

HIV risk and prevention behaviors among People Who Inject Drugs in seven cities of Georgia

Integrated Bio-Behavioral Surveillance Survey in seven cities of Georgia

Study Report

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Acronyms

AIDS	Acquired Immune Deficiency Syndrome
AOR	Adjusted Odds Ratio
ART	ART Antiretroviral therapy
BPU	Bemoni Public Union
CI	Confidence Interval
CIF	Curatio International Foundation
CNS	Central Neural System
EECA	EECA Eastern Europe and Central Asia region
ECUO	ECUO East Europe and Central Asia Union of People Living with
FSU	Former Soviet Union
FSW	Female Sex Worker
GAM	Global AIDS Monitoring
GARPR	Global AIDS Response Progress Report
GFATM	The Global Fund to fight AIDS, Tuberculosis and Malaria
HCT	HIV Counseling and Testing
HCV	Hepatitis C Virus
HIV	Human Immunodeficiency Virus
IBBS	Integrated Biological and Behavioral Surveillance Survey
IDP	Internally Displaced Person
IDU	Injecting Drug User
KP	Key Population
NCDCPH	National Center for Disease Control and Public Health
NGO	Non-Governmental Organization
OR	Odds Ratio
PLHIV	PLHIV People Living with HIV
PWID	People Who Inject Drugs
RDS	Respondent-Driven Sampling
RDS-A	Respondent Driven Sampling Analysis Tool RDS-Analyst
RDSAT	Respondent-Driven Sampling Analyses Tool
RODS	Rapid Opioid Dependence Screen
SHIP	STI/HIV Prevention
SPSS	Statistical Package for the Social Sciences

STI	Sexually Transmitted Infection
TPHA	Treponema Pallidum Hemagglutination Assay
UNAIDS	UNAIDS Joint United Nations Programme on HIV/AIDS
USAID	United States Agency for International Development
WHO	World Health Organization

Executive summary

Introduction

The estimated HIV prevalence in Georgia is 0.5% (0.4% - 0.6%) among the adult population (15 - 49 years of age). According to the latest spectrum estimates for 2016, 11,000 (8,700 – 14,000) people aged 15 years or more are living with HIV.

Injecting drug use was considered to be a leading route of HIV transmission in the early stages of the HIV epidemic in Georgia. Since 2012, however, heterosexual intercourse has become the major route of transmission (44% in 2012, 49% in 2013, 45.1% in 2014 and 44.4% in 2016). HIV infections acquired through injecting drug use accounted for 43.1%, which make it the second leading route of HIV transmission after heterosexual contacts.

HIV surveillance in Georgia has primarily focused on Key Population (KP) surveillance using Bio-Behavioral Surveillance IBBS among these groups.

The current study describes the most recent wave of IBBS surveys among PWIDs in seven cities Georgia in 2017 (IBBS surveys among PWID have been undertaken since 2002).

This study aims to:

- Measure HIV and HCV prevalence among PWID;
- Provide measurements of key HIV risk behaviors among PWID; and
- Generate evidence for advocacy and policy-making.

Methods

The study used a cross-sectional study design. A sample of 2050 injecting drug users aged 18 years or more were recruited using respondent-driven sampling (RDS) in seven major cities of Georgia: Tbilisi, Gori, Telavi, Zugdidi, Batumi, Kutaisi and Rustavi. Face-to-face interviews with participants were completed and blood samples were taken to evaluate risk-related behavior and to measure HIV prevalence among PWID in Georgia. Inclusion criteria for participation in the study included the following: being 18 years and older, injecting drugs in the month prior to the survey, being a resident of the selected city, and the ability to complete the interview.

Data analysis in Respondent-Driven Analysis Tool generated weighted population based estimates for each city. A combined sample from all seven cities was also analyzed in SPSS to derive estimates for the whole sample; in addition, bivariate and multivariate regressions of specific indicators were carried out.

Results

Socio-demographic characteristics

- There has been a gradual increase in the median age of PWID in all IBBS rounds since in 2009, which may be related to differences in the social segments reached by the study. Similar to the previous rounds, PWID generally have a low socio-economic status. The vast majority of participants reported being unemployed, and 51% of PWIDs mentioned having a monthly income of less than 300 GEL (125 USD).

- The median age of initiating non-injection drug consumption and injection drug use has not changed since 2012 and equals 15-16 years and 18-20 years, respectively.

Drug Scene and other contextual factors

- There have been some changes in non-injection drugs consumption since 2015. Overall, a higher proportion of PWID (82.2%) reported consumption of non-injection drugs in 2017 compared to the 2015 study. The difference in drug consumption between the age groups is less prominent in 2017 than in the 2015 study.
- A remarkable change has occurred in the structure of injecting drugs over the last years. Buprenorphine and Heroin (including so called “sirets”, which is left over from heroin production) are the leading injecting substance in the 2017 survey. Every second drug user injected subutex or suboxone during the month prior to the survey, which is almost twice as high compared to 2015. Heroin has slightly dropped from 58% in 2015 to 47% in 2017, while desomorphine (“krokodil”) and amphetamine type stimulants (Jeff, Vint) were reported by a lower proportion of PWID than in the previous study. Morphine use has remained at the same low levels since 2008. A new, home-made substance prepared from the herb ephedra emerged among misused substances in 2017, and was mentioned by one fifth of the problem drug users.
- There was diversity in drug use across the cities. In terms of the most commonly used drugs, heroin injection varied from 33.6% in Tbilisi to 66.2% in Rustavi, while buprenorphine injection ranged from 19.3% in Rustavi to 73% in Batumi. A higher proportion of Ephedra use was mentioned by Tbilisi PWID (40%) and in the cities in close proximity to Tbilisi (Gori and Rustavi).
- Injection in other countries has reduced across all survey locations since 2015. Overall, every third drug user experienced injection abroad in the year prior to the survey. The highest proportion was demonstrated among Batumi PWID, followed by Kutaisi; Tbilisi residents reported the lowest rate. Turkey remained the most frequently visited country for injection purposes. Similar to the 2015 findings, HIV risk behavior increases while abroad, as exhibited by the four-fold increase in rates of sharing injection equipment in other countries compared to Georgia.

HIV knowledge and HIV testing practice

- Knowledge of HIV/AIDS among PWID remained relatively good. The majority was aware of primary transmission risks associated with injection and sexual behavior. Misconceptions, however, still existed. About 17% still believed that meal sharing is associated with HIV transmission.
- There was an increase in the proportion of PWID who were tested during the previous 12 months and knew their results. This increase is observed across all cities. Overall, a higher proportion of PWID knew where to go to get an HIV test compared to the previous study (64.5% in 2017 vs. 52.3% in 2015). Gori and Zugdidi showed the highest rates, while Rustavi PWID demonstrated the poorest knowledge of the possibilities of confidential HIV testing in their city.

Drug use behavior

- The vast majority of respondents considered themselves to be drug addicts. One third of survey participants were opioid-dependent, as revealed by two different measurements including the Rapid Opioid Dependence Screen (RODS).
- The majority of PWID (62.3%) were members of a regular injecting group composed of about 4 people, similar to the findings of the previous studies. The frequency of drug injection (those who injected several times a week and more frequently) slightly increased from 25% in 2015 to 30% in 2017.
- The proportion of survey participants practicing safe injection at their last injection increased from 80.4% (2015) to 90.4% (2017). The lowest rate was observed in Zugdidi (88%). This indicator does not account for injecting with equipment previously used by drug user him/herself. The study revealed that this practice has also improved. The proportion of PWID who did not use already used injected equipment by themselves increased from 90.4% from 2015 to 94.5% in 2017. This improvement was observed in all locations with the exception of Zugdidi.
- There was a sharp reduction in sharing of injecting equipment and other paraphernalia (bottle, spoon, boiling pan/glass/container, cotton/filter or water) from 2009 to 2012. This reduction trend continued in 2017, and only a small proportion (from 0.1% to 1.6%) still shared paraphernalia across the cities.
- PWID who exhibited unsafe sharing practice in the previous month had significantly lower odds of being tested for HIV and being covered by harm reduction services compared to PWID with safe injection behavior in the previous month. In addition, frequent injectors (several times a week and more) were four times more likely to practice unsafe injection, as well as those who reported Efedra injection. Age and education did not show any correlation with the injection behavior, while knowledge on HIV transmission routes and other risk factors was associated with lower odds of unsafe injection.

Sexual behavior

- High-risk sexual behavior remains one of the problems among PWID. Condom use at last intercourse varies from 31.4% (Rustavi) to 43.7% (Telavi). A relatively small proportion of respondents in all cities reported using condoms with regular partners.
- Almost every second injecting drug user reported having occasional sexual partners, with a median number of three partners during the last 12 months. Condom use with such partners remained at the same level (60%) since 2015 and ranged from 55.7% (Telavi) to 62.5% (Zugdidi). Among those who did not use condoms, about half thought that it was not necessary.

Access to and coverage of treatment and harm reduction interventions

- Treatment services were not widely accessible to PWID, and the majority of PWID never accessed drug treatment facilities. Only 6.8% underwent any kind of treatment or were still under treatment that had not changed since the last round. In the majority of cases, drug users relied on self-help or the help of peers rather than on medical assistance.
- Minimal coverage with preventive programs increased from 24% in 2012 to 32.4% in 2015 and dropped to 23.3% in 2017. A statistically significant reduction was observed in Zugdidi and Rustavi, while in other cities the difference was not statistically significant. The reach of various preventive program elements such as injecting equipment, condom, informational

material or qualified information differed in the cities. Gori showed almost equal reach with all program components, while other cities show an uneven distribution, indicating that different packages are offered to program beneficiaries.

- Awareness of the syringe exchange program slightly improved, but still every second PWID was not aware about the needle and syringe exchange program. Tbilisi had the lowest rate of awareness across the cities.

HIV prevalence

- The combined dataset analysis showed that HIV prevalence among PWID is 2.3% (95% CI 1.63-3.12), with no change since 2015 when HIV prevalence was 2.2% (95% CI 1.53-2.99). The highest prevalence was reported in Batumi, similar to what was observed in 2015, while Zugdidi, which had the highest prevalence estimates in last two rounds, showed reduced rates. There is no statistically significant change in prevalence rates since 2015 across all cities. Rustavi has demonstrated the lowest rate of HIV prevalence since 2015.

Hepatitis C prevalence, testing and treatment

- The prevalence of anti HCV antibodies, which reflects lifetime exposure to HCV infection, remained high across all cities, and in particular in Tbilisi, Batumi, Kutaisi and Gori, where the prevalence ranges between 65%-75%. High HCV prevalence was found by all previous BBS studies.
- The study revealed that, out of the total PWID sample, 27% had never been tested for HCV mainly because they considered themselves to be at low risk for contracting infection. Another 22% self-reported to be HCV negative based on testing performed sometime during their lifetime. Out of these individuals, 36.7% were found to be HCV infected during the study.
- 72% of PWID who knew that they were HCV infected did not undertake any treatment. The reasons why included: being on the waiting list; treatment not being recommended by doctors; fear of potential side effects; and financial barriers associated with treatment.

Recommendations

The following recommendations are proposed to address the weaknesses and gaps revealed by the current IBBS study:

Increase the coverage and quality of preventive, treatment and harm reduction services for PWID.

The survey identified a substantial need to:

- Increase the coverage and frequency of HIV and HCV testing and counseling services through increasing the level of awareness among PWID and expanding field outreach activities;
- Increase the awareness of the needles and syringe exchange program;
- Increase the coverage and improve the quality of harm reduction services through delivering comprehensive and standardized interventions. Strengthen and expand peer education activities.

- Consider targeting young PWIDs. Design specific programs with a comprehensive package that includes the involvement of young peer educators.
- In preventive messages, re-emphasize the risks associated with injection practices abroad (sharing of injecting equipment with individuals from other network) and promote condom distribution, and re-emphasize the necessity of consistent condom use with any sex partner.
- Design and implement drug-specific interventions primarily for self-made drugs. Reemphasize the dangers associated with psychoactive drug consumption.
- Expand opioid substitution services to improve access for opioid dependent drug users.
- Increase the availability and affordability of rehabilitation and detoxification centers to PWID.
- Intensify preventive interventions in Batumi, Zugdidi, Rustavi, Kutaisi to reduce the grounds for further spread of infection.
- Introduce a competence-enhancement approach to drug abuse prevention in schools that has proved to be effective in behavior change among youth, in contrast to traditional antidrug education methods.
- Reduce financial access barriers related to HCV diagnostics and monitor tests to increase Hepatitis C treatment coverage and adherence to treatment.

Continue with surveillance

- The next IBBS among PWID using RDS should be carried out in these urban areas within next two-three years.
- Investigate the environmental risk and enabling factors that influence behavior and thus provide insight into HIV prevention.

