21 years, with about 45% of IDU estimated to have injected before the age of 20. More than two-thirds of the population (82%) injected drugs multiple times daily. The most commonly used injectable and non-injectable drugs in the past month were heroin (91%), diazepam (51%), marijuana (47%), and cocaine (26%).

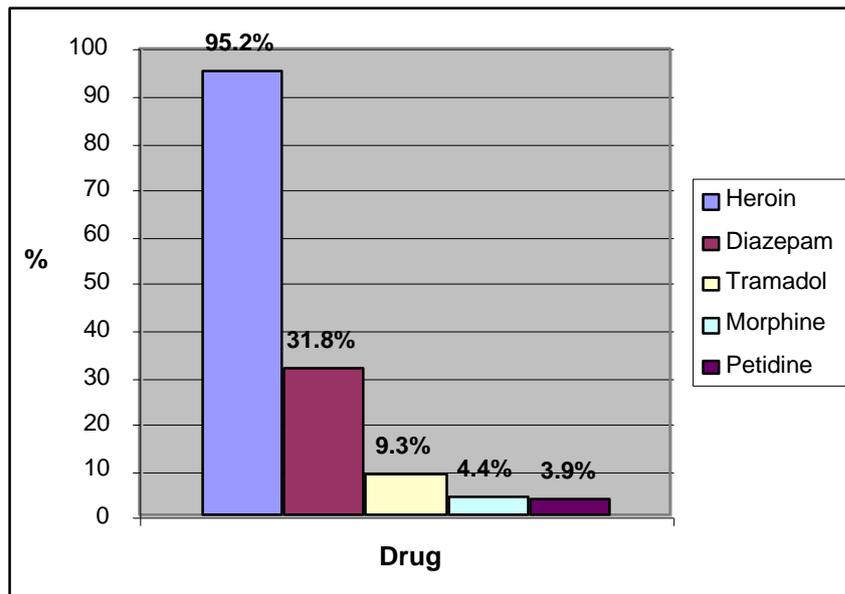
**Table 4. Drug Use Behaviors**

Characteristic	Sample (n=225) %	Estimated Population Proportion % (95% CI)
<b>Drug Use</b>		
Duration of any illicit drug use		
< 1 year	0.4	0.30 (0.0-0.8)
1-5 years	44	53.8 (46.7-60.8)

**Table 4. Drug Use Behaviors**

<b>Characteristic</b>	<b>Sample (n=225) %</b>	<b>Estimated Population Proportion % (95% CI)</b>
> 5 years	55.6	45.7 (38.8-53)
<b>Duration of injection drug use</b>		
< 1 year	13.8	18.1 (11.9-24.8)
1-5 years	76.9	73.5 (66.7-80.8)
> 5 years	9.3	8.20 (4.4-12)
<b>Age at first drug injection</b>		
Median (mean)	21 (21.46)	
≤ 14	4	3.10 (0.6-7.3)
15-18	28.7	28.9 (21.3-36.2)
19-24	44.8	46.1 (37.5-54.2)
≥ 25	22.4	21.6 (15.5-29)
<b>Last month used (injection and non-injection)</b>		
Heroin	93.8	91.2 (86-96.4)
Cocaine	31.6	26.3 (19.9-33.3)
Heroin + cocaine	14.7	10 (5.5-14.5)
Marijuana	47.1	46.5 (38.5-54.5)
Petidine	4	5.4 (1.9-9.1)
Morphine	10.7	8.6 (5-12.9)
Tramadol	27.6	22.8 (17.6-28.3)
Diazepam	51.1	50.7 (42.5-58.7)
Luminal	7.6	7.2 (3.4-11.6)
Amphetamine	6.7	6.5 (3-9.9)
Ecstasy	15.6	12.3 (8-16.9)
Other	6.2	9.1 (4.5-14)
<b>Injected Drugs in Past 1 Month</b>		
<b>Frequency of drug injection in past 1 month</b>		
Once a week or less	5.40	7.40 (2.5-13.2)
2-6 times a week	6.30	6.90 (2.9-12.1)
Once a day	1.80	3.70 (0.0-8)
2 or more times a day	86.5	81.7 (74-88.5)

Heroin was the most common drug injected by IDU during the past month, followed by diazepam, tramadol, morphine, and petidine (**Figure 1**). Population estimates for drug use during the previous 12 months did not differ from the 1-month estimates (data not shown)



**Figure 1. Most Frequently Injected Drugs During Past Month**

### 3. Needle- and Equipment-Sharing Behaviors

Approximately 34% of IDU are estimated to have injected with a used needle or syringe at last injection (**Table 5**). Slightly more than half (54%) of IDU are estimated to have injected with a used needle within the past month, indicating that sharing needles and syringes is a common practice. However, the pool of sharing seems small, with about 42% sharing needles with only one person, and 47% with three or fewer people.

Population estimates also indicate that most IDU who shared needles do so with friends (60%), although a significant proportion also share with their sexual partners (27%), a professional injector (20%), or someone in a “shooting gallery” (20%). A small, but important, percentage (6.3%) are estimated to have never used new needles during the past 1 month, indicating potential pathways for HIV transmission.

**Table 5. Needle- and Equipment-Sharing Behaviors**

Behavior	Sample (n=225) %	Estimated Population Proportion % (95% CI)
Injected with used needle at last drug injection	28	34 (26.5-46.1)
<b>Injecting behavior with used needles in past 1 month</b>		
Frequency of injecting with used needles during past 1 month		
Always	0.9	0.6 (0-1.3)
Most times	8	9.3 (4.6-14.9)
About half the time	6.2	7.8 (3.3-12.3)
Occasionally	37.8	36 (28.8-43.7)
Never	46.2	46 (38.2-54.1)
Types of people with whom respondent shared needles in past 1 month		
Regular sex partner	15.1	20.5 (14-27.3)
Sex partner who respondent did not know	3.1	2.10 (0.5-4.2)

**Table 5. Needle- and Equipment-Sharing Behaviors**

<b>Behavior</b>	<b>Sample (n=225) %</b>	<b>Estimated Population Proportion % (95% CI)</b>
Friend	53.8	50.9 (42.9-59.7)
Dealer	6.2	7.00 (3.4-11.1)
Professional injector	18.7	19.4 (12.7-27.1)
Someone in a shooting gallery	14.7	14.7 (9.7-20.1)
Prisoner	2.7	3.3 (0.5-7.2)
Number of people from whom respondent shared needles in past 1 month		
0	39.1	41.2 (33.8-49.2)
1-3	49.3	46.5 (39.1-53.4)
≥ 4	8.4	9.7 (5-15.3)
Don't know	2.7	2.3 (0.6-4.5)
Frequency, in past 1 month, of injecting with a needle that noone else but respondent had ever used		
Every time	36.2	38.3 (31.7-47.6)
Most of the time	40.3	35.9 (26.8-41.1)
Sometime	16.7	18.1 (12.3-26.3)
Never	5.9	6.3 (2.6-10.9)
Don't know	0.9	1.1 (0-2.8)

Note: Used needle is a needle or syringe that has previously been used by someone else.

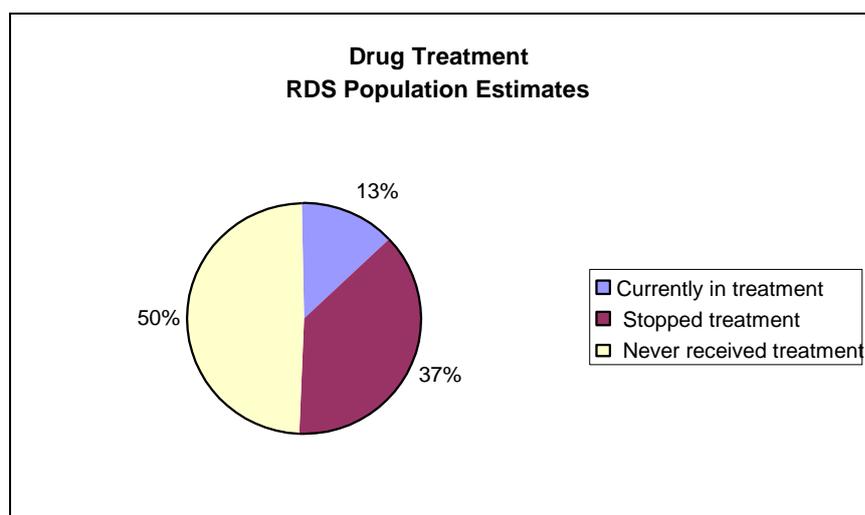
About 14% of IDU are estimated to have injected with a pre-filled syringe during the past month. Additionally, almost 6% always or almost always used syringes that someone else had squirted drugs into (i.e., frontloading, backloading, or splitting a hit), although the majority (70%) did not do this. About two-thirds of respondent (69%) drew drug solution from a common container used by others during the same time period. Similarly, sharing equipment seemed to be a fairly common occurrence, with two-thirds always, almost always, or sometimes sharing with others.

Population estimates show that the vast majority of IDU clean their needles or syringes every time (53.2%) or almost every time (25%). However, the cleaning agents are predominantly cold or hot water (65% and 24.3%, respectively), with a low percentage of IDU using alcohol or boiling water. No one in the study reported using bleach.

The overwhelming majority of IDU know where to obtain new syringes when they need them (91.5%), with 98% citing pharmacies as a place to obtain new needles/syringes. Only 11% mentioned needle exchange programs as a source of clean needles/syringes.

#### **4. Drug Treatment**

Population estimates show that almost half of all IDU (49.8%) have not received any treatment for their drug addiction, while only 13.4% are currently under treatment (**Figure 2**). Among those in treatment, detoxification with other drugs is the most commonly received therapy (54%), followed by methadone maintenance therapy (48%), outpatient counseling (41%), and detoxification with methadone (23%).



**Figure 2. Estimated Drug Treatment for Drug Addicts**

## 5. Sexual Behaviors and Condom Use

Almost 90% of IDU are estimated to have ever engaged in sexual intercourse, while fewer (77%) had sexual intercourse in the past 12 months (**Table 6**). The median age at first sexual encounter was 16 years (range 10–17 years). Population estimates reveal that more than half of IDU have had two to four sex partners in the previous 12 months.

Among those who have had sex in the past 12 months, population estimates show that 65.7% had sex with a regular partner. Similarly, almost 64% of those who are sexually active have had sex with non-regular partners. Only 4% of participants reported having sex with commercial sex partners in the past 12 months. Of those who reported no regular partners, 31% reported having one partner, 29% reported having two to four partners, and 3% reported having five or more partners (data not shown).

Condom use varies greatly by the type of sex partner, but it was not common to use condoms with either regular or non-regular sex partners. It is estimated that more than one-fourth (27.8%) of the IDU population used a condom with their regular partner during their last sex, and 38.9% with non-regular partners. Even fewer IDU use condoms consistently: only 6% with regular sex partners and 17% with non-regular sex partners.

The vast majority of respondents (93.7%) knew where to obtain condoms, with the majority mentioning pharmacies (95.3%). Other frequently mentioned sources of condoms were NGOs, friends, and shops. Almost all respondents reported that condoms were available within a 1-hour walk.

**Table 6. Sexual Behaviors and Condom Use**

	Sample (n=225) %	Estimated Population Proportion % (95% CI)
Ever had sex	89.8 (n=202)	88.2 (82.4-93.6)
Age at first sex		
Median	16	--
≤ 14	13.4	15.8 (9.4-22.2)
15-18	76.6	73.9 (66-82.8)

**Table 6. Sexual Behaviors and Condom Use**

	<b>Sample (n=225) %</b>	<b>Estimated Population Proportion % (95% CI)</b>
> 19	10	10.2 (4.6-16.8)
Had sex in the past 12 months	83.2 (n=168)	76.8 (67.4-85.1)
<b>Number of different sex partners in the past 12 months</b>		
Mean	2.42	--
Median	2	--
Mode	1	--
1	39.3	43.6 (36.3-58)
2-4	50	51.2 (38-58.7)
≥ 5	10.7	5.0 (1.3-8.4)
<b>Regular Partners: Sex and Condom Use</b>		
Had sex with regular partner during past 12 months	62.5 (n=105)	65.7 (55.7-76.2)
Condom use at last sex with a regular partner	35.2 (n=37)	27.8 (18.9-44.9)
<b>Reasons for not using condoms at last sex with regular partner</b>		
Not available	6	12.5 (1.6-25.6)
Partner objected	6	9.7 (1.3-20.5)
Don't like condoms	47.8	54.2 (29.2-66.6)
Didn't think it necessary	23.9	23.4 (8.8-44.4)
Didn't think of it	16.4	6.2 (1.2-11.9)
Consistent (100%) condom use with regular partner among those who had sex with a regular partner in past 12 months	6.2	5.3 (1.1-9.7)
<b>Commercial Sex Partners: Sex and Condom Use</b>		
Had sex with commercial sex partner during past 12 months	4.3 (n=7)	4.2 (0.8-5.5)
<b>Non-Regular Non-Commercial Sex Partners: Sex and Condom Use</b>		
Had sex with non-regular, non-commercial partner during past 12 months	65.7 (n=109)	63.9 (50.5-72.4)
<b>Number of non-regular, non-commercial partners in past 12 months</b>		
0	35.1	36.6 (29-49.8)
1	27.4	31.1 (21.4-38.2)
2-4	31	28.9 (18.2-38.9)
≥ 5	6.5	3.2 (0.4-6.7)
Condom use at last sex	48.1 (n=52)	38.9 (32.7-58.1)
<b>Reasons for not using condoms at last sex with non-regular, non-commercial partner</b>		
Don't like condoms	52.6	27.6 (5.5-52.6)
Didn't think it necessary	24.6	33.5 (8.4-70.2) <sup>13</sup>
Didn't think of it	17.5	34.4 (11.4- 68.7)
Other	14	25.6 (1.9- 58.9)
Consistent (100%) condom use with non-regular, non-commercial sex partner in past 12 months	13.8	8.10 (5.3-11.5)

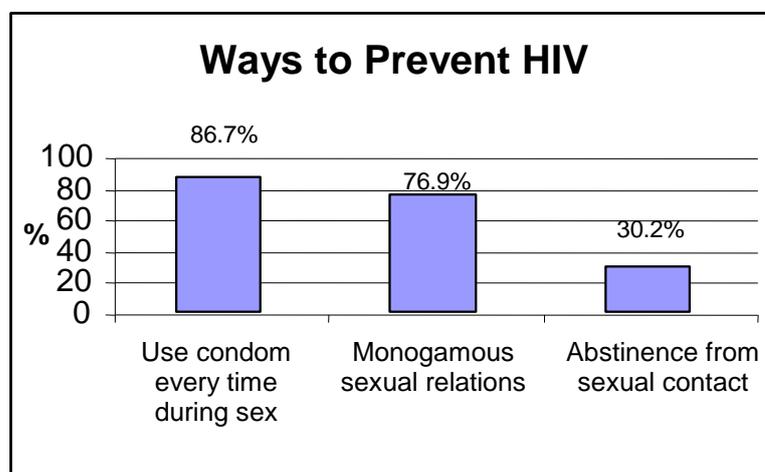
## 6. STI Knowledge

The vast majority of the IDU respondents (82.5%) had heard about infections being transmitted sexually. The most commonly cited STI symptoms for females reported by all IDU (both male and female) included foul-smelling discharge (25.4%), itching (18.6%), pain during sex (17.1%), genital discharge (17.1%), and pain/burning during urination (12.8%). Major STI symptoms cited for males were burning/pain on urination (30.3%), genital discharge (22.7%), pain during sex (21.6%), and genital ulcers/sores (13.2%).

## 7. HIV Knowledge

Almost 9 in 10 IDU respondents (89.3%) had heard about HIV or AIDS. Only an estimated 13%, however, knew someone who is infected with HIV or who has died of AIDS. About one-fourth of those who knew someone infected or who had died from HIV/AIDS said the person was a close friend.

Regarding HIV/AIDS prevention knowledge, an estimated 9 in 10 IDU (86.7%) know that a person may avoid HIV/AIDS by consistently using condoms, while about three-fourths (76.9%) cited a monogamous sexual relationship as a means of protection. However, less than one-third of the sample (30.2%) mentioned abstinence from sex as a way to protect oneself from HIV/AIDS (**Figure 3**).



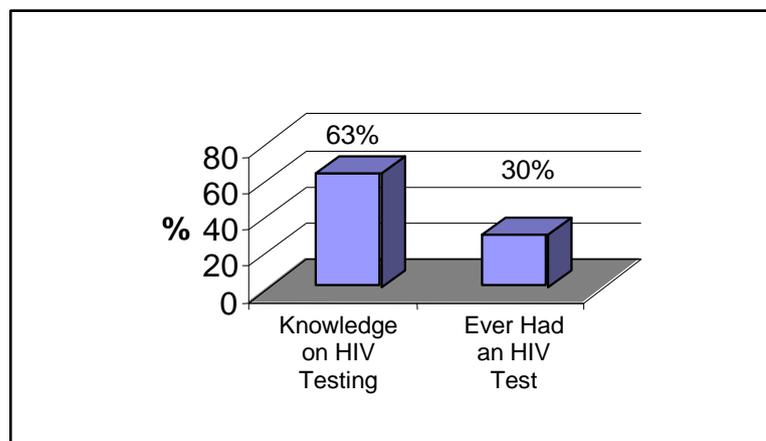
**Figure 3. Knowledge About How to Prevent HIV/AIDS**

Almost one-fourth of IDU (24.5%) believe that HIV can be transmitted via mosquitoes. Almost one-half, however, were aware that sharing a meal with an HIV-positive person could not transmit HIV/AIDS. The vast majority of IDU (91.6%) also know that a person can become infected with HIV by injecting with used needles, and almost three-fourths know that switching from injecting drugs to non-injecting drugs could help protect them against HIV.

It is estimated that two-thirds of IDU (66.1%) know that a pregnant woman infected with HIV can transmit the virus to her unborn child, but fewer (43%) know that HIV can be transmitted through breastfeeding. Only one-third of this population was aware that a woman can reduce the risk of transmitting HIV to her unborn child by taking antiretroviral (ARV) medication.

## 8. HIV Testing Knowledge and Behaviors

An estimated two-thirds of IDU (63%) are aware that confidential HIV testing is available, with 30% having had an HIV blood test (**Figure 4**). Of those who were tested, almost two-thirds were tested voluntarily, and most respondents (94.3%) who were tested for HIV had received the results of their test.



**Figure 4. HIV Testing**

## 9. Stigma and Discrimination

The vast majority of IDU (82%) are not willing to share a meal with a person known to have HIV/AIDS (**Table 7**). Also, almost three-fourths reported that they would not buy food from shopkeepers known to have HIV. Estimates also indicate that more than half (57.4%) believe that a teacher infected with HIV, but who is not sick, should not be allowed to teach in school, and 45% believe that an infected, but healthy, student should not be allowed to continue attending school. More than two-thirds of IDU would be willing to take care of a male or female relative who is ill with HIV; however, more than three-fourths would want to keep an HIV-positive family member's status a secret.

**Table 7. Stigma and Discrimination Toward PLWHA**

	Sample (n=225) %	Estimated Population Proportion % (95% CI)
Willingness to share meal with HIV-positive person (No)	80.8	82.2 (74.6-87.5)
Willingness to care for HIV-positive male relative in household (No)	17.9	16.0 (10.5-20.9)
Willingness to care for HIV-positive female relative in household (No)	18.4	17.0 (11.3-23)
HIV-positive teacher who is not sick should be allowed to continue teaching in school (No)	55.2	57.4 (49.1-65.3)
HIV-positive student who is not sick should be allowed to continue attending school (No)	44.8	44.8 (36.4-53.8)
Willingness to buy food from HIV-positive shopkeeper/food seller (No)	74.4	74.2 (66.5-80.9)
Want to keep it secret if family member HIV infected (Yes)	79.8	78.9 (72.8-85.1)

## 10. RDS Network Size and Recruitment Information

### Networking

As a part of the RDS methodology, survey respondents were asked about the number of IDU the respondent knew and who likewise knew the respondent. Using this information, the RDS software can calculate the adjusted network sizes for the population (**Table 8**). Results from this process show that male IDU had a larger adjusted average personal network size than female IDU (19 people for males and 15 people for females). IDU who had been injecting for more than 1 year, and who were older, also tended to have slightly larger network sizes (with a range from 13 to 22 people). Adjusted network sizes did not differ greatly among IDU across educational levels.

**Table 8. IDU Adjusted Network Size, by Selected Characteristics**

Characteristic	Adjusted Network Size
<b>Sex</b>	
Male	19.4
Female	14.9
<b>Age</b>	
≤ 24	17.4
≥ 25	20.9
<b>Length of time injecting</b>	
< 1 year	13.1
1-5 years	20.2
> 5 years	21.5
<b>Education</b>	
None	19.5
Primary	17.5
Secondary	17.5
Higher	21.3
University	19.9

### Recruiting

RDS data also provide information on recruiting patterns among respondents. To determine if recruiters and their recruits are similar, RDS calculates a homophily (H) measure of self-affiliation bias. For example, if homophily equals one ( $H = 1$ ), then all network ties are formed within a group (e.g., males recruit only males). If homophily equals zero ( $H = 0$ ), then all network ties are formed randomly. And if homophily equals minus one ( $H = -1$ ), then all network ties are formed out of a group (e.g., males recruit only females); a score of  $H = -1$  is also referred to as heterophily. Acceptable homophily scores range between  $H = -0.3$  and  $H = +0.3$ . Recruitment patterns and homophily scores were examined with respect to sex, age, and length of time injecting drugs for the IDU population. These factors are important because they provide a better understanding of the demographic characteristics and risk factors of this hidden population.

In terms of gender, female IDU in Tirana recruited only male IDU ( $H = -1.00$ ), resulting in a score indicating heterophily. Men, however, recruited women 7% of the time ( $H = 0.16$ ). The homophily measures for age was between  $-0.3$  and  $+0.3$  reflecting a random selection of

participants. The homophily indices for IDU who had been injecting for 1-5 years and for more than five years were also within the -0.3 and +0.3 range (H=0.19 and 0.13 respectively). IDU who have been injecting drugs for less than one year, however, were less likely to recruit their peers who had also been injecting for less than a year (H= -0.47). Overall, participants from the three categories related to length of injection behavior tended to recruit participants who had been injecting for 1-5 years (mid-term injectors) (82% of new, 79% of mid-term, and 69% of long-term injectors recruited mid-term peers).

## 11. Biological Data

None of the IDU respondents tested positive for HIV, so the RDS software was unable to estimate the proportion of the Tirana IDU network that may be living with HIV. More than one-fourth of the population, however, are estimated to be infected with hepatitis C, an infection that is transmitted the same way as HIV. Fewer IDU have hepatitis B (12.4%) or syphilis (1.3%) (Table 9).