Summary of main findings and core indicators

Table 1: Summary of core indicators – Georgia (all seven cities), Tbilisi, Batumi, Zugdidi

	GEORGIA		TBILISI		BATUMI		ZUGDIDI	
Key indicators	Sample estimates %	N	RDS-A population estimates, % (95% CI)	n/N	RDS_A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N
HIV testing during the last year								
Received HIV test last year and know their results	36.1	2050	33 (24.3-38)	121/370	44.5(31.9-57.4)	123/280	27.8(21.6-34.1)	84/280
≤ 24	11.3	97	19 (0-48.8)	2/11	50.5(0-102.2)	2/7	4.4(0-14.3)	1/8
≥ 25	37.3	1953	31.3 (24.4-38.2)	119/359	44.4(30.8-58.1)	121/273	28.3(21.6-35.1)	83/272
Infringement of the law due to drug use during last 12 months	12.4	2050	9.1(5.6-12.7)	36/ 370	10.5(5.3-15.7)	34/280	15.3(9.9-20.8)	44/280
≤ 24	12.4	97	4.3(0-12)	2/11	14.8(0-45.8)	1/7	0	0/8
≥ 25	12.4	1953	9.3(5.6-13)	34/359	10.3(5.2-15.4)	33/273	15.7(10.2-21.3)	44/272
Used sterile needle/syringe/ other injecting equipment at last injection								
Yes	91.6	2050	92.2(88.6-95.9)	337/370	97.8 (96.3-99.4)	269/280	86.3(81-91.7)	246/280
≤ 24	90.7	97	97.5(91.7-103.2)	10/11	100	7/7	100	8/8
≥ 25	91.6	1953	92 (88.7-95.5)	327/359	97.7(96.1-99.3)	262/273	86(80.7-91.3)	238/272
Safe injecting practice at last injection								

	GEORGIA		TBILISI		BATUMI		ZUGDIDI	
Key indicators	Sample estimates %	N	RDS-A population estimates, % (95% CI)	n/N	RDS_A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N
PWID with safe injection practice at last injection ¹	80.9	2050	83.5 (78.6-88.4)	306/370	88.1(83-93.2)	241/280	80.6(74.8-86.4)	224/280
≤ 24	74.2	97	97.1 (91.5-103)	9/11	100	7/7	100	8/8
≥ 25	81.3	1953	83.1 (78.1-88.2)	297/359	87.7 (82.4-92.9)	234/273	80.2(74.9-85.4)	216/272
Condom use at last intercourse								
Used condom at last intercourse	36.5	1831	34.7 (28.1-41.2)	111/335	35.4(26.5-44.4)	86/241	40.4(32.3-48.9)	94/254
≤ 24	68.8	96	41.5(3.8-78.8)	5/11	54.5(0-110.7)	5/7	82.1(51-112)	6/8
≥ 25	34.7	1735	34.5(28.2-40.8)	106/324	34.5(25.9-43.1)	81/234	39.3(31.2-47.4)	88/246
Regular sex partner last 12 months								
Used condom at last intercourse	25.8	1519	26.2(20.1-32.4)	71/287	28.8(20.8-37)	52/195	27.8(20-35.5)	48/203
≤ 24	52.1	64	9.6(0-34.8)	1/6	47.4(0-109.2)	3/5	66.7(10.0-120.1)	3/5
≥ 25	24.6	1455	26.6(20.3-32.8)	70/281	28(20-36.1)	49/190	27.1(19.1-35.3)	45/198
Occasional sex partner (s) last 12 months								
Used condom at last intercourse	60.0	884	60.9(50.1-71.7)	88/136	60 (48.3-71.9)	67/114	62.5(51.9-73.4)	83/138
≤ 24	74.6	71	78.7(46.1-115)	6/8	98.3(95.2-102.2)	4/5	93.6(80.9-107.1)	5/6
≥ 25	60.0	813	59.8(47.6-72)	82/128	58.1 (45.8-70.2)	63/109	61.3(50.3-72.5)	78/132
Paid sex partner(s) last 12 months								

¹ not usage of needle/syringe previously used by somebody else or him/herself, not usage of needle/syringe left at a place of gathering, not usage of syringe prefilled by somebody else without his presence, not usage of syringe filled from previously used syringe, not usage of possibly contaminated shared equipment (container, cotton, filter, water), not usage of drug solution from shared container prepared without his presence.

	GEORGIA		TBILISI		BATUMI		ZUGDIDI	
Key indicators	Sample estimates %	N	RDS-A population estimates, % (95% CI)	n/N	RDS_A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N
Used condom at last intercourse	86.2	419	97.7(93.4-102)	48/52	72.4(59.8-85)	42/55	85.8(72-99.7)	72/86
≤ 24	83.9	31	92.6(60.2-125.6)	3/4	100	1/1	91.3(69.4-115.6)	2/3
≥ 25	86.3	388	98(97.5-98.4)	45/48	71.5(58.7-84.1)	41/54	85.7(78.8-92.5)	70/83
HIV/AIDS awareness								
PWID correctly identifying ways of preventing and transmission of HIV (Answers 5 GAM indicator questions correctly) ²	43.0	2050	45.2(38.7-51.6)	162/370	52.2(37.7-66.7)	137/280	49.7(42.2-57.1)	136/280
≤ 24	33.0	97	35(0-71.5)	2/11	59.6(9-109.5)	2/7	56.9(26.8-89.2)	3/8
≥ 25	43.5	1953	45.5 (39-51.9)	160/359	51.9(38-66)	135/273	49.6(41.9-57.1)	133/272
PWID correctly identifying ways of prevention and transmission of HIV (Answers 7 national indicator questions correctly) ³	89.9	2050	88.2(84.3-92.2)	319/370	93 (89.1-96.3)	259/280	89.3(85.1-93.6)	249/280
≤ 24	88.7	97	100	11/11	91 (67.9-114)	6/7	100	8/8
≥ 25	89.9	1953	87.9(83.8-92)	308/359	93.1 (89-97.2)	253/273	89.1(84.6-93.5)	241/272
Kind of medical treatment and assistance taken last 12 months								

² One may protect oneself from HIV/AIDS by having one uninfected and reliable sexual partner; Can reduce the HIV risk if one properly uses condoms during every sexual contact; healthy looking person can be infected with HIV; no one can get HIV as a result of a mosquito's bite; no one can get HIV by taking food or drink with infected person .

³ One may protect oneself from HIV/AIDS by having one uninfected and reliable sexual partner; Can reduce the HIV risk if one properly uses condoms during every sexual contact; healthy looking person can be infected with HIV; one may be infected with HIV/AIDS by using a needle already used by someone else; one may be infected with HIV/AIDS by using bottle, spoon, boiling pan/glass, container, cotton/filter or water where might been touched needle already used by someone else; one may be infected with HIV/AIDS by taking solution from the shared container; drug users may protect themselves from HIV/AIDS by switching to non-injection drugs.

	GEORGIA		TBILISI		BATUMI		ZUGDIDI	
Key indicators	Sample estimates %	N	RDS-A population estimates, % (95% CI)	n/N	RDS_A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N
Apply to a medical facility to get a special treatment because he/she is a drug user during last 12 months	6.8	2050	10(6.2-14.1)	47/370	13(7-18.9)	30/280	2.9(0.7-5)	7/280
≤ 24	3.1	97	18.9(0-48.2)	2/11	43.1(0-99.4)	1/7	0	0/8
≥ 25	7.0	1953	9.8 (6-13.6)	45/359	11.7(6.6-16.7)	29/273	2.9(0.6-5.3)	7/272
Survived "extreme need" with somebody else's help last 12 months	6.1	2050	9.6(5.7-13.5)	46/370	10.4(5.5-15.3)	27/280	2.5(0.5-4.4)	5/280
≤ 24	2.1	97	19(0-46.9)	2/11	0	0/7	0	0/8
≥ 25	6.3	1953	9.3(5.7-13)	44/359	10.8(5.7-16.0)	27/273	2.5(0.4-4.7)	5/272
PWID reached with prevention programs								
Aware about HIV testing possibilities and received sterile injecting equipment and condom last 12 months	16.3	2050	12.7 (8.9-16.6)	58/370	14.2(7.8-20.5)	44/280	15.4(10.7-20.1)	48/280
≤ 24	10.3	97	1.8(0-6.1)	1/11	0.6(0-1.4)	1/7	7.6(0-19.9)	2/8
≥ 25	16.6	1953	13.1(9-17.1)	57/359	14.7(8.6-20.8)	43/273	15.6(10.5-20.6)	46/272
Program minimal coverage ⁴	23.3	2050	19.6 (14.5-24.7)	81/370	26.5(12.7-40.3)	72/280	22.3(17.2-27.5)	67/280
≤ 24	15.5	97	14 (0-38.3)	2/11	11.1(0-39.3)	2/7	7.5(0-29.7)	2/8
≥ 25	23.7	1953	19.8(14.8-24.6)	79/359	27.1(12.9-41.2)	70/273	22.7(17.1-28.3)	65/272
Program full coverage ⁵	13.3	2050	9.7 (6.3-13.2)	45/370	9.2(4.3-14)	32/280	14.1(9.5-18.7)	43/280

⁴ Aware about HIV testing possibilities and received sterile injecting equipment **or** condom **or** brochures/ pamphlets/ booklet **or** qualified educational information last 12 months

⁵ Aware about HIV testing possibilities **and** received sterile injecting equipment **and** condom and brochures/ pamphlets/ booklet **and** qualified educational information last 12 months

	GEORGIA		TBILISI		BATUMI		ZUGDIDI	
Key indicators	Sample estimates %	N	RDS-A population estimates, % (95% CI)	n/N	RDS_A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N
≤ 24	9.3	97	1.7(0-5.3)	1/11	0.7(0-2.1)	1/7	7.8(0-19.5)	2/8
≥ 25	13.5	1953	10(6.3-13.7)	44/359	9.5(4.3-14.7)	31/273	14.3(9.4-19.2)	41/272
Received sterile injecting equipment last 12 months	26.8	2050	29.9(23.8-35.8)	119/370	18.3(11-25.6)	54/280	27.2(21.1-33.3)	78/280
≤ 24	35.1	97	6.9(0-19)	3/11	26(0-63.4)	3/7	8(0-19.1)	2/8
≥ 25	26.4	1953	30.6(24.7-36.2)	116/359	18(11-25)	51/273	27.7(21-34.3)	76/272
Received condoms last 12 months	24.2	2050	25.7(19.9-31.5)	101/370	16.4(9.8-22.9)	51/280	25.7(19.5-32)	73/280
≤ 24	33.0	97	6.8(0-20)	2/11	24.6(0-63)	3/7	7.7(0-22)	2/8
≥ 25	23.8	1953	26.2(21-31.4)	99/359	16.1(9.7-22.4)	48/273	26.1(19.6-32.7)	71/272
Received brochures/ pamphlets/ booklet on HIV/AIDS last 12 months	27.3	2050	27.3(22-32.6)	109/370	17.8(7-28.7)	61/280	27.7(21.4-33.9)	79/280
≤ 24	38.1	97	19.4(0-46.7)	4/11	26.2(0-66.3)	3/7	7.8(0-20.4)	2/8
≥ 25	26.8	1953	227.5(21.9-33.2)	105/359	17.4 (5.8-29)	58/273	28.1(22.1-34.1)	77/272
Received qualified information on HIV/AIDS last 12 months	24.4	2050	26(20.4-31.4)	103/370	20.8(7.5-34)	58/280	23.7(17.8-29.7)	71/280
≤ 24	30.9	97	7(0-19)	3/11	0.7(0-2.2)	1/7	7.4(0-20.2)	2/8
≥ 25	24.1	1953	26.4(21.1-31.8)	100/359	21.6(8.2-35)	57/273	24.1(17.8-30.4)	69/272
HIV infection								
HIV prevalence	2.3	2050	1.2(0.1-2.3)	5/370	5.1(0-15.4)	13/280	1.8(0-3.5)	4/280
≤ 24	2.1	97	0(0-0)	0/11	0	0/7	0	0/8
≥ 25	2.3	1953	1.2(0.06-2.4)	5/359	5.3(0-15.7)	13/273	1.8(0-3.8)	4/272
HCV								
HCV prevalence	63.2	2049	74.1(68.2-80)	282/370	74.5(61.1-88.1)	207/280	51(43.7-58.4)	139/280
≤ 24	3.1	96	1.7(0-5.9)	1/11	0	0/7	18.7(0-48.5)	2/8
≥ 25	66.2	1953	76.2(70.2-82.2)	281/359	77.7(64.7-90.6)	207/273	51.9(44.6-59)	137/272

Table 1: (Continued) Summary of core indicators – Gori, Telavi, Kutaisi, Rustavi

	GORI		TELAVI		KUTAISI		RUSTAVI	
Key indicators	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N
HIV testing during the last year								
Received HIV test last year and know their results	56.5(48.3-64.6)	163/280	27.6(21.7-33.4)	86/280	36.3(28.1-44.5)	105/280	19.6(13.3-25.9)	58/280
≤ 24	10.4(0-24.0)	2/16	0	0	60.8(6.9-112)	4/5	0	0
≥ 25	60(54-68.1)	161/264	30(23.8-36.2)	86/255	35.8(28.4-43.3)	101/275	21.5(14.2-28.9)	58/255
Infringement of the law due to drug use during last 12 months	10.3 (6.1-14.5)	29/280	11.2(6.9-15.4)	36/280	10.7(7-14.4)	38/280	10.2(6.5-13.8)	38/280
≤ 24	5.7(0-13.4)	1/16	3.3(0.1-6.6)	3/25	19.5(0-59.3)	1/5	14.7(1.6-28.1)	4/25
≥ 25	10.7(6.7-15.7)	28/264	11.9 (7-16.8)	33/255	10.5(6.8-14.3)	37/275	9.7(5.7-13.6)	34/255
Used sterile needle/syringe/ other injecting equipment at last injection								
Yes	96.3 (94.3-98.4)	261/280	92.3(89.4-95.3)	254/280	95.3(92.5-98.1)	266/280	89.2 (85.5-92.9)	244/280
≤ 24	100	16/16	86.9(72.7-101.2)	22/25	100	5/5	82.2(64.7-99.6)	20/25
≥ 25	96.1(94-98.2)	245/264	92.8(89.7-95.9)	232/255	95.2(92.4-98.1)	261/275	90(86.1-93.8)	224/255
Safe injecting practice at last injection								
PWID with safe injection practice at last injection ¹	84.3 (79.2-89.4)	232/280	79.4(73.8-84.9)	217/280	85.6(81.3-90.2)	234/280	75.6 (69.4-81.8)	205/280
≤ 24	90 (77.9-101.4)	13/16	74.5(54.9-94.1)	18/25	100	5/5	49.8(27-72.3)	12/25
≥ 25	83.8(78.2-89.4)	219/264	79.8(74.5-85.2)	199/255	85.5(80.7-90.3)	229/275	78.2(72.6-83.8)	193/255
Condom use at last intercourse								

	GORI		TELAVI		KUTAISI		RUSTAVI	
Key indicators	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N
Used condom at last intercourse	43.2(35.3-51.1)	107/253	43.7(35.9-51.2)	98/237	37.1(30-44.3)	86/247	34.1(27.4-40.8)	86/264
≤ 24	73(51.7-94.8)	12/16	78.4(60.7-95.7)	20/25	71.1(31.2-113.6)	3/5	68.3(42.2-94.3)	15/24
≥ 25	40.4(32.7-48)	95/237	39.9(32.2-47.8)	78/212	36.4(29.9-44.7)	83/242	30.7(23.6-37.7)	71/240
Regular sex partner last 12 months								
Used condom at last intercourse	32.7(24.2-41.6)	65/215	29.1(21-37.4)	58/193	27.4(20.4-34.4)	52/208	24.3(17.7-31)	46/218
≤ 24	63.8(35.3-92.8)	6/10	43.9(16.2-72.1)	12/19	64.2(1.6-115.1)	2/5	60.3(23.6-96.9)	7/14
≥ 25	30.3(22.1-38.5)	59/205	27.7(19.7-35.8)	46/174	26.3(18.8-33.8)	50/203	22(15.2-28.7)	39/204
Occasional sex partner (s) last 12 months								
Used condom at last intercourse	61(50.6-71.5)	79/124	58.2(46.9-69.4)	71/117	59.7(48.1-71.4)	73/122	55.7(42-69.6)	69/132
≤ 24	92.3(78.4-106.6)	10/11	54.2(25.3-83.2)	13/19	40.4(0-108.3)	2/3	69(39-99.2)	13/19
≥ 25	56.6(45.7-67.2)	69/113	58.8(47.4-70.1)	58/98	60.4(48.6-72.3)	71/119	53.5(40.9-66.4)	56/113
Paid sex partner(s) last 12 months								
Used condom at last intercourse	86(80-91.4)	43/47	90.9(82.6-99.1)	54/60	92.5(91.7-95.8)	45/48	85.1(80.1-90.4)	57/71
≤ 24	100	2/2	100	12/12	100	1/1	58.5(19.7-96.9)	5/8
≥ 25	84.6(76.4-91.9)	41/45	88.3(78.1-98.5)	42/48	92.4(90.0-94.8)	44/47	88.2(82.2-94.5)	52/63
HIV/AIDS awareness								
PWID correctly identifying ways of prevention and transmission of HIV infection (Answers 5 GAM indicator questions correctly) ²	61(54.1-68.7)	141/280	32.6(26.5-38.7)	93/280	46.8(40-53.4)	121/280	32.1(25.4-38.9)	91/280