**Table 9. Biological Data for IDU**

<b>Disease</b>	<b>Sample (n=225) %</b>	<b>Estimated Population Proportion % (95% CI)</b>
<b>HIV</b>	0.0%	NC
<b>Hepatitis B</b>	12.4%	14.9 (7.9%-21.3%)
<b>Hepatitis C</b>	26.7%	25.4% (18.5%- 32.7%)
<b>Syphilis</b>	1.3%	0.6% (0.1%-1.4%)

Note: NC means CI not calculated due to small sample size.



## II. Men Who Have Sex with Men

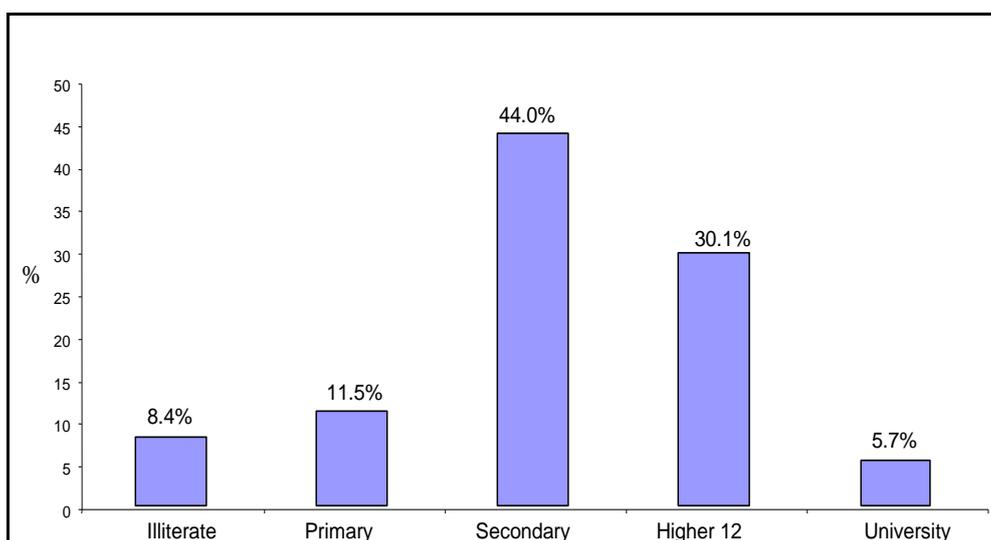
A total of 199 MSM completed the Bio-BSS. To assess the non-response bias, all recruiters were asked to provide information on the number of people they tried to recruit as well as information on those people who refused the recruiting coupon. The 52 MSM who completed the refusal form distributed 408 coupons, with a refusal rate of 27%.

### 1. Sociodemographic Characteristics of MSM

The median age of MSM participants was 26.9 years, and more than half of MSM in Tirana are estimated to be younger than 24 years of age. Population estimates indicate that more than 8% of MSM never received any formal education, half of MSM completed the compulsory education of 8 classes, and 30% completed 12 classes. The majority of respondents referred to themselves as Muslim, an estimated 40% have been married to a female (although almost none of them currently live with a female sexual partner), and more than one-third have spent at least 1 month away from home in the past year. **Table 10** presents the sociodemographic characteristics of MSM in Tirana. **Figure 5** shows the educational level of MSM in Tirana.

**Table 10. Sociodemographic Characteristics of MSM**

Characteristic	Sample (n=199) %	Estimated Population Proportion % (95% CI)
<b>Age</b>		
Mean	26.9	--
Median	24.0	--
< 24	55.3	54.2 (44.7-64.0)
≥ 25	43.2	45.7 (35.9-55.2)
<b>Highest Education Completed</b>		
Illiterate	13.1	8.4 (5-13.1)
Primary School	17.7	11.5 (7-16.7)
Secondary School	40.1	44 (34.8-53.4)
Higher 12 classes	24.8	30.1 (21.9-38.1)
University	4	5.7 (1.6-10.6)
<b>Religion</b>		
Catholic	7.6	10.7 (3.9-18.1)
Muslim	81.2	72.4 (64.2-81.4)
Orthodox Christian	7.6	10.4 (4.7-16.3)
No religion	1.5	4.3 (0.0- 11.9)
No answer	1	2 (0.0-4.6)
<b>Married/Currently Living with Female Sex Partner</b>		
Ever married to a female	37.6	40.3 (29.6-50.1)
Currently married or living with female sexual partner	0.5	0.7 (0.0-1.4)
Spent 1 month or more away from Tirana in past year	37.6	34.9 (27-42.6)



**Figure 5. Educational Level Among Tirana MSM**

## 2. Alcohol and Drug Use

### Alcohol

Estimates indicate that about one-third of the MSM population consumes alcohol daily, while another one-third consume alcohol less than once a week or never.

### Drugs

In terms of drug use, an estimated 65% of MSM have tried drugs (injected or non-injected), with half having experimented with marijuana and one-third with heroin. More than 20% of MSM also have tried cocaine and ecstasy. Population estimates indicate that more than one-fourth of MSM inject drugs (27.1%), with heroin being the most frequently injected drug among MSM in Albania (Table 11).

**Table 11. Alcohol and Drug Use**

Characteristic	Sample (n=199) %	Estimated Population Proportion % (95% CI)
<b>Frequency of alcohol use in past 4 weeks</b>		
Every day	20.9	28 (19.5-35.9)
At least once a week	48.0	42 (35.1-51.3)
Less than once a week or never	31.1	29 (21.8-36.8)
<b>Have ever used drugs (injected or non-injected)</b>	65.9	64.6 (55.3-74.6)
<b>Have ever injected drugs</b>	27.9	27.1 (18.9-35.3)

## 3. Sexual Behaviors and Condom Use

The MSM population is sexually active, with almost all (99.8%) estimated to have had sex in the past 6 months. An estimated 15% of MSM were forced to have sex when they did not want it. The remainder of this section presents data on MSM sexual behaviors by type of sex (i.e., oral or anal) and by type of partner (i.e., commercial or other non-commercial partners).

## Oral Sex

In the 6 months preceding the survey, population estimates indicate that about 60% of MSM had oral sex with a man, and almost half (46.6%) either ejaculated into his partner's mouth or his partner ejaculated into his mouth (**Table 12**). The majority of MSM (67%) had more than one sexual partner during this period, and almost 10% had five or more oral sex partners; the median number of partners was two. At last oral sex, only half of MSM are estimated to have used condoms, while population estimates reveal that only 35% of MSM used condoms consistently during oral sex; 18% are estimated to never use condoms during oral sex.

**Table 12. Sexual History: Oral Sex and Condom Use**

Characteristic	Sample (n=199) %	Estimated Population Proportion % (95% CI)
Had oral sex in past 6 months	61.0 (n=119)	59.7 (51.8-69.5)
Number of men with whom respondent had oral sex in past 6 months		
Median (mean)	2 (6.38)	--
1	27.7	32.5 (17.4-44.5)
2-4	52.1	58.2 (42.0-70.9)
≥ 5	20.2	9.2 (3.8-24.9)
Used condom at last time having oral sex	58	54.5 (40.2-72.4)
Frequency of condom use during oral sex in past 6 months		
Every time	32.8	34.8 (23.4-49.9)
Almost all the time	25.2	30.9 (16.7-47.2)
Some of the time	22.7	16.5 (10.2-35.0)
Never	19.3	17.6 (3.3-20.2)
Ejaculated in mouth (his or his partner's) during oral sex in past 6 months	50.4	46.6 (34.3-63.1)

## Anal Sex

Almost all MSM respondents (97%) had anal sex in the past 6 months (**Table 13**). The questionnaire included questions related to the type of anal intercourse in which the respondent was involved: insertive or receptive. It is estimated that the majority of MSM who are involved in sexual activities are the insertive partner rather than the receptive partner. Almost half of MSM who are the insertive partner had two to four partners; another 8% reported having five or more partners in the past 6 months.

**Table 13. Sexual History: Anal Sex and Partner Type**

Characteristic	Sample (n=199) %	Estimated Population Proportion % (95% CI)
Had anal sex with a man in past 6 months	97.9	96.5 (91.5-99.7)
Number of men respondent had anal sex with in past 6 months where respondent was receptive partner		
Median (mean)	0 (2.92)	--
0	56.9	56.8 (47.8-64.6)
1	19.0	26.9 (18.7-34.8)
2-4	15.9	13.8 (9.50-20.6)
≥ 5	8.2	2.2 (0.90-4.10)

**Table 13. Sexual History: Anal Sex and Partner Type**

Characteristic	Sample (n=199) %	Estimated Population Proportion % (95% CI)
Number of men respondent had anal sex with in past 6 months where respondent was insertive partner		
Median (mean)	2.0 (3.8)	--
0	11.3	10.6 (5.20-17.6)
1	20.0	32.7 (22.9-41.6)
2-4	52.8	48.2 (39.4-56.8)
≥ 5	15.9	8.4 (4.50-14.1)

**Commercial Sex Partners**

It is estimated that 40% of MSM had anal sex with a commercial partner in the 6 months preceding the survey (**Table 14**). Out of MSM who have had a commercial sex partner, the overwhelming majority (84%) used a condom with that partner during the last anal sex, while the remaining 16% did not use a condom during last anal sex with a commercial partner. On the other hand, only 16% used a condom consistently during every anal sex act with a commercial sex partner. The main reason cited for not using a condom was that they “did not like them”; other less frequently mentioned reasons were related to access (“not available” or “too expensive”) and to awareness (“not necessary” or “did not think of it”). Only a minority among MSM have discussed the risk of HIV, AIDS, and other STIs with all of their commercial sex partners (17%). Another 33% had discussed it with their commercial sex worker partner in some cases, while the remaining 41% never had discussed such an issue; 17.3% refused to answer the question.

**Table 14. Anal Sex and Condom Use with Commercial Sex Workers**

Characteristic	Sample (n = 199) %	Estimated Population Proportion % (95% CI)
Had anal sex with commercial sex partner in past 6 months	41.5 (n=80)	39.4 (30.9-49.5)
Number of commercial sex partners in past 6 months		
1	23.4	45.2 (19.6-55)
2-4	51.8	39.9 (16.1-56.2)
≥ 5	24.6	14.7 (9.1-49)
Median (and mean) number of times have had anal sex with most recent commercial sex partner in past 30 days	2 (5.29)	--
Condom used during last anal sex with commercial sex partner	72.5	84 (69.7-96.9)
Reasons for not using condoms at last sex with last commercial partner*		
Not available	9.5	--
Too expensive	9.5	--
Partner objected	4.8	--
Don't like condoms	52.4	--
Didn't think it necessary	9.5	--
Didn't think of it	4.8	--
Other	14.3	--
Consistent (100%) condom use with all commercial sex partners in past 6 months	16.1	17.7 (11.2-24.6)

**Table 14. Anal Sex and Condom Use with Commercial Sex Workers**

Characteristic	Sample (n = 199) %	Estimated Population Proportion % (95% CI)
Ever discussed HIV/AIDS or STIs with any commercial sex partners		
With all	23.8	17.3 (3-15.7)
With some	35.0	33 (20.5-58.4)
With none	41.3	41 ( 24.9-63.7)

Note: The small sample size meant that the RDS software was unable to calculate population estimates and corresponding confidence intervals.

### Other Non-Commercial Sex Partners

Of the MSM population in Tirana, 68% have had sex with a non-commercial sex partner in the past 6 months (**Table 15**). A non-commercial sex partner is defined as a person with whom the respondents have had sexual relationships without paying or being paid for it. Multiple partnerships are frequent, with an estimated two-thirds of MSM who have had sex with a non-commercial partner in the past 6 months having had two or more such partners. About 60% used a condom at last sex, but only 30% reported consistent condom use with non-commercial partners. Reasons for not using condoms are diverse; some responses were “not liking them,” others were “did not think it was necessary” or “did not think of it” or “not available at the moment.”

**Table 15. Sexual History: Anal Sex and Condom Use with Non-Commercial Sex Partners**

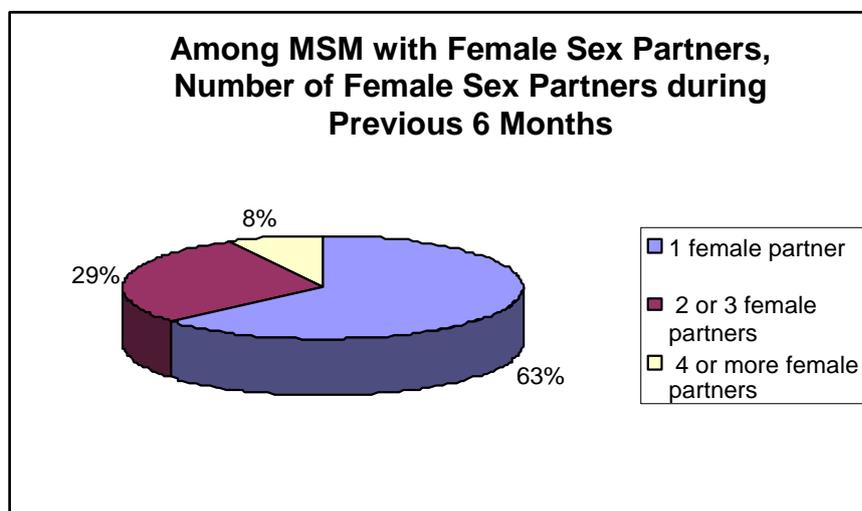
Characteristic	Sample (n=199) %	Estimated Population Proportion % (95% CI)
Had anal sex with non-commercial sex partner in past 6 months	76.3 (n=148)	68.1 (59.5-75.8)
Number of non-commercial sex partners in past 6 months		
1	24.4	32.8(20.9-47.8)
2-4	53	54.3 (41.8-64.4)
≥ 5	2.4	12.8 (6.8-18.9)
Median (mean) number of times have had anal sex with most recent non-commercial sex partner in the past 30 days	3 (3.99)	--
Condom used during last anal sex with non-commercial sex partner	58.5	61.2 (48.1-70.1)
Reasons for not using condoms at last sex with last non-commercial partner		
Not available	16.9	19.4 (6.3-41.3)
Too expensive	1.7	--
Partner objected	1.7	--
Don't like condoms	40.7	44.9 (34.9-65.6)
Didn't think it necessary	25.4	17.2 (5.5-43.3)
Didn't think of it	5.1	9.2 (0-16.5)
Other	10.2	16.2-26.2)

**Table 15. Sexual History: Anal Sex and Condom Use with Non-Commercial Sex Partners**

Characteristic	Sample (n=199) %	Estimated Population Proportion % (95% CI)
Consistent (100%) condom use with all non-commercial sex partners in past 6 months	27.1	28.4 (20.9-37.3)
Ever discussed HIV/AIDS or STIs with any non-commercial sex partners		
With all	28.6	31.4 (22.9-43.9)
With some	27.2	26.3 (16.4-35.4)
With none	42.9	42.2 (30.8-51.8)

### Female Sex Partners

Almost all MSM in the Tirana MSM network (94%) have had sex with a female. It is estimated that 93% had had sex with a female in the past 6 months, and that almost all of those had had two or more female partners during that time (**Figure 6**). Condom use with females is lower than that with other partners, with only half of MSM having used a condom during their last sex act with a female and only 20% reporting consistent condom use with all female partners in the past 6 months.



**Figure 6. Number of MSM Female Sex Partners in Past 6 Months**

### 4. Condom and Lubricant Knowledge

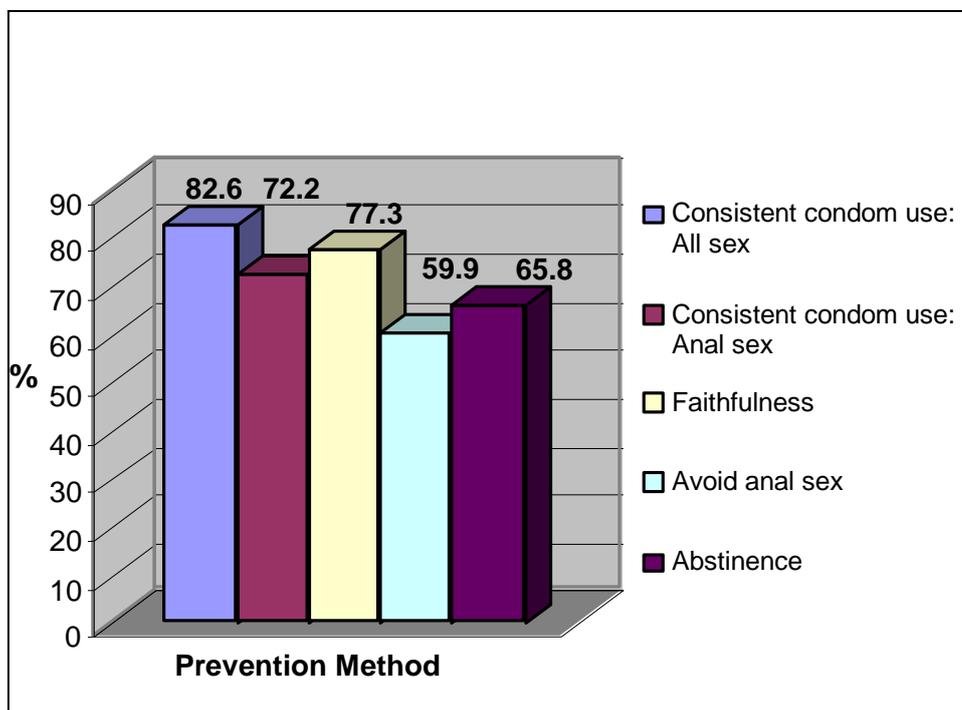
The majority of MSM in Tirana know where to get condoms, with pharmacies and drugstores the most frequently known sources (95%). Lubricants, however, are used by only a minority of respondents (population estimate of 19%). The main reason given for not using lubricants was that they “did not like them.” Among those who used lubricants, almost all used oil-based products, including butter and cooking oil.

### 5. STI/HIV Knowledge and Attitudes

One section of the questionnaire used with MSM was dedicated to exploring their knowledge, opinions, and experiences regarding HIV/AIDS and STIs. Almost the entire sample population had heard about diseases that can be transmitted through sexual intercourse. For

most, however, that was the extent of their knowledge; more than half were not able to describe any specific symptoms of STIs. Among those who did know symptoms, the most frequently mentioned were pain during sex, burning, pain on urination, and genital discharge and itching. Few MSM are estimated to have experienced an STI in the past 12 months, with only about 6.5% having had a genital discharge and only about 5% having had an anal discharge.

MSM have more formal knowledge about HIV/AIDS than about the above-mentioned STIs. It is estimated that 98% of MSM have heard of HIV and AIDS, and the majority know of personal preventive strategies (**Figure 7**). An estimated 86% also know that HIV can be transmitted by using previously used needles, and 80% know that a pregnant mother can transmit the virus to her unborn child. Few MSM (10%), however, recognized that ARV drugs could reduce the risk of mother-to-child transmission of HIV. When it comes to knowledge about modes of transmission, some MSM believe, incorrectly, that there is a risk of transmission when there really is not. For example, only one-fourth of MSM know that HIV is not transmitted through mosquito bites or by sharing a meal with someone living with HIV.



**Figure 7. MSM Knowledge of HIV Prevention Methods**

## 6. HIV Counseling and Testing

The majority of MSM are estimated to know that confidential HIV testing is available in Tirana (**Table 16**). Despite this knowledge, only a small proportion have ever had an HIV test. In fact, the number of MSM who had been tested was too small to generate population estimates about the number who had been tested. The sample characteristics indicate that of those MSM who had been tested, most had taken the HIV test voluntarily, and that the majority of those tested had received their test results.

**Table 16. HIV Counseling and Testing**

<b>Characteristic</b>	<b>Sample (n=199) %</b>	<b>Estimated Population Proportion % (95% CI)</b>
Knowledge about availability of confidential HIV testing in Tirana	79.3 (n=149)	78.9 (72.1-86.5)
Respondents who have ever had an HIV test	11.8 (n=22)	10.7 (6.8-16.3)
Voluntarily took HIV test	81.8	NC
Required to take HIV test	18.2	NC
Respondents who voluntarily took HIV test AND found out their test results	90.9	NC
Time of last HIV test		
Within past 12 months	27.2	NC
> 12 months	72.7	NC

Note: NC means CI not calculated due to small sample size.

## 7. Stigma and Discrimination

**Table 17** lists behaviors that indicate a positive or negative attitude toward persons living with HIV. Only a minority of MSM would share a meal with a person infected with HIV or buy food from a shopkeeper with HIV. About half of MSM do not believe a student or a teacher who is living with HIV, but who is not sick, should be allowed to continue attending school. Attitudes toward family are less discriminatory, with only an estimated one-third of MSM unwilling to care for an HIV-positive male or female relative in the household. However, the majority of MSM reported that they would want to keep the status of an HIV-infected family member secret.

**Table 17. Stigma and Discrimination Toward PLWHA**

<b>Characteristic</b>	<b>Sample (n=199) %</b>	<b>Estimated Population Proportion % (95% CI)</b>
Willingness to share a meal with HIV-positive person (No)	82.2	87.2 (81.6-92.3)
Willingness to care for HIV-positive male relative in household (No)	26.8	33.7 (24.5-43)
Willingness to care for HIV-positive female relative in household (No)	27.8	28.8 (20.9-36.5)
HIV-positive teacher who is not sick should be allowed to continue teaching in school (No)	55.6	52.7 (43.2-62)
HIV-positive student who is not sick should be allowed to continue attending school (No)	53	51.6 (42.4-61.5)
Willingness to buy food from HIV-positive shopkeeper/food seller (No)	75.8	74.2 (65.9-80.9)
Want to keep it secret if family member is HIV-infected (Yes)	85.4	85.1 (77.6-91.1)

## 8. RDS Network Size and Recruitment Information

### Networking

MSM participants were recruited using the RDS methodology and were asked about network size (**Table 18**). MSM were asked specifically about the number of MSM they knew and who likewise knew them. The RDS software, with this information, was used to calculate adjusted network sizes for MSM by age and by education. Overall, the adjusted average personal network size for MSM did not vary according to age. For example, the adjusted network size for MSM under age 24 was 4.8 persons, while that for those ages 25 and older was 4.4 persons. In terms of education, the adjusted network size was larger among MSM with no education or with only primary education (7.4 and 7.2, respectively) than among MSM with higher levels of education (3.6 for MSM who completed university).