	GORI		TELAVI		KUTAISI		RUSTAVI	
Key indicators	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N
≤ 24	63.6(42.4-85.1)	10/16	32.7(11.7-53.8)	8/25	33.2(0-78.7)	2/5	24.7(8-41.4)	5/25
≥ 25	60.8(54.5-68.3)	131/264	32.6(26.2-39)	85/255	47.1(40-54.1)	119/275	32.9(25.9-39.8)	86/255
PWID correctly identifying ways of prevention and transmission of HIV infection (Answers 7 national indicator questions correctly) ³	95.7(93.2-98.3)	261/280	89.6(84.7-94.4)	247/280	95.2(93.8-97.2)	260/280	88.4 (84.1-92.7)	247/280
≤ 24	88.7(70.2-106.5)	15/16	73.7(52.8-93.4)	18/25	100	5/5	93.7(85.9 -101.4)	23/25
≥ 25	96.3(94.4-98.3)	246/264	91(86.9-95.2)	229/255	95(92.3-97.2)	255/275	87.9(83.1-92.5)	224/255
Kind of medical treatment and assistance taken last 12 months								
Apply to a medical facility to get a special treatment because he/she is a drug user during last 12 months	0	0	0	0	0	0	0	0
≤ 24	0	0	0	0	0	0	0	0
≥ 25	7.9(3.7-12.1)	18/264	5(1.8-8.2)	14/255	5.2(2.5-7.8)	16/275	2.8(0.7-4.9)	8/255
Survived "extreme need" with somebody else's help last 12 months	6.4(2.6-10.1)	15/280	4.6(1.4-7.8)	14/280	4.3(1.8-6.9)	12/280	2.2(0.4-4.1)	6/280
≤ 24	0	0/16	0	0/25	0	0/5	0	0/25
≥ 25	6.9(2.9-11)	15/264	5(1.5-8.5)	14/255	4.4(1.7-7.1)	12/275	2.4(0.3-4.5)	6/255
PWID reached with prevention programs								
Aware about HIV testing possibilities and received sterile injecting	21.1(15.5-26.7)	66/280	15(10.3-19.7)	50/280	10.7(6.8-15.2)	38/280	11.3(6.6-16)	31/280

	GORI		TELAVI		KUTAISI		RUSTAVI	
Key indicators	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N
equipment and condom last 12 months								
≤ 24	9.8(0.4-18.9)	3/16	1.3(0.7-3.4)	1/25	46.4(0-97.4)	2/5	0	0
≥ 25	22.1(16.2-28)	63/264	16.2(11.4-21.1)	49/255	11.6(7.5-14.2)	36/275	12.4(7.4-17.4)	31/255
Program minimal coverage ⁴	27.8(21.5-34)	86/280	20.4(14.9-25.9)	65/280	20.2(14-26.5)	64/280	13.9(8.9-18.9)	43/280
≤ 24	25.2(5.5-45.2)	5/16	1.3(0.8-3.6)	1/25	47.9(0-95.2)	2/5	1.3(0-3.8)	1/25
≥ 25	27.9(21.6-34.4)	81/264	22.1(16.6-27.5)	64/255	20.6(14.1-25.4)	62/275	15.1(9.7-20.6)	42/255
Program full coverage ⁵	18.5(13.1-23.9)	57/280	11.7(7.8-15.6)	41/280	9.3(5-13.2)	27/280	10.1(5.6-14.6)	28/280
≤ 24	9.5(0-19.8)	3/16	1.3(0.7-3.3)	1/25	25.1(0-71.3)	1/5	0	0
≥ 25	19.3(13.1-25.5)	54/264	12.6(8.3-17.7)	40/155	8.6(4.9-12.5)	26/275	11.1(6.2-16)	28/255
Received sterile injecting equipment last 12 months	26.5(20.4-32.7)	83/280	20(14.6-25.5)	64/280	19.4(14.4-25.1)	61/280	33(26.4-39.6)	91/280
≤ 24	30.3(10-50.2)	6/16	19.7(2.4-36.4)	5/25	45.8(0-94.1)	2/5	48.6(27.7-69.8)	13/25
≥ 25	26.2(19.3-33.1)	77/264	20.1(14.2-26.1)	59/255	19.5(13.3-24.5)	59/277	31.4(24.6-38.3)	78/255
Received condoms last 12 months	26.4(20.2-32.6)	79/280	16.9(11.9-21.9)	56/280	15.1(10.1-19.3)	48/280	32.2(26-38.5)	89/280
≤ 24	22.4(4.4-41.1)	5/16	14.2(0.3-28.4)	4/25	45.6(0-98)	2/5	54.5(35-74)	14/25
≥ 25	26.8(20.5-33)	74/264	17.1(12.2-22.1)	52/255	14.3(9.6-19.1)	46/275	30.1(23.2-36.9)	75/255
Received brochures/ pamphlets/ booklet on HIV/AIDS last 12 months	29.4(22.8-35.9)	89/280	18.4(13.3-23.4)	60/280	19.5(14-25.9)	63/280	34.3(27.6-40.9)	99/280
≤ 24	37.9(16.5-59.5)	7/16	16.4(0.7-33.3)	4/25	25.1(0-65.6)	1/5	60.2(41.6-78.8)	16/25
≥ 25	28.7(21.9-35.3)	82/264	18.5(12.9-24.2)	56/255	19.4(14.4-25.2)	62/275	31.7(24.7-38.7)	83/255
Received qualified information on HIV/AIDS last 12 months	25.7(19.4-31.9)	79/280	17.2(12.2-22.2)	53/280	17.1(11.4-23.2)	45/280	32.7(26.1-39.3)	92/280

	GORI		TELAVI		KUTAISI		RUSTAVI	
Key indicators	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N
≤ 24	22.3(4.6-39.7)	5/16	16(0.9-32.5)	3/25	26.8(0-72.9)	1/5	56.6(37.7-75.5)	15/25
≥ 25	25.9(19.5-32.3)	74/264	17.3(11.7-22.9)	50/255	17.9(11.1-23.6)	44/275	30.4(23.7-37.1)	77/255
HIV infection								
HIV prevalence	3.4(0.8-5.9)	8/280	2(0.1-3.8)	6/280	3.3(1.2-6.1)	9/280	0.9(0-2.1)	2/280
≤ 24	0	0/16	1.9(0.4-4.3)	2/25	0	0/5	0	0/25
≥ 25	3.7(0.9-6.4)	8/264	2(0.1-3.9)	4/255	3.4(0.2-6)	9/275	1(0-2.4)	2/255
HCV								
HCV prevalence	66(58.8-73.3)	188/279	49(40.7-56.3)	139/280	65.2(58.5-72.4)	190/280	50.2(42-58.3)	150/280
≤ 24	0	0	0	0	0	0	0	0
≥ 25	71.1(64.7-77.6)	188/264	53.4(46-61.9)	139/255	66.1(59.6-73.3)	190/275	55(47.3-62.9)	150/255

Introduction

Background

Between 2000 and 2016, HIV incidence decreased by 16%, and HIV-related deaths fell by one third globally due to antiretroviral therapy (ART). Despite the fact that ART contributed to a 48% decline in deaths from AIDS related causes in 2016 (UNAIDS, 2017), HIV continues to be a major global public health issue, associated with more than 35 million deaths so far. In 2016, 36.7 million people were living with HIV, among whom 1.8 million people became newly infected with HIV and 1.0 million people died from HIV-related causes worldwide (UNAIDS, 2016).

Decreasing trends of HIV incidence and AIDS related deaths have been observed globally, except in the Eastern Europe and Central Asia (EECA) region, where the 6th millennium development goal was not achieved (ECUO, 2017). The annual number of deaths due to AIDS-related causes increased by 25% - from an estimated 32 000 [27 000–37 000] in 2010 to 40 000 [32 000–49 000] in 2016. There are large gaps along the 90-90-90 continuum in the region: only 63% of people living with HIV in EECA region were aware about their status in 2016. Almost half (45%) of that group were receiving ART, and among those who were on treatment 77% were virally suppressed. When comparing EECA 90-90-90 scorecards to Georgia's estimates, HIV knowledge awareness is 21% lower among all people living with HIV in Georgia compared to the average estimates for EECA region (UNAIDS, 2017).

Table 2 90-90-90 scorecards in 2016

	First 90	Second 90	Third 90
	Knowledge of status among all people living with HIV	Percentage of people living with HIV who know their status who are on treatment	Percentage of people living with HIV on treatment who are virally suppressed
Eastern Europe and Central Asia	63%	45%	77%
Georgia	42%	74%	88%

Key populations are at increased risk of HIV irrespective of geographic location, epidemic type or local context. They often face legal and social challenges related to their behavior that increase their vulnerability to HIV and reduce access to testing and treatment programs (WHO, 2017).

The estimated HIV prevalence in Georgia is 0.5% (0.4% - 0.6%) among adult population (15 - 49 years of age). According to the latest spectrum estimates 11,000 (8,700 – 14,000) people aged 15 year and up are living with HIV (PLHIV) (UNAIDS, country factsheet, 2016). Since HIV reporting began in Georgia in 1989, in total 6,564 cases were reported to the national HIV surveillance system by September 18, 2017. In total 3,562 persons have developed AIDS and 1,308 have died (AIDS center, 2017). The estimates suggest that about 42% of PLHIV are unaware of their infection. The majority (74.5%) of people diagnosed with HIV are men. Injecting drug use was considered to be a leading route of HIV transmission in the early stages of the HIV epidemic in Georgia. But since 2012, heterosexual contacts became the major route of transmission (44% in 2012, 49% in 2013, 45.1% in 2014 and 44.4% in 2016). HIV infections acquired through injecting drug use accounted

for 43.1% (second leading route after heterosexual contacts of HIV transmission). The number of newly diagnosed HIV cases shows an upward trend, with more than 700 cases per year (AIDS center, 2017).

HIV surveillance in Georgia has primarily focused on Key Population (KP) surveillance using Integrated Bio-Behavioral Surveillance (IBBS) among these groups. IBBS surveys among PWID have been undertaken since 2002 in Georgia. The latest IBBS study, which was conducted in seven cities of Georgia in 2015, suggests that HIV prevalence among this KP equaled 2.2% (95% CI 1.53-2.99). Across the cities, HIV prevalence varied from the lowest 0.9% (95% CI, 0%-4.3%) to the highest 4.8% (95% CI, 0.2%-11%) (CIF, 2015).

Research objectives

The current study describes the most recent wave of IBBS surveys among PWID in Georgia. This study aims to:

- Measure HIV and HCV prevalence among PWID;
- Provide measurements of key HIV risk behaviors among PWID; and
- Generate evidence for advocacy and policy-making.

Methods

Study Design

The study used a cross-sectional study design. A sample of 2050 injecting drug users 18 years and older were recruited using respondent-driven sampling (RDS) in seven major cities of Georgia: Tbilisi, Gori, Telavi, Zugdidi, Batumi, Kutaisi and Rustavi. Face-to-face interviews with participants were completed and blood samples were taken to evaluate risk-related behavior and to measure HIV prevalence among PWID in Georgia. Inclusion criteria for participation in the study included the following: being 18 years and older, injecting drugs in the month prior to the survey, being a resident of the selected city, and the ability to complete the interview. The fieldwork started in November 2016 and ended up in May 2017. The study employed a Respondent-Driven Sampling (RDS) methodology to recruit survey respondents. As injecting drug users are a hard-to-reach population and are not visible at venues, RDS is considered to be the best sampling method.

Respondent-Driven Sampling

There have been various sampling methods tested and used worldwide to recruit key populations at high risk of HIV, including PWID, over the last two decades. As suggested by scientific literature, RDS is the method with the greatest potential to recruit study participants in as close to a representative sample as possible. RDS is designed for situations where a sampling frame is not available. Unlike snowball sampling, RDS uses a mathematical model to weight the data collected in order to get a representative sample (Salganic et al., 2004).

RDS is initiated by a set of non-randomly selected study participants – so called “seeds” – who refer their peers to participate in the study. These peers refer their peers as well, and the process continues until the sample size is achieved. RDS is based on the premise that peers are better than outreach workers and researchers at locating and recruiting other members of a hidden population. It differs from traditional snowball sampling in the following respects: 1) the subjects are asked to recruit their peers into the study recruitment quotas (e.g. three recruits only); 2) there

is a dual incentive system – a reward for being interviewed and a reward for recruiting others into the study.

In this study, a diverse group of seeds (heterogeneous in age, gender, injection group affiliation and area of residence in a given location) were identified by the partner organization, Bemoni Public Union (BPU), which is a trusted and well-respected organization with extensive experience in working with the target population. Following an eligibility assessment and the provision of informed consent, the seeds underwent the behavioral (interviewing) and biological (blood withdrawal) components of the study. After completion, they were given three uniquely coded, non-replicable coupons to recruit three additional peers to participate in the study. Seeds were instructed in how to refer other eligible PWID. Each coupon was printed with a serial number, study location, and information about the monetary incentive. Those who came to the study site with a recruitment coupon and met the inclusion criteria were interviewed. These participants, in turn, received three coupons to recruit their peers to the study. Each participant was offered a financial incentive of 20 GEL (8.4 USD) and an additional incentive of 7 GEL (2.9 USD) for each eligible person they recruited. The level of monetary incentives was not regarded as high.