**Table 18. MSM Adjusted Network Size, by Selected Characteristics**

Characteristic	Network Size (Adjusted)
<b>Age</b>	
< 24	4.75
≥ 25	4.39
<b>Education</b>	
None	7.4
Primary	7.2
Secondary	3.8
Higher	4.9
University	3.6

### Recruiting

Recruitment patterns and homophily scores were also examined with respect to age and education for the MSM population. (See Recruiting in the IDU Results section for a detailed explanation of homophily and heterophily.). The homophily indices for MSM recruitment were between  $H = -0.3$  and  $H = +0.3$  for both the age and education categories, indicating random selection of participants.

## 9. Biological Data

It is estimated that 0.8% of the MSM network in Tirana are living with HIV, although 3% of the actual study sample population tested positive for HIV (**Table 19**). Among the MSM sample, the rate of syphilis was 4.5%, and the rate of hepatitis B was 15.2%.

**Table 19. Biological Data Among MSM in Tirana**

Disease	Sample (n=199) %	Estimated Population Proportion % (95% CI)
HIV	3.0	0.8 (0.1-2.0)
Hepatitis B	15.2	14.9 (7.9-21.3)
Syphilis	4.5	0.6 (0.1-1.4)



### III. Roma Population and General Population

#### 1. Sociodemographic Characteristics of Roma and General Population

The weighted Roma study sample was young, with one-third (31%) of participants being less than 24 years of age (median age = 31). The majority referred to themselves as Muslims (86.3%). More than 50% had married before the age of 16 (official legal age for marriage in Albania is 18), and the majority who had married before the age of 16 were female (66%). In terms of education, 36% had received no education and one-fourth had completed only 4 years of education. These percentages are particularly low given that primary education is compulsory in Albania. (At the time the data for this Bio-BSS were collected, 8 years of elementary education was mandatory; that has since been increased to 9 years.) Only a small fraction of Roma had attended high school, and only one Roma respondent had completed a university education. While the age structure of the General Population sample was similar to that of the Roma population sample, marriage and educational levels differed dramatically. For example, only 5.5% of the General Population married before the age of 16, and only 1.3% of the General Population sample had never received an education, half had completed high school, and another one-third had completed a university education. Sociodemographic characteristics of the Roma population and the General Population are presented in **Table 20**.

**Table 20. Sociodemographic Characteristics of Roma and General Population**

Characteristic	Roma Population			General Population		
	Male (n=309) %	Female (n=321) %	Total (n=630) %	Male (n=312) %	Female (n=317) %	Total (n=629) %
<b>Age</b>						
Median	32	30	31.0	24	33	25
Mean	31.96	30.62	31.27	28.35	32.51	29.45
≤ 24	29.0	33.8	31.3	56.9	38.7	47.9
25-30	16.6	18.0	17.3	13.0	11.6	12.3
31-36	17.1	14.8	16.0	9.6	10.2	9.9
37-42	19.9	18.0	19.0	8.2	14.3	11.2
≥ 43	17.5	15.4	16.5	12.3	25.3	18.8
<b>Religion</b>						
Muslim	82.3	90.6	86.3	72.9	74.0	73.4
Catholic	1.5	1.1	1.3	2.9	4.3	3.6
Orthodox Christian	0.5	0.7	0.6	8.2	10.4	9.3
No religion	5.5	3.4	4.5	1.4	4.3	2.8
Other	9.6	3.5	6.7	12.9	6.8	9.9
No response	0.5	0.8	0.6	1.7	0.3	1.0
<b>Education Level Completed</b>						
None	32.0	40.3	36.0	1.2	1.4	1.3
Primary (4 classes)	30.4	20.4	25.5	1.4	0	0.7
Secondary (8 classes)	35.1	37.7	36.4	11.8	13.3	12.5
Higher (12 classes)	2.40	1.6	2.0	56.8	52.5	54.7
University	0.10	0	0.1	28.9	32.8	30.8

**Table 20. Sociodemographic Characteristics of Roma and General Population**

Characteristic	Roma Population			General Population		
	Male (n=309) %	Female (n=321) %	Total (n=630) %	Male (n=312) %	Female (n=317) %	Total (n=629) %
<b>Marital Status</b>						
Ever married	90.4	98	94.1	30.2	57.5	43.7
Age at first marriage						
≤ 16	36.9	65.8	51.5	0.6	8.1	5.5
> 17	63.1	34.2	48.5	99.4	91.9	94.5
Current marital status						
Married, living with spouse	77.7	75.6	76.7	29	51.8	40.3
Married, living with other sex partner	0.3	2.3	1.3	0.2	0.0	0.1
Married, not living with spouse or sex partner	0.4	5.7	3	0.3	1.8	1
Not married, living with sex partner	9.6	9.9	9.8	6.6	4.3	5.4
Not married, not living with sex partner	12	6.5	9.3	63.9	42.1	53.1
<b>Spent at least 1 month away in past year</b>	12.7	12.0	12.3	23.4	8.7	16.1

Note: Data weighted according to probability of selection.

Based on their traditions and culture, Roma populations in Albania are considered mobile. The mapping exercise conducted among the Roma population, which served as the basis for the selection of the Bio-BSS Roma sites as described in the Methodology section, revealed that the Roma are settled and integrated in the suburbs of Albania. A question was included in the Bio-BSS Roma questionnaire to assess if mobility was a potential risk factor for the transmission of STIs. When asked if they had been away from home for more than 1 month in the past year, only about 12% of Roma answered yes. In comparison, 16% of the General Population, including one out of every five males, reported being away from their home for at least 1 month during the past year.

The majority of Roma participants in the study have been married (90%) and almost 77% of Roma live with their spouse. In contrast, 53% of the General Population sample were either not married or not living with a sex partner.

## 2. Alcohol and Drug Use

About 10% of the Roma population reported using alcohol every day (referring to the past 4 weeks), most often by males. Most of the participants (about 63%) drink alcohol less than once per week or not at all (Table 21). About one-fourth of respondents drink at least once a week. Drinking patterns were similar among the two study groups of Roma and the General Population.

Drug use among the Roma and the General Population seems to be low. Valium was the most common drug ever used among the Roma (almost 10%) and among the General

Population (almost 6%). About 6% of males in the General Population have also tried marijuana. Only 2.5% of the Roma have injected drugs in the past 12 months. Drug injection was not reported among the General Population.

**Table 21. Alcohol and Drug Use, by Population and Gender**

Characteristic	Roma Population			General Population		
	Male (n=309) %	Female (n=321) %	Total (n=630) %	Male (n=312) %	Female (n=317) %	Total (n=629) %
Frequency of alcohol use in past 4 weeks						
Every day	18.6	1.2	10.1	15.2	0.8	7.6
At least once a week	34.1	10.0	22.2	39.3	17.0	27.6
Less than once a week or never	46.4	81.6	63.7	45.1	80.4	63.6
Types of drugs ever used (include categories below, injected and non-injected)						
Heroin	2.1	0.4	1.2	0.7	0.0	0.3
Cocaine	1.2	0.4	0.8	3.4	0.3	1.7
Heroin and Cocaine	0.0	0.4	0.2	0.0	0.0	0.0
Marijuana	3.6	0.4	2.0	5.6	0.4	2.9
Petidine	1.0	0.5	0.7	0.6	0.0	0.3
Morphine	0.0	0.4	0.3	0.0	0.0	0.0
Tramadol	1.2	0.6	0.9	0.0	0.0	0.0
Valium	6.2	13.0	9.6	3.4	8.0	5.8
Injected drugs in past 12 months	2.4	2.6	2.5	0.0	0.0	0.0

Note: Data weighted according to probability of selection.

### 3. Sexual Behaviors and Condom Use

Almost 98% of the Roma and 88% of the General Population samples reported having had sexual intercourse (defined as vaginal or anal intercourse) (**Table 22**). The median age at first sex was 16 years for the Roma and 19 years for the General Population. The majority of Roma (about 88%) had sex before the age of 18, with 23% having first engaged in sex between the ages of 10 and 14 years. This early age of sexual initiation is more common among Roma females, of whom 35.5% first had sex between the ages of 10 and 14 years, compared with only 1.2% of females in the General Population. Regarding condom use, only 11.3% of Roma reported having used a condom, while 35.6% of the General Population reported having used a condom.

**Table 22. Sexual History: Condom Use, by Population and Gender**

Characteristics	Roma Population			General Population		
	Male (n=309) %	Female (n=321) %	Total (n=630) %	Male (n=312) %	Female (n=317) %	Total (n=629) %
Ever had sex	96.1	98.7	97.4	93.2	81.7	87.5
Median age at first sex	16	16	16	17	20	19
Mean age at first sex	16.87	15.9	16.37	18.9	20.50	19.29
Age at first sex:						
10-14	11.7	35.5	23.4	6.9	1.2	4.3

**Table 22. Sexual History: Condom Use, by Population and Gender**

Characteristics	Roma Population			General Population		
	Male (n=309) %	Female (n=321) %	Total (n=630) %	Male (n=312) %	Female (n=317) %	Total (n=629) %
15-18	74.3	54.1	64.4	62.5	30.4	47.7
Had sex in the past 12 months	97.3	87.8	92.6	89.9	89	89.4
Have ever used male condoms	12.7	10	11.3	46.9	27.7	35.6
Have had sex in past 12 months without condoms	77.4	82.1	79.7	40.3	64.8	51.5

Note: Data weighted according to probability of selection.

\* *Sexual intercourse* defined as vaginal or anal sex.

Almost 93% of the Roma population had been sexually active in the past 12 months (98% of males; 88% of females). The median number of sex partners reported by respondents during that time was one (the range is five). The majority of Roma engaged in sex without using a condom (almost 80%), while only half of the General Population did not use a condom. The following paragraphs present data on respondents' sexual risk behaviors with specific partners.

### Regular Sex Partners

Among the Roma, 98% reported having had sex with a regular sex partner (defined as a spouse or live-in sex partner) in the past 12 months, compared with 69.4% of the General Population. Condom use at last sex with regular partners is infrequent (5.9% for Roma and 12.9% for General Population) (**Table 23**). Across study groups, the most frequent reason given for not using condoms was "not liking condoms." More female than male respondents in both study groups reported that their partners objected to using condoms (14.2% among the Roma and 9.8% among the General Population). Of those who did use a condom, among Roma respondents 65.6% reported that they themselves had suggested using a condom, while among the General Population, 55.4% reported that using a condom was a joint decision.

**Table 23. Sexual History: Condom Use with Regular Partners**

Characteristic	Roma Population			General Population		
	Male (n=309) %	Female (n=321) %	Total (n=630) %	Male (n=312) %	Female (n=317) %	Total (n=629) %
<b>Sex with regular partners in past 12 months</b>						
Had sex with regular sex partner in past 12 months	94.7	99	96.7	59.2	81.5	69.4
Condom use at last sex with regular partners	5.1	6.9	5.9	15.3	10.8	12.9
Reasons for not using condoms at last sex with regular partner						
Not available	0.4	1.5	0.9	5.3	1.1	3.0
Too expensive	0.2	1.1	0.6	0.0	0.0	0.0
Partner objected	2.4	14.2	7.9	2.3	9.8	6.5
Don't like condoms	50.7	43.1	47.2	35.4	40.8	38.4

Note: Data weighted according to probability of selection.

## Commercial Sex Partners

Only 2% of the Roma population (and most of that 2% was male) had had a commercial sex partner during the previous 12 months. A commercial sex partner is defined as a partner with whom the respondent had sex in exchange for money. Out of the small percentage who did engage in commercial sex, slightly more than three-fourths used a condom at last sexual encounter, and more than 70% reported consistent condom use with commercial sex partners (Table 24).