The coupons were numbered to allow the researchers to link the recruiter with their recruits, and this information was recorded in a coupon management spreadsheet. The data on the coupons given to participants were managed by an MS Excel based software specifically developed for coupon tracking. To ensure that participants met the eligibility criteria, a verification procedure was followed in all study sites. The verification procedure was conducted by an experienced addictionologist; it included a preliminary informal discussion regarding street names of drugs and prices, familiarity with drug preparation and injection techniques and a visual inspection for recent track marks. Eligible respondents were assigned unique identification numbers. To avoid subject duplication, other physical characteristics such as height, weight, scars, tattoos and some biometric measures were noted.

Using RDS makes it possible to collect additional information about a participant's network size. This information is very important because it provides the basis of the weighting that is used. All eligible study participants were asked six questions about the network size, specifically:

1. How many PWID do you know in your (city/region)?
2. Among those, how many do you know personally (you know them by name and they know yours)?
3. How many of those are above 18 years?
4. How many of those have injected drugs during last month?
5. How many of those have you seen during last 1 month?
6. How many of those (who are above 18 years, are PWID, have injected drugs during last 1 month) would you consider to recruit for the study?

Respondents who returned to receive incentive for recruitment were additionally asked about whether anyone refused to accept coupons and their characteristics. Coupon rejection forms were used to record this data.

Sample Size

The sample size for each city was calculated using key behavior indicators, such as safe injection at last injection from the 2015 IBBS. A confidence level of 95%, precision of 11% for Tbilisi and 13-14% for other cities, power of 90% and design effect of 2.0 were used to calculate the sample sizes for each city. A higher than 2.0 design effect is recommended for RDS studies to account for a

sampling method that is not a traditional random sampling (Johnston et al., 2013); however, this resulted in increased sample sizes that were not feasible from a programmatic perspective. The sample sizes were rounded and resulted in 370 for Tbilisi and 280 in other six cities.

Table 3 shows the final sample sizes achieved in this study for the target population in different locations, as suggested by the calculations.

Table 3: PWID sample sizes by cities

Area	Sample size (including seeds)
Tbilisi	370
Gori	280
Telavi	280
Zugdidi	280
Batumi	280
Kutaisi	280
Rustavi	280

Prior to the survey, formative research was conducted and qualitative data from that survey was attained in order to identify seeds, their network sizes and amount of incentives.

Study Subject Criteria

Eligibility Criteria:

Inclusion criteria for participation in the study include the following:

- Age 18 years or older;
- Drug injection in the month prior to participation in the survey;
- Resident of a selected urban area including nearby village;
- Ability to understand and communicate in Georgian; and
- Had a valid coupon (with exception of the seeds).

Exclusionary Criteria:

- Unable to provide informed consent to take part in the study;
- Under the influence of alcohol;
- A duplicate recruit that has already participated in the study; and
- Does not have a valid coupon.

Recruitment results for PWID

The recruitment started with non-randomly selected seeds in each of the seven cities. They were classified with different characteristics to provide a representative sample of PWID. The seeds were carefully selected with demographic profiles that represent socially and geographically diverse injection networks of PWID in all seven survey sites. For the basic demographic characteristics of the seeds, see Table 4 below:

Table 4: Basic demographic characteristics of the seeds

	Tbilisi	Gori	Telavi	Zugdidi	Batumi	Kutaisi	Rustavi
Age groups							
18-24	0	0	0	1	0	0	0
25-30	0	1	0	1	0	0	1
31-40	1	2	0	0	1	2	2

	Tbilisi	Gori	Telavi	Zugdidi	Batumi	Kutaisi	Rustavi
41+	5	2	6	3	4	3	3
Gender							
Male	5	5	6	5	5	4	6
Female	1	0	0	0	0	1	0
Level of Education completed							
Secondary or vocational school	1	5	1	1	2	2	5
Incomplete Higher	1	0	0	1	0	0	0
Higher	4	0	5	3	3	3	1
Marital status							
Married	5	4	4	1	2	3	1
Divorced/ Separated	1	0	1	1	2	1	3
Never been married	0	1	1	3	1	1	2
Total	6	5	6	5	5	5	6

The recruitment process occurred more rapidly than expected and the desired sample size was achieved quickly. Coupons were distributed until the sample size reached just under the desired level. The number of waves accomplished by all seeds varied from 8 (the shortest, in Batumi) to 10 (the longest, in Tbilisi and Gori) in all survey sites.

The verification procedure revealed a number of non-eligible participants for the survey who had a strong desire to participate in this study. Only one refusal was recorded in Zugdidi among those who showed up at the survey site and refused to participate.

Table 5: Recruitment information

Area	Max number of waves	Total number of released coupons	Returned coupons	Eligible PWIDs recruited by seeds (no of seeds)	Ineligible potential participants	Refusals
Tbilisi	10	1020	377	364 (6)	7	
Gori	10	786	285	275 (5)	5	
Telavi	9	780	284	274 (6)	4	
Zugdidi	9	738	283	275 (5)	3	1
Batumi	8	771	286	275 (5)	6	
Kutaisi	9	756	286	275 (5)	6	
Rustavi	9	789	288	274 (6)	8	

Study Instrument and Measurements

We utilized a standardized IBBS questionnaire for PWID in accordance with the Family Health International Guidelines for Repeated Behavioral Surveys in Populations at Risk for HIV, with slight modifications for the purposes of this study (UNHCR, GLIA, WB, 2008). In 2010, the study instrument for IBBS among key populations at risk for HIV was tailored and standardized with expert participation to assess the needs of this key population in Georgia. At that time, the methodology was updated by adjusting the list of main and composite indicators with their passports, standardized tools, and data analysis tables (CIF, 2010). Prior to initiating the field work the questionnaire was once again reviewed. Questions were added/revised in accordance with the population size estimation module to be conducted in conjunction with the IBBS study. To estimate opioid dependence, a Rapid Opioid Dependence Screen (RODS) 8-item questionnaire was added (Wickersham et al., 2015). In addition, a separate section on Hepatitis C testing, knowledge and

treatment patterns was added to the main instrument. All changes to the instrument were discussed and agreed with the key stakeholders.

To align with the latest changes in the instrument, the electronic version of the questionnaire developed in Microsoft Access 2010 was updated and pretested.

Interviewers were selected from BPU as they had previous experience in similar studies and appropriate skills to communicate with the target population. The questionnaire was implemented through structured face-to-face interviews with trained interviewers. A refresher training was provided to the interviewers prior to field implementation.

The biomarker component involved the analysis of blood specimens for HIV and HCV at the Infectious Diseases, AIDS & Clinical Immunology Research Center. Commercially available diagnostic kits Genscreen Ultra HIV Ag-Ab (BIO-RAD, France) test system was used for HIV screening. HIV positive samples were tested with a Western Blot (Western Blot HIV Blot 2.2, MP Diagnostics) confirmatory test. Monolisa Anti-HCV PLUS Version 2 (BIO-RAD, France) test system was used to test blood samples on HCV.

Data were collected on the following characteristics: socio-demographic patterns, duration of injecting drug use and substance abuse, sharing of injecting equipment with each other, the number and types of sexual partners and contacts, the use of condoms, health seeking behavior, HIV and AIDS knowledge and testing, and exposure to HIV interventions.

Ethical Issues

The study protocol and questionnaires were approved by the Ethical Committee of the HIV/AIDS Patients Support Foundation (certificate 881/982 of 11.11.2016). During the study design and field implementation, the following ethical issues were taken into consideration:

- Participation in the survey was strictly voluntary. Participants were free to withdraw at any time and were informed that refusal or withdrawal would not affect services they would normally receive.
- Complete anonymity was ensured. No names or personal identifiers were recorded; all documentation was labeled with a study number.
- The staff members engaged in the study were trained in discussing sensitive issues and protecting participants' confidentiality and human rights.

Study respondents identified as positive for HIV/HCV were offered counseling services and referred to designated facility for further diagnostic and treatment.

Quality control

Study personnel (the interviewers from BPU) were retrained in how to use the electronic version of the study questionnaire by representatives of CIF prior to fieldwork. In this training exercise, each question was reviewed and every possible answer discussed. Further quality control was implemented during the fieldwork, which consisted of internal quality control provided by BPU staff and external control provided by CIF staff. CIF staff members visited every city where surveys were conducted and attended randomly selected interviews. At the end of the day, important details seen during the interview by members of CIF were discussed with the interviewers and fieldwork supervisor and relevant feedback was provided.

Data Management and Analysis

The data collection period in all seven cities took place from November 2016 to May 2017. In each city, the field process did not take more than 3 weeks. Interviews were held at fixed sites located in the center of each city. Study sites where the interviews took place belonged either to BPU (Tbilisi, Telavi), a local harm reduction service center (Rustavi, Gori), or NGO Tanadgoma (Kutaisi, Zugdidi, Batumi), where HIV preventive services to high-risk population of HIV are provided.

Face-to-face interviewer-administered interviews were conducted using an electronic version of the study questionnaire in Georgian by trained interviewers. Each interview lasted on average 30 minutes. A small number of hard copies of the questionnaire were printed out in case of technical issues with the electronic module. A small number of RDS paper-based forms were filled in, including the Network Size, Recruiter, and Coupon Rejection forms. After the completion of the behavioral component, each respondent was asked to provide a blood sample for the biomarker component of the study. Following the informed consent form and agreement on the HIV testing, pre-test counseling was provided. A blood sample was then taken by a trained nurse.

Blood samples were transported to the AIDC center laboratory in Tbilisi with comprehensive cold chain management for the packaging, labeling, storage and distribution of temperature sensitive products. If transportation was not done the same day, the samples were centrifuged and sera refrigerated between 4 and 8°C. Each study participant that volunteered to provide a blood specimen was given an identification number, which was recorded on the blood tube and the questionnaire. The identification number allows for the preservation of participant anonymity. In addition, the participant was given a card with the identification number and with the organization's telephone number and address. The testing results were reported back to the study site within two weeks. Participants were asked to return with their identification card to receive their results. They were notified that test results would not be given via the telephone. Post-test counseling was provided on site. Data entry and analysis took place at the CIF office. Data was exported from the Microsoft Access program into Excel and then into SPSS (version 18.0). Any discrepancies were resolved by examining frequencies and cross-tabulations and by checking the logic of all variables in the datasets. Flash drives with the completed questionnaires were kept at the CIF office.

Respondent Driven Sampling Analysis Tool RDS-Analyst (RDS-A), version 0.42 (Mark et al., 2014) was used for analysis of the RDS population estimates. Frequencies, cross-tabulations and prevalence estimates were performed in RDS-A. In cases where confidence interval limits went below 0% or above 100%, they were set to 0% or 100%. For some variables in which RDS-A was unable to produce valid population estimates, analysis was done in SPSS. Similarly, means and medians were calculated by SPSS, as RDSAT does not produce such estimates. In addition, a combined sample of all seven cities was analyzed in SPSS and frequencies were calculated for all indicators. For specific indicators, bivariate and multivariate analysis was performed to find out associations between exposure and outcome. Statistically significant associations (95% confidence intervals not crossing the value 1.00) were presented. The comparison of selected indicators was done using 2009, 2012, 2014-2015 and 2017 datasets. RDS-A makes it possible to estimate characteristics of a broader network of PWID, based on network data collected from the study sample. In our results tables (see annex 1), the data are presented in two columns: the left column presents population estimates of a larger PWID network in a given location with 95% confidence intervals; the right column presents the actual proportion of the sample. Frequencies calculated in SPSS are marked with an asterisk. Network structures and recruitment patterns were analyzed by using a network visualization program called NetDraw 2.158.

Results

This section presents the findings of 2017 IBBS survey in the following subsections: Socio-demographic characteristics; Drug Use History; Drug Use Risk Behavior; Knowledge of HIV/AIDS and Hepatitis C, Testing Practice and Self-Risk Assessment; Sexual Behavior; Exposure to Drug and HIV Prevention Programs and Social Influence; Recruitment Pattern by Risk Injection; HIV and HCV prevalence. Detailed characteristics of PWID and their behavioral data can be found in the Annex files (please see Annex 1 & 2).

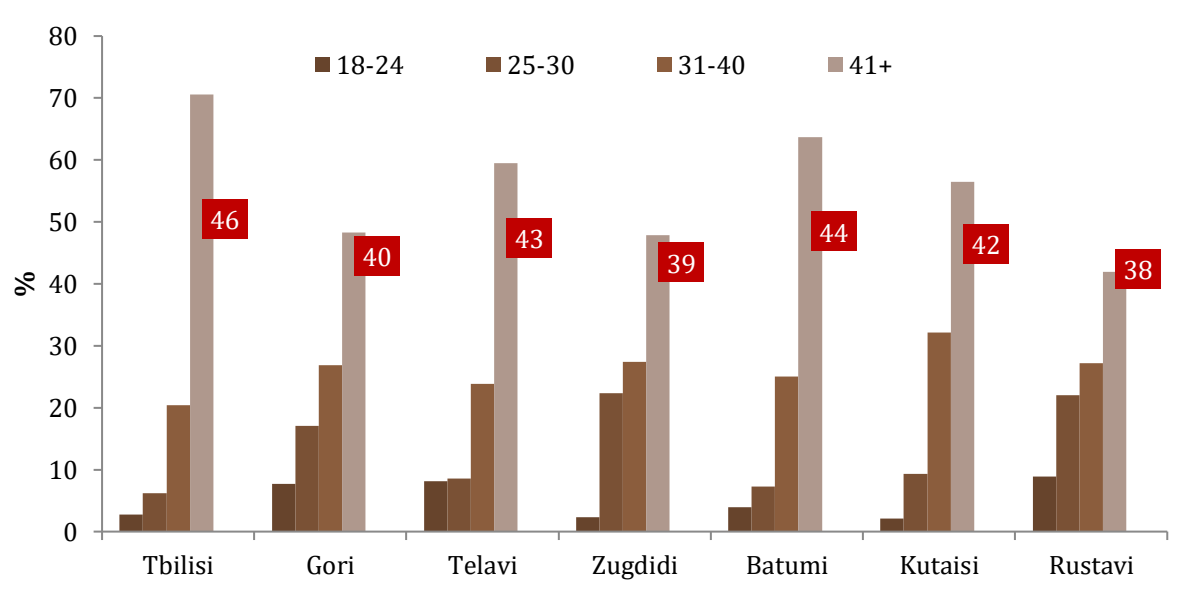
The respondents were questioned about previous involvement in the IBBS studies. 63.1% of the total sample had not participated in any of the IBBS rounds, while 25.1% had been involved at least once. Gori respondents had the lowest proportion of PWID not involved in the IBBS (51.3%).

Socio-Demographic Characteristics

Age Distribution

This survey showed that the median age of PWID varied between 38-46 across all survey locations, with the highest proportion of respondents in the 41+ age group. Respondents between the ages of 18 and 24 accounted for the lowest proportion compared to the other age groups. The proportion of respondents in this age group ranged from 2.1% (the lowest level in Kutaisi) to 8.9% (the highest proportion in Rustavi) across all seven cities.