**Table 24. Sexual History: Condom Use with Commercial Sex Partners**

Characteristic	Roma Population			General Population		
	Male (n=309) %	Female (n=321) %	Total (n=630) %	Male (n=312) %	Female (n=317) %	Total (n=629) %
Sex with commercial* partners in past 12 months	3.7	0.1	2 (n=9)	1.6	0.0	0.9 (n=6)
Condom use at last sex with commercial partners	75.8	100	76.5	57.1	0.0	57.1
Consistent (100%) condom use with commercial partner in past 12 months	75.8	0.0	73.5	57.1	0.0	57.1

\*Commercial sex partner refers to partner with whom respondent had sex in exchange for money or drugs or other compensation.

Note: Data weighted according to probability of selection.

## Non-Regular, Non-Commercial Sex Partners

Among the Roma, 10% (the majority of whom are male) had sex with a non-regular, non-commercial sex partner in the past 12 months (Table 25). The median number of non-commercial sex partners in the past 12 months is one, for both the Roma and the General Population groups. Condom use at last sex with a non-regular sex partner was 54.1% for the Roma and 45.2% for the General Population. The main reason given for not using a condom was “not liking condoms.” One-fifth of the General Population, however, reported that condoms were “not available” as a reason for not using them at last sex act.

**Table 25. Sexual History: Condom Use with Non-Regular, Non-Commercial Sex Partners**

Characteristic	Roma Population			General Population		
	Male (n=309) %	Female (n=321) %	Total (n=630) %	Male (n=312) %	Female (n=317) %	Total (n=629) %
Had sex with non-regular, non-commercial sex partner in past 12 months	17.1	1.6	10	57.3	19.6	0.9 (n=6)
Condom use at last sex with non-regular, non-commercial partners	53.5	61.5	54.1	52.2	21.1	57.1
Consistent (100%) condom use with non-regular, non-commercial partner in past 12 months	33.8	61.5	35.9	30.1	4.2	57.1

**Table 25. Sexual History: Condom Use with Non-Regular, Non-Commercial Sex Partners**

Characteristic	Roma Population			General Population		
	Male (n=309) %	Female (n=321) %	Total (n=630) %	Male (n=312) %	Female (n=317) %	Total (n=629) %
Forced Sex: Females who had partners who forced them to have sex even though they did not want to in the past 12 months	–	29.9	–	–	8.7	–

Note: Data weighted according to probability of selection.

### Forced Sex (Females)

Almost 30% of the Roma population females, compared with 8.7% of the General Population females, reported that a sexual partner had forced her to have sex when she did not want to in the past 12 months.

### Male Sex with Men

None of the Roma males, and only 1.4% of the General Population males, reported having a male sexual partner in the past 12 months (data not shown in table).

## 4. STI Knowledge and Symptoms

Only slightly more than half of the Roma population (55.3%) had heard of diseases that can be transmitted through sexual intercourse, in comparison with 97.6% of the General Population (**Table 26**). Females in both study groups were more aware of STI symptoms than were males, even with regard to male STI symptoms. The most frequently cited female symptoms were itching, genital discharge, and burning pain on urination. For male symptoms, painful urination was the most frequent response.

Self-reported STI symptoms were infrequent among the Roma, with only 9.4% reporting genital discharge and only 0.5% reporting genital ulcers or sores in the past 12 months. The majority of Roma respondents who reported STI symptoms were females. While the percent experiencing STI symptoms is small, about three-fourths of respondents with STI symptoms sought help at a hospital or clinic.

In regard to preventing the transmission of STIs, less than one-third of the Roma reported not having sex when they had symptoms, while 45% of the General Population reported not having sex when they had symptoms. Condom use while experiencing STI symptoms was only 5.5% among the Roma and 13% among the General Population.

**Table 26. Knowledge of STIs, by Population and Gender**

Characteristic	Roma Population			General Population		
	Male (n=309) %	Female (n=321) %	Total (n=630) %	Male (n=312) %	Female (n=317) %	Total (n=629) %
Has heard of STI	53.8	56.8	55.3	97.0	98.3	97.6
Knowledge of female STI symptoms*						
Abdominal pain	13.7	25.0	19.3	4.2	10.9	7.5
Genital discharge	8.9	27.7	18.3	9.7	22.7	16.2

**Table 26. Knowledge of STIs, by Population and Gender**

Characteristic	Roma Population			General Population		
	Male (n=309) %	Female (n=321) %	Total (n=630) %	Male (n=312) %	Female (n=317) %	Total (n=629) %
Foul-smelling discharge	4.2	12.7	8.4	8.9	22.1	15.5
Burning pain on urination	5.5	19.2	12.3	5.2	14.8	10.0
Genital ulcers/sores	3.0	3.1	3.1	6.6	13.8	10.2
Swelling in groin area	1.0	3.1	2.0	1.8	3.4	2.6
Itching	8.0	33.6	20.7	10.2	35.9	23.0
Pain during intercourse	6.5	7.7	7.1	5.4	11.1	8.2
Other	2.9	6.0	4.4	20.0	16.0	18.0
Knowledge of male STI symptoms*						
Genital discharge	10.1	5.4	7.8	9.6	11.5	10.5
Burning pain on urination	16.3	18.5	17.4	8.7	14.5	11.6
Genital ulcers/sores	6.1	6.5	6.3	9.7	11.5	10.6
Pain during intercourse	9.0	9.0	9.0	9.5	12.6	11.1
Swelling in groin area	1.9	1.5	1.7	3.6	4.2	3.9
Other	5.9	5.6	5.7	16.9	14.2	15.5

\*Among those who have heard of an STI (multiple responses allowed).

Note: Data weighted according to probability of selection.

## 5. Condom Knowledge

The majority of participants who had not used a condom in the past 12 months had heard of condoms (73.2% of the Roma and 89.6% of the General Population). In addition, 82.1% of the Roma and 91% of the General Population, regardless of past condom use, knew where to obtain a male condom. Both study populations knew they could get condoms at a pharmacy (95% of Roma and 98% of General Population), but only a minority of respondents (1.4% of Roma and 13% of General Population) knew that a condom could be obtained at a family planning center (Table 27).

**Table 27. Knowledge About Condoms, by Population and Gender**

Characteristic	Roma Population			General Population		
	Male (n=309) %	Female (n=321) %	Total (n=630) %	Male (n=312) %	Female (n=317) %	Total (n=629) %
Number of those who did not use a condom in past 12 months	233 77.4	250 82.1	483 79.7	108 40.3	152 64.8	260 51.5
Have ever heard of male condoms (among those who did not use a condom in past 12 months)	80.4	66.0	73.2	96.3	86.5	89.6
Knew where to obtain condoms (asked of all participants)	88.6	73.9	82.1	96.7	84.7	91.0
Store	5.5	5.1	5.3	2.2	1.9	2.1
Pharmacy	94.5	94.5	94.5	98.9	96.8	98.0
Market	0.8	0.0	0.5	2.3	3.6	2.9
Health clinic	0	5.1	2.1	5.2	10.2	7.4
Hospital	1.7	8.8	4.6	8.6	12.8	10.5

**Table 27. Knowledge About Condoms, by Population and Gender**

Characteristic	Roma Population			General Population		
	Male (n=309) %	Female (n=321) %	Total (n=630) %	Male (n=312) %	Female (n=317) %	Total (n=629) %
Family planning center	0.0	3.3	1.4	8.2	19.1	13.0
Friends	2.9	1.0	2.1	11.6	7.1	9.6
Takes less than 1 hour to get condoms	90.5	86.6	88.9	97.1	90.3	94.1

Note: Data weighted according to probability of selection.

## 6. HIV Knowledge

Among the Roma, 70% have heard about HIV (**Table 28**). One in every five Roma participants knew someone who is infected/has died from HIV/AIDS, and 18.5% reported having a close friend and/or relative who is infected/has died from HIV/AIDS. In comparison, over 95% of the General Population has heard of HIV, one in three know of someone who is infected/has died from HIV/AIDS, and 12.7% have a close friend and/or relative who is infected/has died.

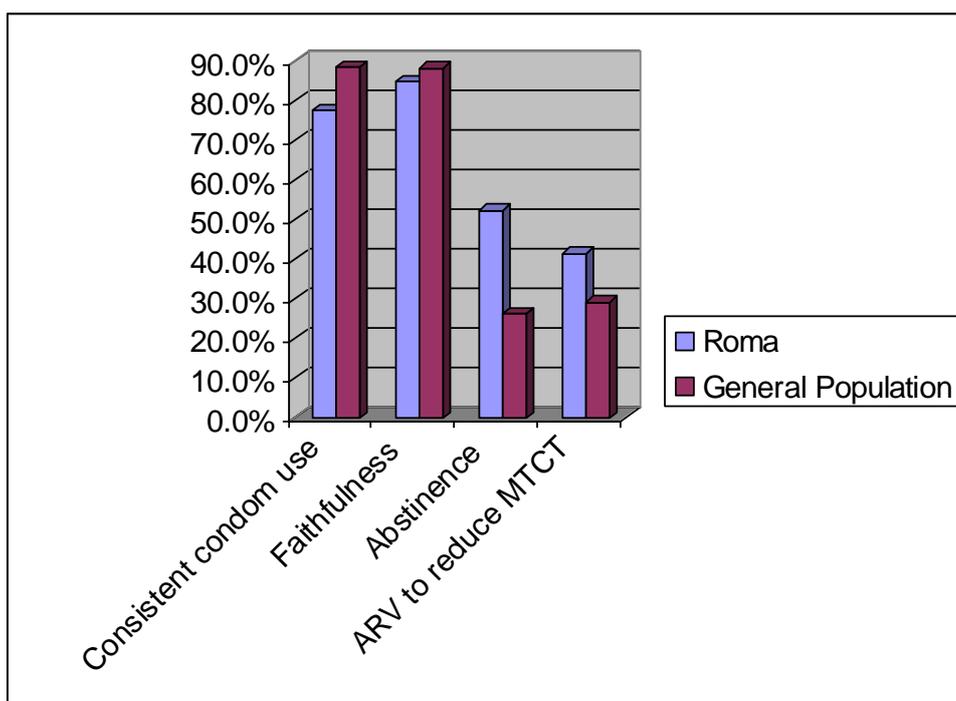
**Table 28. Knowledge of HIV/AIDS, by Population and Gender**

Characteristics	Roma Population			General Population		
	Male (n=309) %	Female (n=321) %	Total (n=630) %	Male (n=312) %	Female (n=317) %	Total (n=629) %
Has heard of HIV/AIDS	66.5	73.1	69.7	98.3	99.3	98.8
Knows someone infected with HIV or died of AIDS	25.5	14.8	20.0	31.9	34.1	33.0
Has close friend/relative with HIV or died of AIDS	16.1	22.0	18.5	18.6	7.0	12.7
<b>No incorrect beliefs about HIV transmission*</b>	3.4	2.2	2.8	22.4	24.6	23.5
Knows mosquito cannot transmit	17.1	12.2	14.6	36.4	35.9	36.1
Knows healthy looking person can be HIV-infected	63.3	64.5	64.0	80.3	87.6	83.9
Knows sharing meal with infected person cannot transmit	18.1	13.0	15.5	55.3	62.1	58.7

\*No incorrect beliefs about HIV transmission means knowing that one cannot get HIV from a mosquito bite or from sharing a meal with infected person, and that a healthy-looking person can be infected with HIV.

Note: Data weighted according to probability of selection.