Figure 1: Distribution of PWIDs by age groups and median age



Gender

More than 98% of respondents represented male PWID across all seven survey sites. Of all 2050 PWID, only 39 were females (1.9% of all survey participants). Among female PWID, the majority (8 participants) were recruited in Rustavi and Batumi. The lowest number of females (2 participants) was present in the Telavi sample.

Disproportional gender representation could be explained by poor recruitment of female PWID due to poor male/female interaction in the network. Female PWID may also be a more hidden population compared to males.

Education

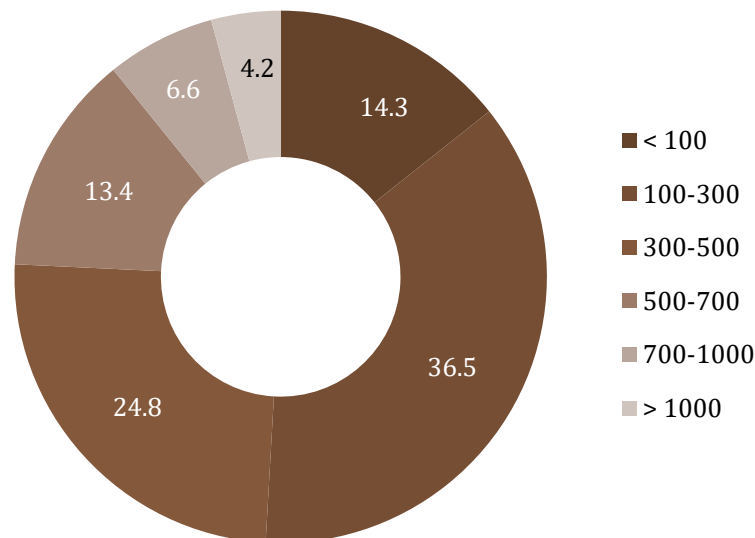
The Tbilisi sample had the largest proportion of respondents with higher education (53.8%), followed by Telavi and Kutaisi, where this group represented 37.9% and 30.9% of the sample, respectively. In all survey sites (except Tbilisi), the majority of respondents reported having secondary or vocational education; the lowest proportion was in Telavi (57.3%), while the highest was in Rustavi (71.3%).

Employment and Income

The vast majority of study participants were unemployed, ranging from 62.4% in Telavi to 76.8% in Tbilisi. Out of the entire sample (2050 participants), 211 PWID reported having a permanent job, with the lowest proportion of 6.5% and the highest of 16.1% in Rustavi and Telavi, respectively. The highest proportion of students was found in Rustavi (2.4%).

The majority of participants mentioned having an average monthly income of 100-300 GEL across all seven survey sites (36.5%). Every fourth respondent has an income of 300-500 GEL, while the same proportion has a monthly income higher than 500 GEL (24.2%) in the combined sample. 14.3% had income of less than 100 GEL out of 2050 participants.

Figure 2: Monthly income in GEL (combined sample)



Marital Status

The proportion of PWID who were married varied from 39.6% (in Zugdidi) to 51.5% (in Batumi) across the survey locations. Divorced PWID accounted for the highest proportion in Tbilisi (27.8%). The highest proportion of PWID (42.2%) who reported that they had never been married was in Zugdidi. Almost half of the PWID were living with their spouse, with the exception of Zugdidi and Rustavi where the majority of study participants (46.7% and 43.8%) mentioned that they live with their relatives/parents. The proportion of PWID who lived with a partner other than their spouse did not exceed 1.3% across all seven cities.

Contact with Criminal Justice Settings

The study revealed that the proportion of PWID imprisoned because of their drug use in the past 12 months was highest in Zugdidi (15.3%). The highest proportion of participants detained under administrative sentences was also in Zugdidi (11.8%). No more than 7.9% (Zugdidi) of PWID were

imprisoned before trial because of drug consumption. The proportion of PWID who were imprisoned ranged from 0.7% (Rustavi) to 2% (Zugdidi) throughout the seven cities.

Alcohol Consumption

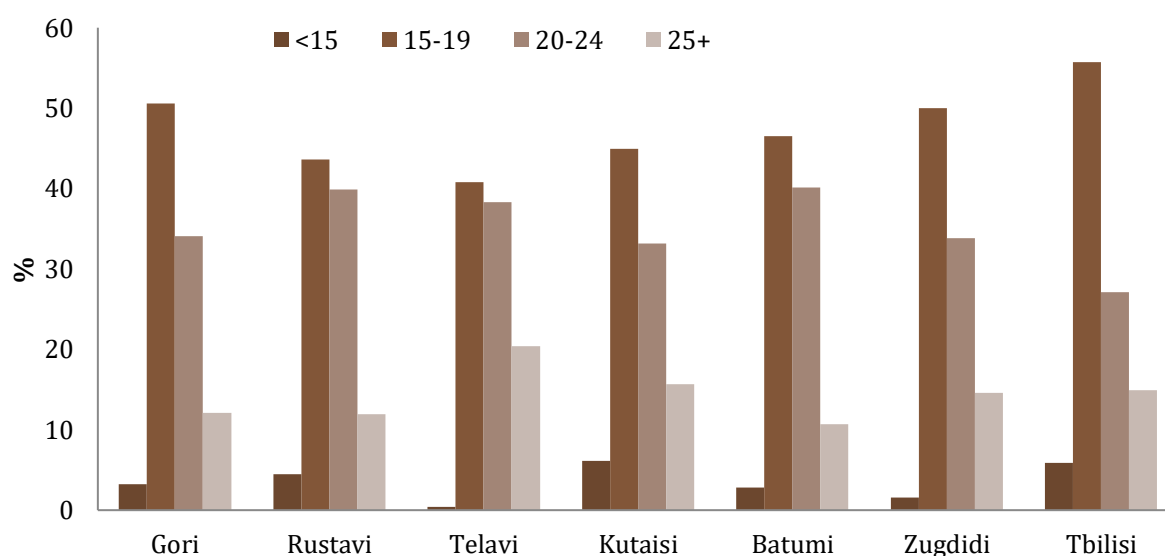
Daily alcohol consumption was reported among less than 2.4% of participants across all cities, with the highest proportion in Rustavi (3.2%). The proportion of PWID who mentioned alcohol consumption once a week varied from 9.5% (Tbilisi) to 14.9% (Telavi). Around one third of participants (31.1%) reported that they had never consumed alcohol during the last month.

Drug Use History

The study revealed that, on average, any type of drug use (swallowing, smoking and/or injecting) starts in the teen years. In all survey locations, the majority of survey participants (58.3% - 73.2%) reported using drugs (non-injection drug use) for the first time between the age of 15-19. The median age for starting drug use is 16 years for the national and city-level estimations, except in Telavi, where the median age for first time drug use is 17. A quarter of study participants in Rustavi reported starting drug use under the age of 15, which is higher than other survey sites.

The median age when participants report first injecting drugs ranged from 19 to 20. As Figure 3 shows, the majority of participants mentioned injecting drug first time in their lives between 15-19 years of age (variance ranges between 40.8% in Telavi and 55.7% in Tbilisi).

Figure 3: Age when first injected drugs



The proportion of PWID who considered themselves drug addicts varied from 86.7% in Rustavi to 92.5% in Kutaisi and Batumi. Table 6 indicates that the median years of drug addiction varied between 14.5 (in Rustavi) and 20 years (in Batumi and Tbilisi, separately).

Table 6: Prevalence and median years of drug addiction

City	Thinks that is drug addicted (%)	Median years of drug addiction
Rustavi	86.7	14.5
Telavi	87.9	18
Zugdidi	88.9	17
Gori	90.4	17
Tbilisi	92.0	20
Kutaisi	92.5	19
Batumi	92.5	20

The frequency of injection over the last month varied in different survey locations. PWID living in Tbilisi and Kutaisi had the largest proportion of those who reported injecting drugs several times a day (2.7% in Tbilisi and 2.6% in Kutaisi). The majority of PWID (ranging from 49.9% in Kutaisi to 67.3% in Tbilisi) were members of a regular injecting group composed of 3-4 people. The mean number of people in the regular group varied from 3.36 in Tbilisi to 4.25 in Telavi.

The study showed that various types of drugs had been consumed and/or injected by PWID during the month preceding the survey. In the combined sample, it was found that 82.8% (1698) had consumed drugs by a non-injection route of consumption during the previous month. Drugs from Hallucinogens and CNS depressants group were reported as the most popular drugs for non-injection. Hallucinogens (mainly, cannabis) were reported among 80.4% of those who had taken drugs by a non-injecting route. CNS depressants like Baclophen,⁶ Gabapentin,⁷ Pregabalin⁸ and others were consumed by 55% of this subsample. Table 7 below presents the distribution of the most frequently consumed CNS depressants by different survey locations. About one fifth of non-injection drug users mentioned consumption of new psychoactive drugs known with the names “bio cannabis”⁹, “crystal” or “bath salt”.¹⁰

Table 7: CNS depressants consumption (among those who reported any type of drug consumption N=1,698)

City	Baclophen	Gabapentin	Pregabalin
Tbilisi	7.2	37.5	9.1
Gori	4.1	32.7	6.3
Telavi	34.8	36.9	3.9
Zugdidi	4.8	40.1	19
Batumi	41	34.4	5.1
Kutaisi	15.2	12.1	7
Rustavi	4.5	28.5	3.5
Georgia*	17.3	34.6	8

*unweighted data

As for injected drugs, buprenorphine (Subutex, Suboxon) was reportedly the most commonly used drug during the last month, followed by heroin. The other most commonly used injected drug

⁶ Baclophen – Miorelaxant, used in the management of severe muscle spasticity

⁷ Gabapentin – Anti-epileptic, anticonvulsant normothymic drug

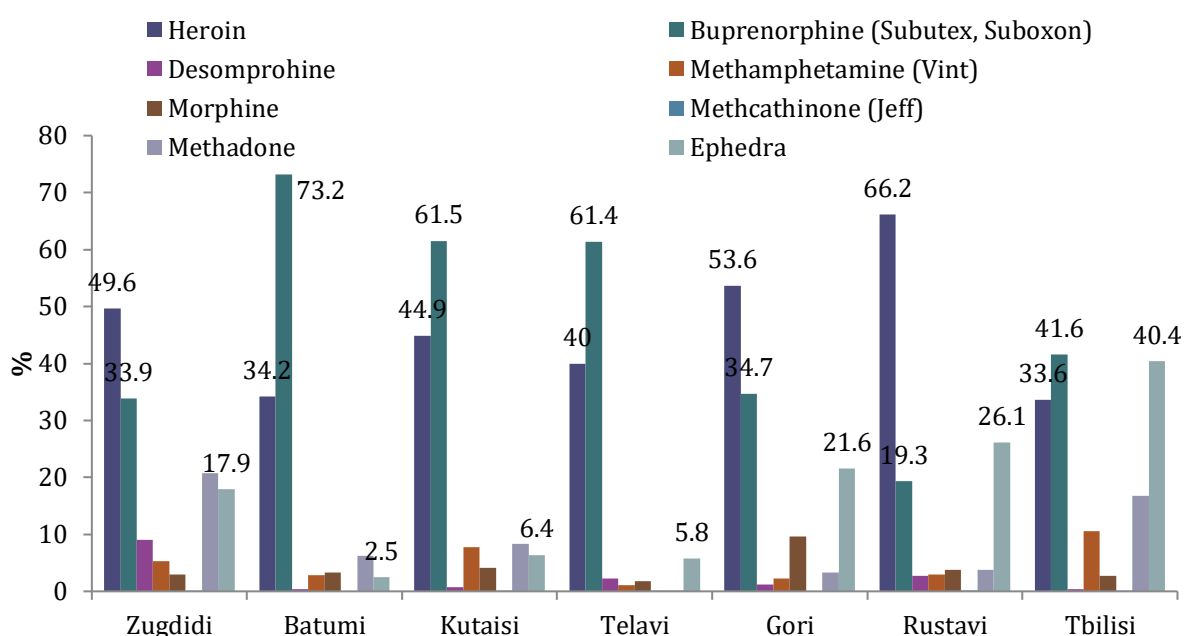
⁸ Pregabalin – Anti-epileptic, anticonvulsant drug

⁹ Synthetic cannabinoids that are usually smoked by users

¹⁰ Synthetic cathinones – an amphetamine like stimulants usually smoked by users

reported by survey participants was “tsitsvebi” – “needles” (“ephedra vint”, self-made drug chemically manufactured from needle-like eaves of evergreen shrubs of Ephedra, containing alkaloid ephedrine), which was reported by 20% of participants in the combined sample. Buprenorphine injection ranged between 19.3% in Rustavi to 73.2% in Batumi. Heroin injection varied from 33.6% in Tbilisi to 66.2% in Rustavi. The highest level of amphetamine type stimulants, methamphetamine (known as “Vint”), was reported in Tbilisi at 10.6%. The other amphetamine type stimulant – methcathinone (“Jeff”) – was reported only among 5 study participants in the combined sample (out of 2050 PWID). Morphine injection reached the highest proportion in Gori (9.6%). The highest rate of Desomorphine (“krokodil”) - a homemade opium-type synthetic drug injection – was revealed in 17.3% in the combined sample. In addition to abovementioned drugs, 10.1% of study participants in the combined sample reported Methadone injection during the last month prior to the study.

Figure 4: Types of drugs injected during the last month

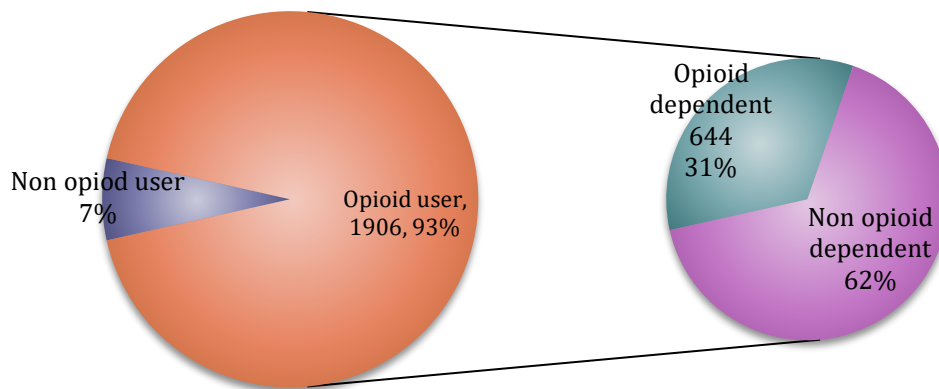


The majority of the total sample (93% of 2050 PWID) reported injection of narcotic analgesics during the last 12 months; of that number, 33.8% reported periods of regular injection of opioids for several days resulting in withdrawal syndrome during the last year, indicating that about one fourth of the study respondents revealed active opioid dependence.