More than three-fourths of the Roma population agreed that correct and consistent condom use and being faithful were two methods for preventing HIV transmission (**Figure 8**). Only half of the sample (52%), however, agreed that abstaining from sexual intercourse was protective. While 52% seems low, the weighted proportions revealed that even fewer General Population respondents (26%) viewed abstinence as a protective measure against HIV.



**Figure 8. HIV Prevention Knowledge**

In terms of mother-to-child transmission (MTCT), 67% of the Roma recognized that a woman can pass her HIV infection on to her unborn child. This percentage of 67% is low in comparison to the 93% of the General Population who knew about this mode of HIV transmission. About 59% of both study groups were aware that a woman could transmit HIV to her child through breastfeeding. Roma who knew about MTCT also knew that the risk of MTCT can be reduced by using ARV drugs (41.3% Roma versus 29.2% General Population). Regarding drug-related risks, 79% of Roma knew that injecting drugs with a used syringe can result in HIV infection, and 64% agreed that an IDU could protect him/herself from HIV infection by switching to non-injecting drugs.

Despite a general awareness of HIV prevention methods, there are many misconceptions about HIV among both the Roma and the General Population. For example, only about 15% of Roma believed that HIV is not transmitted through mosquito bites or by sharing a meal with someone who is living with HIV (**Table 29**). These percentages are much lower than those of the General Population (36% and 58%, respectively). Of particular importance is the fact that only 64% of the Roma believed that a healthy-looking person could be infected with HIV (84% among the General Population). Correct and incorrect response rates to knowledge questions were similar for males and females within each study group.

**Table 29. Misconceptions About Transmission Modes**

Characteristic	Roma Population			General Population		
	Male (n=309) %	Female (n=321) %	Total (n=630) %	Male (n=312) %	Female (n=317) %	Total (n=629) %
No incorrect beliefs about HIV transmission*	3.4	2.2	2.8	22.4	24.6	23.5
Knows mosquito cannot transmit	17.1	12.2	14.6	36.4	35.9	36.1

**Table 29. Misconceptions About Transmission Modes**

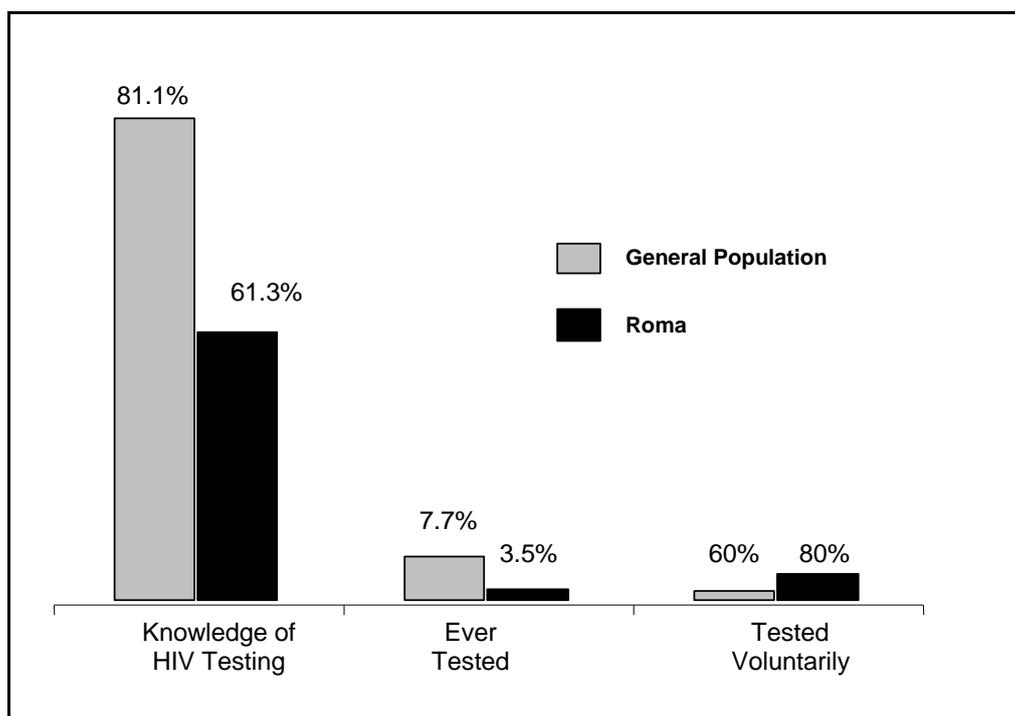
Characteristic	Roma Population			General Population		
	Male (n=309) %	Female (n=321) %	Total (n=630) %	Male (n=312) %	Female (n=317) %	Total (n=629) %
Knows healthy looking person can be HIV-infected	63.3	64.5	64.0	80.3	87.6	83.9
Knows sharing meal with infected person cannot transmit	18.1	13.0	15.5	55.3	62.1	58.7

\*No incorrect beliefs about HIV transmission means knowing that one cannot get HIV from a mosquito bite or from sharing a meal with an infected person, and that a healthy-looking person can be infected with HIV.

Note: Data weighted according to probability of selection.

## 7. HIV Testing Knowledge and Behaviors

During the Bio-BSS, HIV testing was not widely available in Tirana. Despite this reality, a relatively high percentage of respondents reported being aware that a confidential HIV test was available in Tirana, particularly among the General Population (61.1% Roma and 81.1% General Population) (Figure 9). While awareness was high, actual HIV testing was infrequent in both study groups, with Roma participants less likely to have been tested than their General Population counterparts (3.1% of Roma versus 7.7% of General Population). Among those who had been tested, 80% of the Roma reported that they had taken the test voluntarily, while 40% of the General Population reported that they had been required to take the test. (Reasons for required testing were not explored in the Bio-BSS survey questionnaire.) Almost all respondents who were tested, in both study groups, voluntarily learned their HIV test results. In addition, 53% of the Roma who had been tested and 22% of the General Population who had been tested had taken the test within the past year.



**Figure 9. HIV Testing**

## 8. Stigma and Discrimination

All indicators revealed high levels of stigma and discrimination associated with HIV/AIDS (Table 30). About 60% of Roma and 30% of the General Population reported that they would not take care of a relative living with HIV. About three-fourths of the Roma respondents believed that a teacher or student living with HIV should not be allowed to attend school, compared with only one-third of the General Population. Also, the majority of both study groups were not willing to buy food from an HIV-positive shopkeeper (92.6% of Roma and 72.2% of General Population).

**Table 30. Stigma and Discrimination, by Population and Gender**

Characteristic	Roma Population			General Population		
	Male (n=309) %	Female (n=321) %	Total (n=630) %	Male (n=312) %	Female (n=317) %	Total (n=629) %
Willingness to share a meal with HIV-positive person (No)	94.7	95.9	95.3	80.7	78.9	79.8
Willingness to care for HIV-positive male relative in household (No)	62.6	56.8	59.8	28.9	30.5	29.7
Willingness to care for HIV-positive female relative in household (No)	66.4	56.8	61.7	30.7	32.1	31.4
HIV-positive teacher should be allowed to continue teaching in school is she/he is not sick (No)	78.1	74.9	76.6	36.2	35.6	35.9
HIV-positive student should be allowed to continue attending school (No)	72.9	70.2	71.6	30.5	22.5	26.6
Willingness to buy food from HIV-positive shopkeeper or food seller (No)	96.4	88.5	92.6	70.1	71.3	72.2
Want to keep it secret if family member became HIV-infected (Yes)	65.4	50.8	58.2	70.4	68.0	69.2

Note: Data weighted according to probability of selection.

## 9. Biological Data

Biological prevalence rates of disease were relatively low among both the Roma and the General Population (Table 31); therefore, the biological data are presented without disaggregating the findings by sex. The weighted results found that 0.3% of the Roma population (n = 2) were living with HIV, while none of the General Population sample tested positive for the virus. Hepatitis B was found among 13.5% of the Roma, a rate more than twice the prevalence found among the General Population. Syphilis rates were also higher among the Roma (2.5%) than among the General Population (0.1%).

**Table 31. Disease Rate Among Roma and General Population**

Disease	Roma Population (n=630) %	General Population (n=629) %
HIV	0.3	0.0
Hepatitis B	13.5	5.6
Syphilis	2.5	0.1



## Discussion

Prevalence of biological infections among the Bio-BSS target populations—IDU, MSM, and Roma—was low. HIV was not detected among the IDU or the General Population; prevalence among the Roma was 0.3% and among MSM was estimated to be 0.8% (95% CI = 0.1–2.0%).

The estimated prevalence rate of syphilis was highest among the Roma (2.5%), indicating a potential risk for HIV transmission; lower rates were recorded among IDU (0.6%) and MSM (1.2%). Prevalence rates of hepatitis B were higher than the prevalence rate of syphilis in all the study groups. The prevalence rate of hepatitis B among the Roma (13.5%) was more than twice that of the General Population; IDU and MSM also had high rates of hepatitis B, 15% and 17.6%, respectively.

Most disturbing is the high rate of hepatitis C among IDU. It is estimated that one in every four IDU is infected with hepatitis C, indicating a potential pathway for HIV transmission. This high prevalence rate of hepatitis C and its treatment implications must be considered when designing and implementing HIV prevention and care programs for IDU.

The challenge in Albania is to keep HIV infection rates low. Across groups the Bio-BSS found that general knowledge regarding HIV/STI and condoms was high. More than 70% of participants in each study group had heard of HIV, and more than 82% agreed that consistent and correct condom use could prevent HIV infection. The majority of participants also were aware that a protective measure against HIV was to have only one partner and to know that he or she was not infected. Interestingly, however, fewer respondents agreed with the statement that people can protect themselves from HIV by abstaining from sexual intercourse (30% of IDU, 52.3% of Roma, 26% of General Population, and 68% of MSM). However, knowledge rarely translated into reported behaviors. For example, although 82% of respondents knew that consistent and correct condom use could prevent HIV infection (as noted above), consistent condom use with regular partners during the past year did not exceed 5% among IDU, Roma, and General Population respondents. In addition, only an estimated 18% of MSM consistently used condoms in the past year with commercial sex partners, and only an estimated 8% of IDU and 36% of Roma used condoms consistently with non-regular sex partners during the same period.

HIV testing is another area where knowledge is not indicative of behavior. More than 60% of respondents from each study group agreed that confidential HIV testing was available in Tirana. Few, except among the IDU, however, actually had taken an HIV test (3.5% Roma, 30.1% IDU, 10.7% MSM, 7.7% General Population).

Compounding these behaviors is an environment characterized by stigma and discrimination. The majority of participants from all study groups reported that they would not be willing to share a meal with a person living with HIV or be willing to buy food from an HIV-positive shopkeeper. Many respondents (range of 18% to 62% across groups) also expressed an unwillingness to care for an HIV-infected relative.

A more detailed discussion of the specific behavioral risks for each of the Bio-BSS target groups follows.

### Injecting Drug Users

The IDU network in Tirana is predominantly male. The lack of female IDU respondents may reflect their strong desire to remain hidden, their limited numbers, or poor recruiting of study

participants. It is possible that the study sample is biased, although the RDS methodology has been shown to statistically overcome such biases to draw a representative, probability-based sample. Currently, there are no other data on female IDU in Albania available, and the specific reasons that so few women enrolled in the Bio-BSS will remain unknown until further studies are conducted among this population.