Opioid dependence was also measured using the Rapid Opioid Dependence Screen (RODS), which is a brief 8-item measure designed to assess dependence on opioid drugs. The indicators for RODS measurement are in compliance with the Diagnostic and Statistical Manual of Mental Disorders, 4th edition (DSM-IV). A RODS calculation was conducted among the PWID who reported opioid injection during the last 12 months. Out of 8 item measures, the first assesses different types of opioid injections. The subsequent items, 2 to 8, measure the psychological, behavioral and cognitive factors associated with opioid use. Participants who responded to at least 1 type of opioid use in item 1 and replied yes at least 3 items from 2 through 8 was considered to be opioid dependents.

The RODS calculation revealed that 31.4% of those who used illicit opioid drugs (93% of the whole sample) had the active phase of opioid dependence. This amounts to 31% of all PWID being dependent on opioids.

Figure 5: Opioid dependence by RODS



Drug Use Risk Behavior

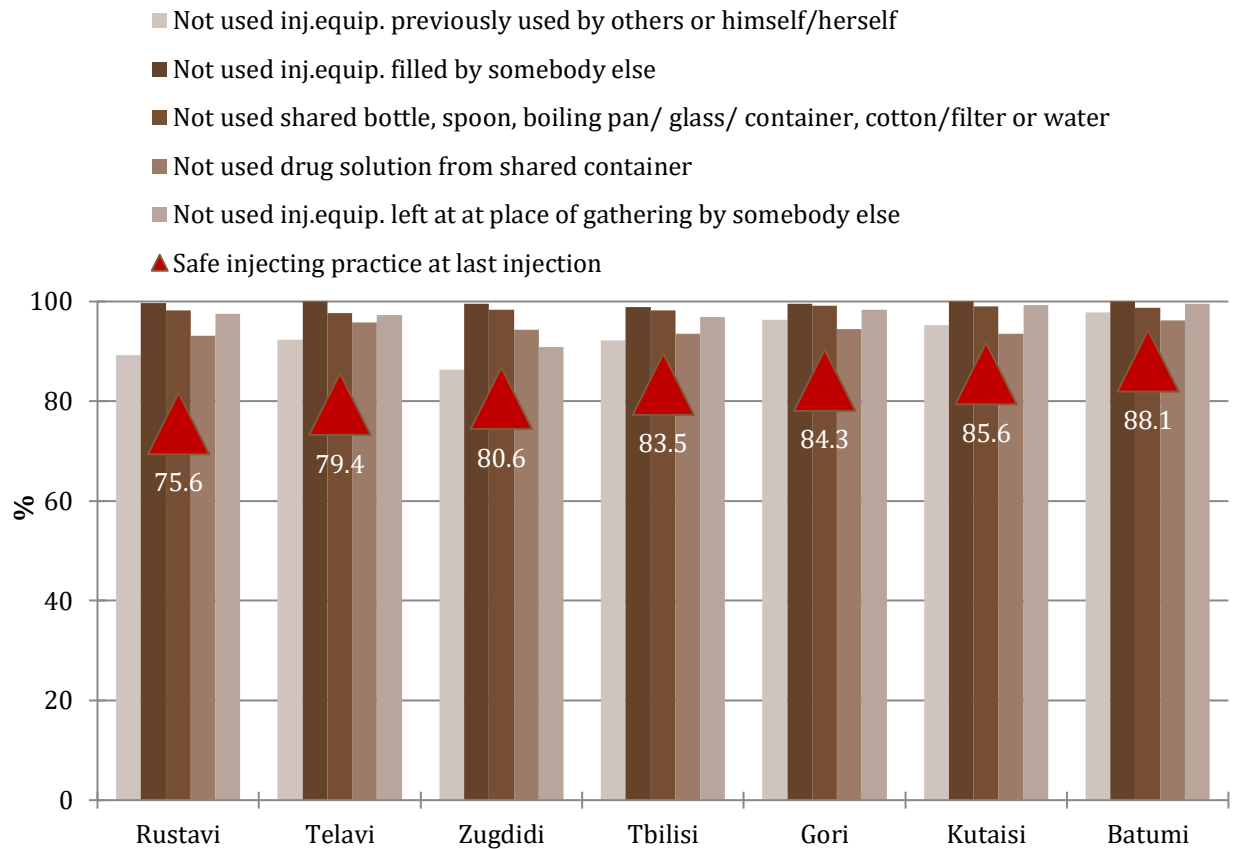
The study looked at lifetime injection behavior, as well as at practices during the last month and at the last injection. The study showed that more than half of PWID in all cities had shared needles, syringes and/or other equipment at least once during their lifetime. In Zugdidi, this proportion reached the highest level of 70%.

The picture significantly differed in terms of needle-sharing practices *at the last injection*. At the last injection, the proportion of PWID who reported sharing needles, syringes, and/or other equipment varied from 0.6% in Batumi to 6.8% in Zugdidi (the highest proportion). The proportion of PWIDs who re-used their needle and/or syringes was low in all survey sites and did not exceed 8.6% (in Rustavi). Meanwhile, sterile injecting equipment usage was quite high among PWID and ranged between 86.3% in Zugdidi and 97.8% in Batumi.

The study suggested that the sharing of injection paraphernalia (bottle, spoon, boiling pan/glass/container, cotton/filter or water) at last injection ranged from 0.1% in Gori and Tbilisi to 1.6% in Zugdidi. The highest proportion of respondents who reported usage of solution from shared containers at the last injection was in Rustavi (6.9%). The proportion of PWID who mentioned re-usage of injecting equipment left at a gathering place does not exceed 1.4% (Telavi).

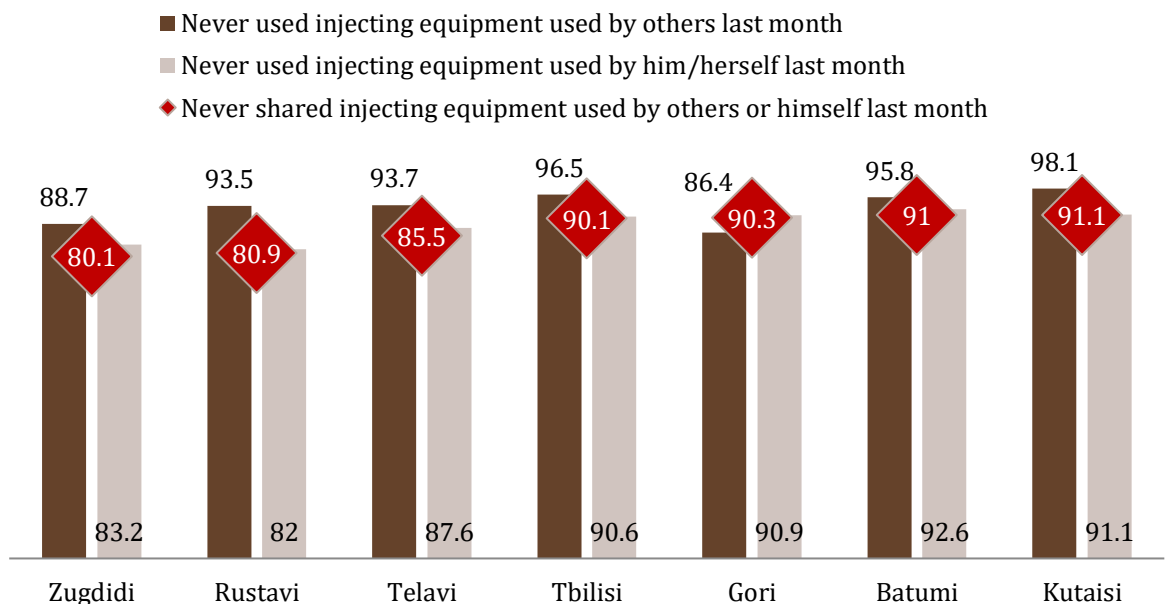
In order to measure safe injecting behavior at the last injection, a combination of the following different indicators was used: no usage of previously used injecting equipment by somebody else or him/herself; no usage of injecting equipment left at a gathering place by somebody else; no usage of a prefilled syringe by somebody else without his/her presence; no usage of shared equipment; and no usage of drug solution from shared container. As Figure 6 below shows, the proportion of survey participants practicing safe injection varied from 75.6% in Rustavi to 88.1% in Batumi.

Figure 6: Safe injection practices at last injection



The proportion of PWID who responded that they had not used injecting equipment previously used by somebody else in the *last month* varied between 86.4% (Gori) and 98.1% (Kutaisi). Also, a high proportion mentioned that they had not used needle/syringe used even by him or herself, this practice ranged from 82% (Rustavi) to 92.6% (Batumi). Figure 7 below describes sharing practice during last month injection:

Figure 7: Sharing practice during last month injection



The mean number of injecting equipment sharing partners (with whom PWID share injecting equipment) who shared during the last month ranges between 0.68 (Kutaisi) to 2.68 (Gori). Among those who reported sharing injecting equipment (used by others or him/herself) during the last month, about 75% always cleaned the needle/syringe before usage with boiled or not boiled water.

The majority of respondents (ranging from 92.7% in Zugdidi to 98.8% in Tbilisi) mentioned that they could get or buy new sterile needles/syringes when needed. Almost all participants (lowest 87.8% in Gori) indicated drug stores as a main source of getting needles/syringes. Syringe exchange programs were mentioned as a place to obtain new needles/syringes by 24.1% in Rustavi (the lowest level) and 61.8% in Gori (the highest proportion). The third most frequently mentioned source of sterile equipment was another injecting drug user.

Bivariate and multivariate analysis was carried out to reveal the determinants of unsafe injection¹¹ during last month. All the factors listed below in the Table 8 were used in bivariate and multivariate logistic regression analysis. A multivariate analysis showed a significant association between unsafe injection last month and city of residence, HIV testing practice last year and awareness of their results, HIV knowledge, frequency of drug injection, reach with preventive programs, receipt of syringes, and injecting “Ephedra vint” during the last month.

According to this analysis, PWID residents of Gori (OR 2.53, $p<0.05$), Telavi (OR 3.38, $p<0.01$) and Zugdidi (OR 3.35, $p<0.01$) had higher sharing practices compared to the residents of Tbilisi. PWID who had received an HIV test during last year and knew their result had lower odds (OR 0.47, $p<0.01$) of unsafe injection, compared to those who did not receive an HIV test last year and did not know their test result. Also, PWID with HIV knowledge (OR 0.65, $p<0.05$) and those who reached preventive programs with minimal coverage (OR 0.52, $p<0.05$) were less likely to share needles/syringes previously used by others. PWID who had received syringes during the last year (OR 1.83, $p<0.05$), were injecting several times a week or more (OR 3.77, $p<0.01$) and injected “Ephedra vint” (OR 1.88, $p=0.01$), had higher odds of sharing practice.

Table 8: Determinants for unsafe injection during last month, multivariate logistic regression

Factors		Odds	95% CI for Odds
City of residence (Tbilisi =reference)	Gori	2.53***	1.19:5.39
	Telavi	3.38***	1.6:7.17
	Zugdidi	3.35***	1.67:6.69
	Batumi	1.83	0.8:4.18
	Kutaisi	0.72	0.28:1.87
	Rustavi	1.55	0.76:3.17
Program minimal coverage ⁴ (No=reference)	Yes	0.52***	0.27:0.98
Received HIV test last year and know their results (No=reference)	Yes	0.47***	0.28:0.77
Age (=<24= reference)	=>25	0.81	0.39:1.68
HIV status (positive=reference)	HIV Negative	1.41	0.31:6.45
Education level (None or Primary 1-4 class or Secondary or vocational school= reference)	Higher or incomplete higher	0.83	0.55:1.26

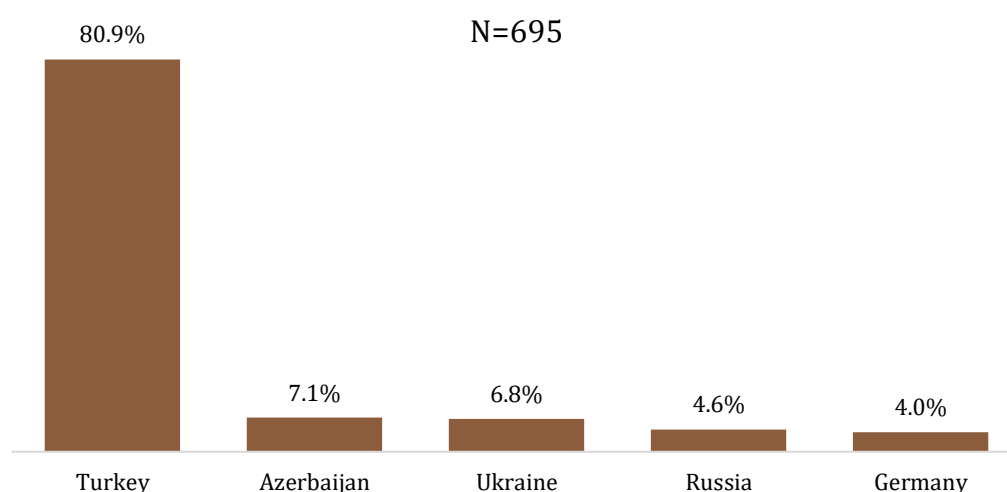
¹¹ Sharing of needles/syringes previously used by somebody else during last month

Factors		Odds	95% CI for Odds
HIV knowledge (GAM indicator ²) (No=reference)	Yes	0.65***	0.43:0.98
Heroin injection during the last month (No=reference)	Yes	1.48	0.39:1.68
Buprenorphin injection during the last month (No=reference)	Yes	0.91	0.59:1.39
Methadone injection during the last month (No=reference)	Yes	0.86	0.44:1.67
Dezomorphine injection during the last month (No=reference)	Yes	1.58	0.69:3.61
Ephedrone (Vinti) injection during the last month (No=reference)	Yes	0.87	0.38:2.03
Ephedra (Wiwvebi) injection during the last month (No=reference)	Yes	1.88***	1.19:2.96
Received syringes during the last year (No=reference)	Yes	1.83***	1.1:3.05
frequency of drug injection (injected once a week or less= reference)	injected once a week	1.56	0.83:2.92
	injected several times a week or more	3.77***	2.44:5.83

*** Significant association between comparison and reference group

This study revealed that more than half of the respondents from the combined sample had injected drugs outside of their permanent residence during the last 12 months. Injection abroad over the last year was reported in 33.9% of the combined sample, ranging from 16.3% in Tbilisi to 52.1% in Batumi. Among all cases who reported injection outside of their county, Turkey was the most commonly mentioned country (80.9%) followed by Azerbaijan, Ukraine, Russia and Germany (please see Figure 8 below):

Figure 8: Countries of injection abroad during last 12 months (combined among those who reported injection abroad)



An important difference was found between survey locations of PWID who had experienced overdoses during last 12 months, with the lowest proportion (1.6%) in Batumi and the highest (7.5%) in Zugdidi.

The majority of PWID (the lowest proportion of 74.7% in Zugdidi) reported that their apartment was the usual gathering place to take drugs. The most frequently used method for discarding used needles/syringes mentioned was throwing them in the garbage bin with the cap.

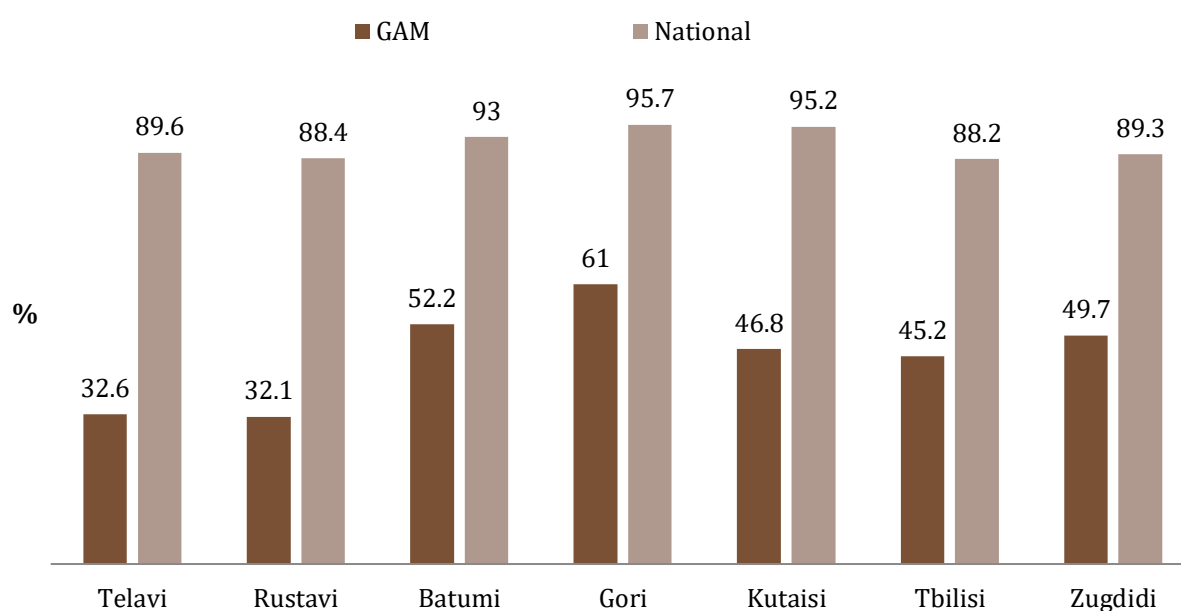
Knowledge of HIV/AIDS, Testing Practice and Self-Risk Assessment

Almost all participants had heard about HIV/AIDS, only five PWID (Tbilisi (1), Gori (1), Telavi (1), Zugdidi (1) and Rustavi (1)) did not know about this virus. Knowledge of those who are HIV infected, ill or died of AIDS varied from the lowest proportion of 25.3% in Rustavi to the highest of 56.2% in Zugdidi. There were large variations in answers to a specific question relating to knowledge of HIV. Approximately half of the respondents from the combined sample were misinformed that mosquito bites transmit the virus, with the highest proportion being 62.4% in Telavi.

The Global AIDS Monitoring (GAM) indicator measures knowledge of HIV prevention, understanding of HIV transmission, and the ability to reject major misconceptions. In this study, the proportion of participants able to answer all five questions correctly ranged from 32.1% (Rustavi) to 61% (Gori). Awareness of HIV transmission routes and preventive measures was high among PWID in all survey sites except Kutaisi, where the proportion of PWIDs with the knowledge of mother-to-child transmission did not exceed 52.4%. A higher proportion was aware that HIV cannot be transmitted by taking food or drink that contains someone else's saliva. The smallest proportion was found in Telavi (72.4%), while in other cities knowledge about this postulate is higher.

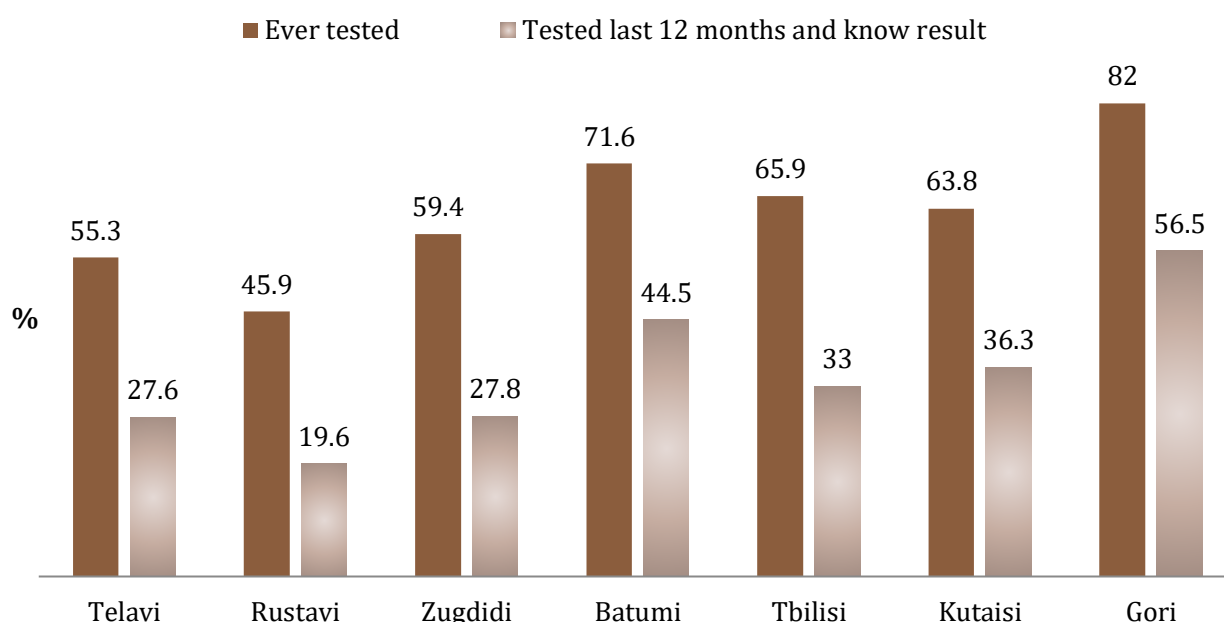
The national indicator on HIV prevention and transmission consists of the following true or false questions: One may protect oneself from HIV/AIDS by having one uninfected and reliable sexual partner; One can reduce HIV risk if one properly uses condoms during every sexual contact; A healthy looking person can be infected with HIV; One may be infected with HIV/AIDS by using a needle already used by someone else; One may be infected with HIV/AIDS by using a bottle, spoon, boiling pan/glass, container, cotton/filter or water that might have been touched by a needle already used by someone else; One may be infected with HIV/AIDS by taking solution from a shared container; Drug users may protect themselves from HIV/AIDS by switching to non-injection drugs. The proportion of participants who were able to answer at least seven questions correctly ranged between 88.2% (Tbilisi) to 95.7% (Gori).

Figure 9: Knowledge of HIV prevention and transmission and rejection of major misconceptions according to GAM and National indicators



More than half of the respondents knew where to obtain a confidential HIV test in his/her city. The proportion of those PWID who had never had an HIV test varied from 18% (Gori) to 54.1% (Rustavi). As the time interval shortens to the last 12 months, the rate of testing decreases further. HIV testing during the last year and known result varied from 19.6% (Rustavi) to 56.5% (Gori) (for detailed information see Figure 10 below):

Figure 10: Proportion of PWID who had a voluntary HIV test at least once in the past and who have received an HIV test in the last 12 months and know their results



In all survey locations, a high proportion of PWIDs (more than 85%) reported that they would inform their sex and PWID partners in case they were infected with HIV.

Bivariate and multivariate analysis was also done for the determinants of HIV testing during the last year. All the factors mentioned in the Table 9 were used in bivariate and multivariate logistic regression analysis. The logistic regression revealed that education level, preventive program's minimal coverage, HCV testing, safe injection practice during the last month and city of residence had a significant influence on HIV testing. PWID who had higher level of education, had 1.29 times higher odds ($p=0.05$), and those who were covered with the preventive program's minimal package had about 3.5 times higher odds ($p<0.01$), of being tested for HIV last year. PWID who exhibited unsafe sharing practices over the last month also had lower odds of being tested for HIV in the last year (OR 0.46, $p=0.01$) compared to PWID with safe injection behavior over the last month. Compared to Tbilisi residents, PWID residents of Gori (OR 2.95, $p<0.01$) had higher odds of HIV testing over the last year and those who were tested on HCV during the last two years, or ever tested, had significantly higher odds (OR 68.4, $p=0.01$ and OR 2.41, $p<0.05$, respectively) of HIV testing over the last year.

Table 9: Determinants of HIV testing behavior during last year, multivariate analysis

Factors	Odds	95% CI for Odds
Duration of drug injection (continuous)	1.00	0.99:1.02
Age (≤ 24 = reference)		
≥ 25	2.16	0.92:5.07
Education level (None or primary (1-4 class) or secondary or vocational school= reference)		
Higher or incomplete higher	1.29***	1:1.66

Factors		Odds	95% CI for Odds
Condom use at last intercourse (No=reference)	Yes	0.96	0.73:1.24
	didn't have sex	1.11	0.75:1.65
Sharing last month ¹² (Never shared= reference)	unsafe-shared	0.46***	0.26:0.82
Program minimal coverage ⁴ (No=reference)	Yes	3.47***	2.64:4.57
City of residence (Tbilisi =reference)	Gori	2.95***	1.92:4.52
	Telavi	1.06	0.68:1.65
	Zugdidi	1.44	0.93:2.24
	Batumi	1.35	0.9:2.03
	Kutaisi	1.00	0.66:1.51
	Rustavi	0.99	0.61:1.6
Tested on Hep C (never=reference)	tested during the last 2 years	68.4***	34.7:134.84
	tested more than 2 years ago	2.41***	1.04:5.57

*** Significant association between comparison and reference group

Sexual Behavior

This section describes the sexual behavior of PWID with different types of partners. Sexual partners were defined as follows:

- Regular sexual partner – a spouse or live-in partner or sex partner with whom the respondent does not live with but has regular sexual contact. Regular sexual contact – a relationship that lasts longer than one year, or less than one year with an intention to continue it.
- Occasional sexual partner – a sex partner who is not a regular or paid partner.
- Paid sex partner – a sex partner with whom the respondent had sex in exchange for money or drugs.

The median age of first sexual contact is 16 years in all survey locations. More than 84.5% (Telavi) of PWID reported having sexual contact in the past 12 months.

Condom use at last intercourse varied from 34.1% (Rustavi) to 43.7% (Telavi).

Having regular sex partners was mentioned by more than 63.3% (the lowest proportion in Telavi) of PWID throughout all survey locations. Most of them had one regular partner during last year. A relatively small proportion of respondents in all cities, ranging from 26.2% in Tbilisi to 32.7% in Gori, report using condoms with regular partners (see Figure 11).

More than 32.7% (Batumi) of PWID reported having occasional sex partners across cities, with the highest proportion of 43.8% in Zugdidi. The median number of occasional sex partners among those who had such partners in the last 12 months is 3 in all cities, except Tbilisi, where this figure

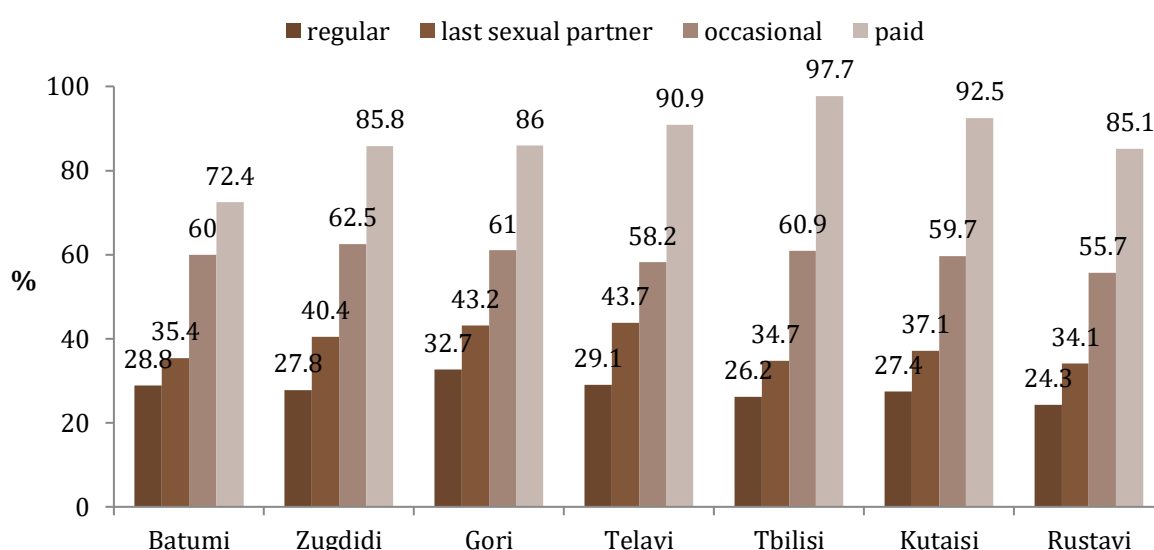
¹² Sharing of injecting equipment previously used by somebody else during last month

was 2. Condom use at last sexual intercourse with occasional partner varies from 55.7% (Rustavi) to 62.5% (Zugdidi) (see Figure 11).

Respondents were asked about the reasons for not using condoms with occasional sex partners. 51.4% of PWID reported that they did not think it was necessary (with the highest proportion of 66.8% in Gori), indicating that occasional partners were not perceived to be a potential source of HIV infection.

The lowest proportion of PWID who reported purchasing sex during the last year was found in Tbilisi (12.5%), while the highest proportion was seen in Zugdidi (27.2%). The median number of paid partners in most cities is 3; respondents only recalled different numbers in Tbilisi (2) and Kutaisi (4). Condom use with paid sex partners is over 80% in six cities, while in Batumi only 72.4% use condoms with such partners (see Figure 11).