The Tirana IDU population is young. RDS estimates indicate that half of the population is below the age of 24; one-third started injecting before the age of 18; and more than 90% have been injecting drugs for less than 5 years. Among the IDU population, 10% are illiterate and more than one-third have spent at least 1 month away from home in the past year. These sociodemographic characteristics must be taken into consideration when designing strategic HIV behavior change activities among IDU in Tirana.

In terms of IDU risk behaviors, in the past month, the majority of IDU injected at least twice per day, with heroin being the drug most frequently injected. Despite knowledge among IDU that using previously used needles can transmit HIV and that clean needles are available from pharmacies, half of IDU have shared needles and even more have shared drug-injecting equipment. Few IDU mentioned needle exchange programs as a source of new needles. None reported using bleach to sterilize shared needles; most reported relying on hot or cold water as cleaning agents. In addition, half of IDU have never received treatment or help for their addiction, and of those who have accessed treatment or help, one out of three were no longer receiving the assistance. These treatment findings demonstrate that the RDS methodology was effective in reaching IDU beyond those who attend healthcare and treatment centers. These findings also illustrate the need to develop HIV prevention strategies that can reach IDU outside of these traditional facilities.

In addition to risk behaviors associated with injecting, the IDU population also engages in risk behaviors associated with sexual practices. More than half of the sexually active IDU have had two or more partners in the past year. Partners were primarily regular or non-regular (non-commercial) partners, and consistent condom use was low, only 5.3% with regular partners and 8% with non-regular partners. While IDU are aware that infections are transmitted sexually, few were able to correctly describe STI symptoms.

These behavioral risks, coupled with high rates of hepatitis C, illustrate the vulnerability of IDU to HIV. While HIV prevalence is low, IDU injection and sexual behavioral risks warrant immediate attention. The National HIV/AIDS strategy in Albania has identified IDU as a vulnerable group and the results of the Bio-BSS provide critical information to inform strategies to reach this population with a comprehensive prevention and care program.

## **Men Who Have Sex with Men**

Similar to the IDU network, MSM are young, with half of the population below the age of 24. About one-third of MSM are mobile and drink alcohol, and the majority have tried drugs (mainly marijuana, cocaine, heroin, ecstasy, and valium). Among MSM, 8.5% have not attended school and 40% have ever been married to a female. These sociodemographic factors are vital for developing appropriate behavior change activities for this population.

In terms of risk behaviors, high percentages of MSM have injected drugs in the past year (mainly heroin) and have engaged in anal and oral sex with multiple partners in the past 6 months. Approximately 40% of MSM also reported having engaged in sex with male commercial partners, half of whom had two or more such partners. Despite these high-risk behaviors, and the fact that most MSM know they can obtain condoms at a pharmacy, consistent condom use was low (17% with commercial partners and 28% with non-

commercial partners). The most common reason given for not using condoms was they “did not like them.” In addition, few MSM reported using lubricants, and those that did use lubricants used oil-based lubricants (e.g., cooking oil, hand lotion, or butter).

In addition to risk behaviors with males, MSM respondents also reported having recent sex with females. In the 6 months preceding the Bio-BSS, the majority of MSM reported having sex with multiple female partners (70% of MSM who have had sex with females are estimated to have had two or more female partners). Only one in four MSM used condoms consistently with their female partners.

Overall, the combination of MSM risk factors—engaging in unprotected sex with males and females, and injecting drugs—makes it imperative that this group be targeted as part of any HIV prevention strategy in Albania. While HIV prevalence rates were low and hepatitis B rates relatively high, the Bio-BSS did not include information about acute STIs, which could provide more in-depth insight into the associations between behaviors and infections. Nonetheless, MSM are engaged in several risk behaviors with different populations, making them a possible link between drug-using populations and female populations in Tirana.

In addition, it is important to note that unprotected anal sex is one of the most risky behaviors for HIV/AIDS transmission. The risk of becoming infected with HIV is significant for both partners involved in unprotected anal sex, but the receptive partner has a much higher risk of becoming infected than the insertive partner. When developing a strategy to address the transmission of HIV, it is essential to take into account that men have sex with other men for a wide range of reasons and under very different circumstances. Because anal sex also takes place within heterosexual relations, it is essential to understand that what is risky is *having unprotected anal sex* rather than having sex with other men.

## Roma Population

Among the Roma population sample, one-third is younger than 24 years, more than one-third has never attended school, and 94% have been married. Two out of three female Roma married before the age of 16, and one in three had their first sexual experience between the ages of 10 and 14. These background characteristics indicate that HIV/STI vulnerability among female Roma may be enhanced by their early sexual initiation and not having been exposed to prevention programs that are provided through the school system.

Few Roma reported alcohol consumption, drug-injecting behaviors, or engaging in sex with commercial partners or non-regular partners, and 96.7% had sex with a regular partner (spouse or live-in sexual partner). Despite the fact that the majority of respondents know where to obtain condoms, only 2% use condoms consistently with a regular partner, but 36% use condoms with non-regular partners. The main reason given for not using condoms was that the respondents “did not like them.” Another characteristic among the Roma was that sex is not always voluntary, with 30% of females reporting that a partner forced them to have unwanted sex in the past 12 months. None of the Roma males reported having sex with another male.

HIV/STI knowledge among the Roma was frequently less than that in the General Population, except for a few indicators. For example, fewer Roma had heard about STIs when compared with the General Population. Among those who had heard of STIs, however, knowledge about symptoms was similar among the two groups. Also, many that confidential HIV testing was available in Tirana, but only 3.5 % had been tested.



## Limitations

Overall, the Bio-BSS data are representative only of the large metropolitan area of Tirana. Members of the study groups who live in other cities or in rural areas may have different HIV/STI infection rates and behavioral risk factors. In addition, the General Population study sites were not randomly selected and, therefore, the sample findings from this group are not generalizable to the larger population in Tirana. For this study, the General Population areas were selected on the basis of specific characteristics that matched those of the Roma sites, so that they could be used as comparison sites for the Roma data.

Another limitation of the Bio-BSS is the type of STI data collected. Syphilis and hepatitis B and C are chronic infections. While knowledge of the prevalence of these infections among the study groups is important, such knowledge does not make it possible to ascertain correlations between specific behaviors and the acquisition of an infection. Future Bio-BSSs in Albania should measure the prevalence of acute STI infections, such as gonorrhea and chlamydia, to explore the behavioral/biological associations more thoroughly.

In addition, the Survey Working Group did not have an opportunity to pre-test the study instruments and the flow of data collection. Pre-testing is critical to fine-tune the survey questionnaire as well as to ensure that the complexities of biological and behavioral data collection are thoroughly understood. Mapping inaccuracies also made sampling difficult in the Roma and General Population, where the number of homes in a selected block were often fewer than expected. When planning future Bio-BSS activities, the project protocol should ensure that there is sufficient time to conduct preparatory work.

Every research design has certain biases, and it is important to be aware of such limitations when interpreting the data and translating research findings into policy and programmatic approaches. Despite the main limitations described above, this Bio-BSS is groundbreaking, as it is the original second-generation HIV surveillance activity to take place in Albania. As such, these research findings provide the only systematically collected data regarding the risk behaviors and HIV/STI infection rates among three vulnerable populations in Albania. The main policy and program recommendations for HIV prevention among these vulnerable groups are discussed in the following section.



## Recommendations

One of the primary objectives of conducting the Bio-BSS in Tirana, Albania, was to provide baseline measurements of key behavioral and biological indicators so that it would be possible to conduct follow-up surveys and assess trends over time. As part of the planning process, the Survey Working Group makes the following recommendations for the next round of Bio-BSS in Albania.

### Future Behavioral and Biological Surveillance Studies

- Conduct another round of the Bio-BSS in 2007 among the same groups using the same methods, and adding to the groups commercial sex workers and other populations identified in the National AIDS strategy
- Measure acute STI infections, such as chlamydia and gonorrhea, and assess the correlations between risk behaviors and specific STI infections
- Build sufficient time and resources into the research plan to ensure that study materials can be thoroughly pre-tested
- Carry out more in-depth qualitative studies, by target group, to better understand the why's and how's of gaps in knowledge and understanding and behaviors
- Ensure that future Bio-BSSs cover broader geographic areas in Albania, not just Tirana

In terms of program planning, the three Bio-BSS target groups—IDU, MSM, and Roma—had been identified as vulnerable populations in the Albania National HIV/AIDS strategy that was adopted in 2004. The data collected and analyzed through the Bio-BSS process will inform the HIV prevention, treatment, and care activities that target these populations. Recommendations that cut across the study groups are listed below.

### General Recommendations Across Study Groups

- Develop youth-specific strategies, including provision of youth-friendly services in health clinics, in response to the fact that large proportions of the vulnerable populations are youth under the age of 24
- Target the General Population with messages that address the prevailing misconceptions surrounding HIV and the stigmatizing and discriminatory beliefs and behaviors
- Design information, education, and communication (IEC) campaigns that include low-literacy-level material to ensure they reach the portion of the population who have limited exposure to the formal educational system
- Implement specific IEC programs for HIV/AIDS and STIs for all groups

In addition to the cross-cutting recommendations listed above, the SWG makes the following recommendations for specific target groups.

## Recommendations by Population

### Injecting Drug Users

- Expand and provide additional support to harm-reduction interventions through NGOs, given that few IDU access drug treatment services and few IDU listed the Needle Exchange Program (NEP) as a source of clean needles
- Ensure harm-reduction programs include and further develop strategies for improving protective behaviors among IDU, such as teaching IDU needle-cleaning skills and promoting the use of bleach
- Needle access:
  - Explore further why IDU do not purchase new needles, despite knowing that they are available in pharmacies
  - Develop training and support material for staff who may interact with IDU
  - Increase financial and human resources for NEP to ensure comprehensive interventions and consistency, as it seems that the majority of IDU are currently unfamiliar with NEP services
- Promote treatment, given the fact that few IDU access or remain in treatment:
  - Expand services, improve access, and improve range
  - Develop and support rehabilitation programs/services that provide a comprehensive approach to treatment and care
  - Upgrade and improve the treatment skills, care skills, and attitudes of personnel working in IDU treatment settings
  - Emphasize, based on the high rate of hepatitis C among IDU, the urgent need for policy development, logistics arrangements, development of treatment protocols, and availability of drugs to ensure a standard of care

### Men Who Have Sex with Men

- Conduct qualitative studies to gain a more in-depth understanding of risk behaviors among MSM, especially in the context of the denial from society and stigma and discrimination
- Develop cross-cutting interventions, including harm-reduction and sexual behavior change, focusing on both heterosexual and homosexual behaviors
- Develop and launch condom-use and lubricant-use campaigns, aiming not only at availability and access, but also at consistent use for the three types of sex (oral, vaginal, and anal)
- Provide support for MSM organizations and groups in terms of capacity-building, public relations, and advocacy
- Design and implement interventions with healthcare providers, especially addressing stigma and discrimination, to ensure a standard of care for MSM

## Roma

- Develop out-of-school HIV-prevention interventions for Roma to reach young people who are not attending school
- Design HIV interventions that take into account that the Roma in Tirana are not as mobile as often perceived
- Develop and expand reproductive health services tailored to the specific needs of the Roma, especially to address reproductive health in the context of early sexual initiation
- Target gender issues and promote gender balance with interventions that empower women in regard to such issues as reproductive health, contraception, sexual health, and condom use
- Develop Roma-specific IEC services that are tailored to the Roma culture, such as producing materials in their own language, producing low-literacy material (pictorial), and developing other methods of outreach and communication
- Conduct campaigns and interventions to improve health-seeking behaviors by the Roma in regard to STIs and other reproductive health issues