Figure 11: Condom use with last and different types of partners during last sexual intercourse



As for the consistency of condom use with different partners during last 12 months, similar patterns were found among the majority of respondents. More than half of the participants (53.3%) in Gori never used condoms with regular sex partners, while 62.3 % did so in Rustavi.

Unprotected sex is high with occasional partners, varying from 12.7 in Zugdidi to 25% in Telavi. Condom-less sex with paid sex partners still exists, with the highest rates found in Gori (9.9%) and lowest in Kutaisi (3.9%).

Sexual behavior was analyzed by marital status. The analysis revealed that the proportion of married PWID who reported having paid sexual partners in the past 12 months varied from 19.1% in Tbilisi to 32.4% in Gori. It was more frequent for married PWID across all survey sites to have occasional sex partners over the last year, ranging between 24.1% in Rustavi to 42.3% in Kutaisi.

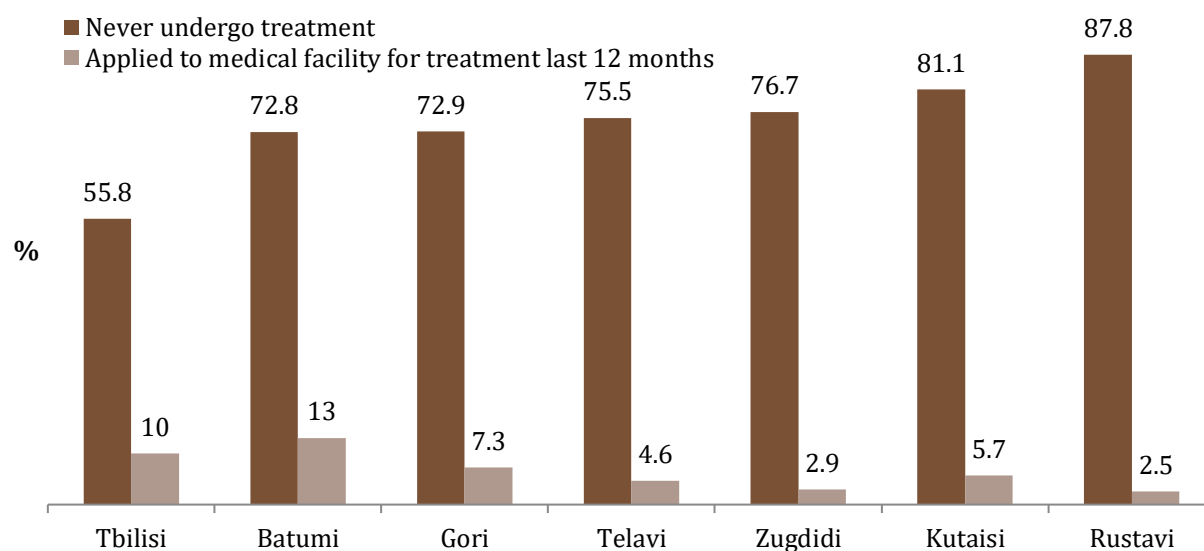
Among regular sex partners, 1.6% (Gori) to 4.5% (Zugdidi) are injecting drug users. A higher proportion of injecting drug users was found among occasional and paid sex partners, with the highest proportion in Tbilisi (13%) and (9.6%) respectively.

The survey revealed a very limited number of PWID who reported ever having sex with a male partner, varying from 0.4% in Tbilisi and Gori to 4% in Batumi. No one reported having sex with male partners in Telavi.

Exposure to Drug and HIV Prevention Programs and Social Influence

The proportion of respondents who have never been treated for drug addiction ranged from 55.8% (Tbilisi) to 87.8% (Rustavi). Of those who reported seeking treatment, the majority went to a medical facility for drug dependence treatment during the last 12 months, with the highest proportion across survey sites found in Batumi (13%).

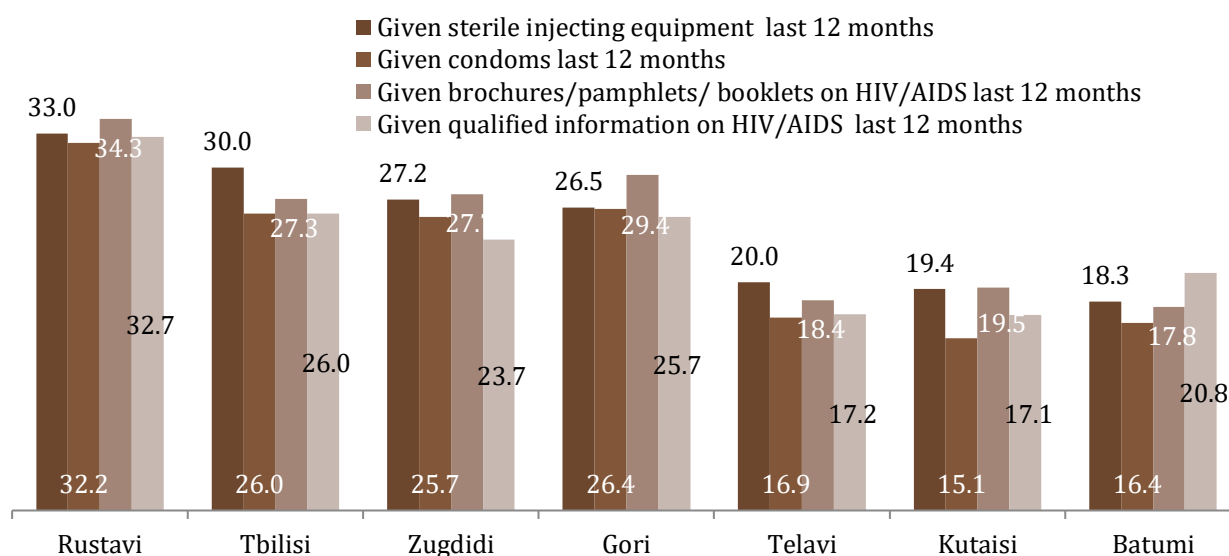
Figure 12: Use of drug dependence treatment at medical facility/specialized center



The lowest proportion of PWID who survive “extreme need” without anybody else’s help (“cold turkey”) was in Telavi (11.1%), with the highest in Zugdidi (25.3%).

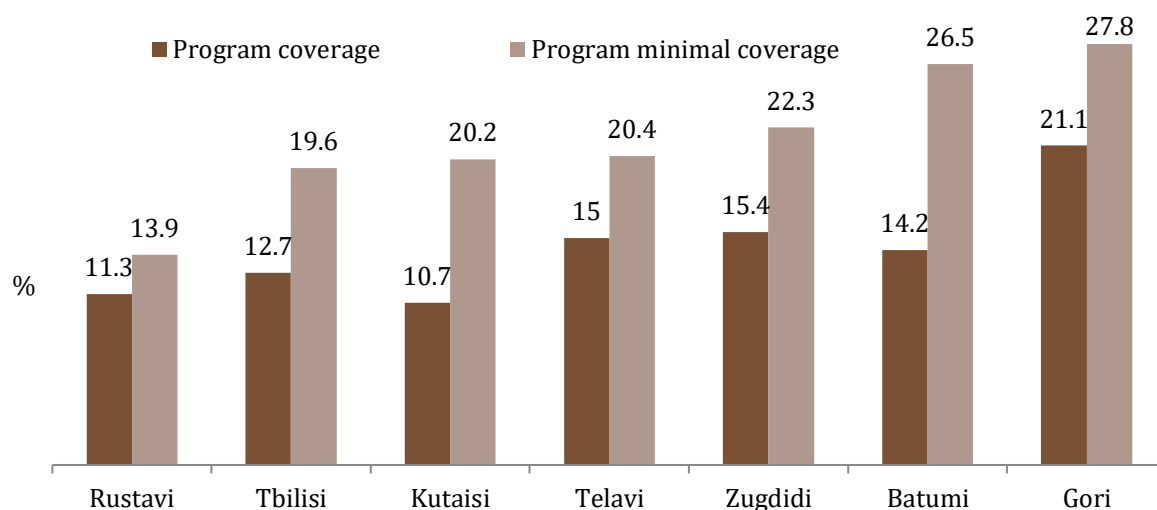
Preventive program coverage varied by survey sites. PWID are provided with different interventions by harm reduction programs, including free HIV testing, distribution of injecting equipment, condoms, information materials, and risk-reduction counseling services. The results showed that sterile injecting equipment was given to the lowest proportion of PWID in Batumi (18.3%) and highest in Rustavi (33%), while prevention packages are quite diverse across cities. Rustavi is the leading city with regard to coverage rates with all program components (see Figure 13).

Figure 13: PWID who were given sterile injecting equipment, condoms, IEC materials and qualified information on HIV/AIDS in the last 12 months



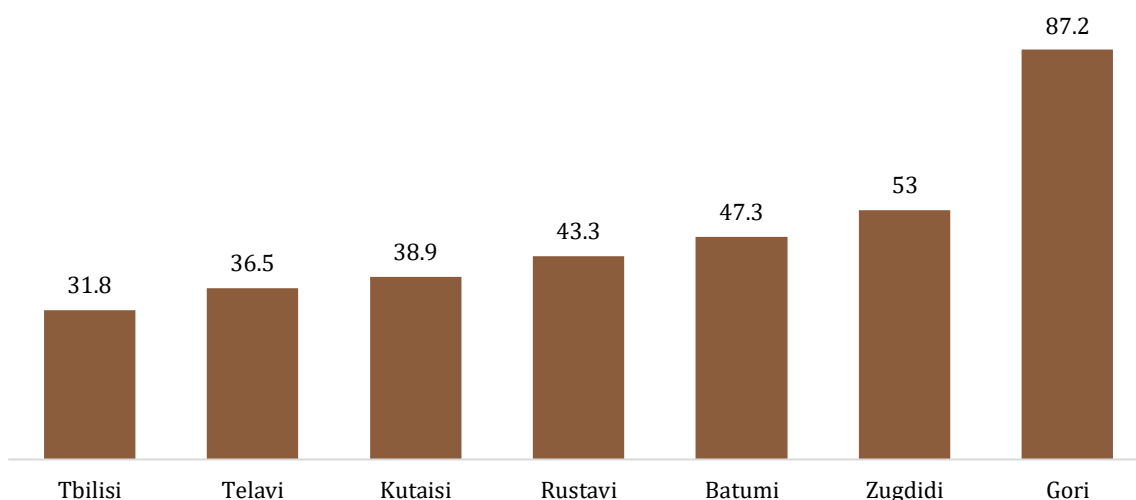
The coverage of preventive programs measured by the awareness of HIV testing possibilities and the reception of sterile injecting equipment and condoms during last 12 months is lower than the program minimal coverage, which is defined as receiving at least one of the following program commodities: sterile injecting equipment, condom, brochure/leaflet/booklet on HIV/AIDS and qualified information on HIV. Gori (27.8%) has the highest combination of awareness of HIV testing possibilities (see Figure 14).

Figure 14: Preventive program coverage



The proportion of respondents who had information about syringe exchange programs varied across the cities. Only 31.8% in Tbilisi PWID had this knowledge, while Gori is outstanding in this regard, with 87% of PWID being aware of the existence of the syringe exchange program in their city.

Figure 15: Awareness about syringe exchange program

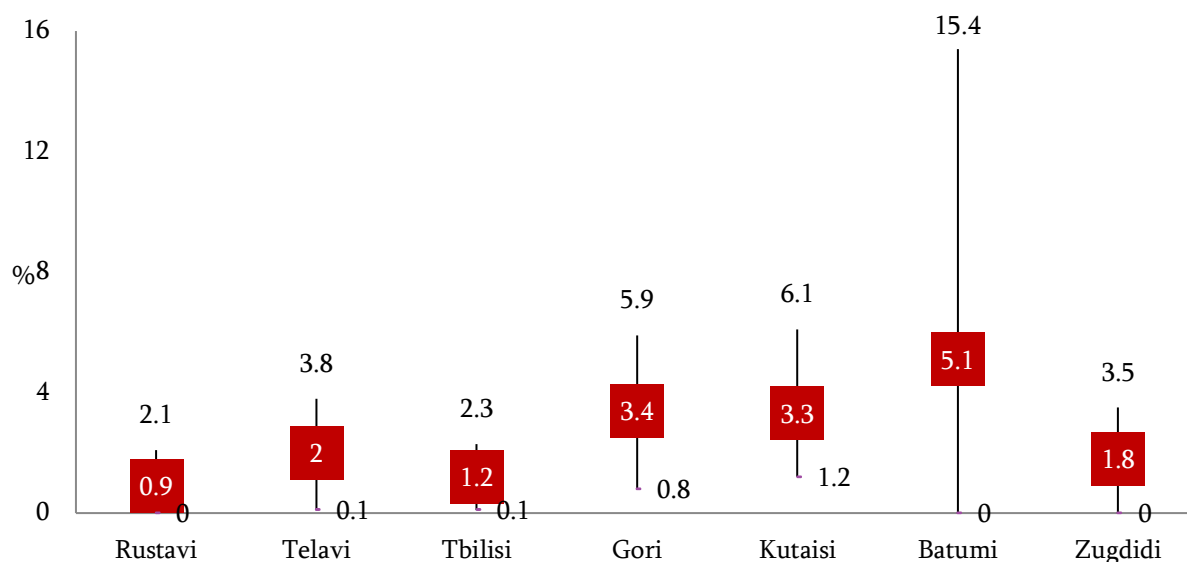


About one fifth of PWID mentioned needle partners who influence him/her to continue drug injection. Friends were found to have major impact on quitting drug-use, which were mentioned by about one third of the participants.

Prevalence of HIV and HCV

The prevalence of HIV across all cities ranges from 0.9% in Rustavi to 5.1% in Batumi, with wide confidence intervals (95%CI, 0%-15.4%) (see Figure 16).

Figure 16: Prevalence of HIV



In order to measure prevalence rates among the different age groups, an aggregated sample of all seven cities was analyzed. The analysis showed that PWID above 40 years had a higher HIV prevalence than the other age groups.

Table 10: HIV prevalence by age groups (combined sample analysis)

Age groups	%	n/N
18-24	2.1	2/97
25-30	2.0	5/255
31-40	1.4	8/555
≥41	2.8	32/1143
All ages	2.3	47/2050

Risk injection, sexual behavior, and testing practices were analyzed among the infected individuals. It was found that every third HIV infected respondent did not use condoms with a sexual partner during their last intercourse, and 10.6% of HIV infected respondents had never been tested for HIV in their lifetime.

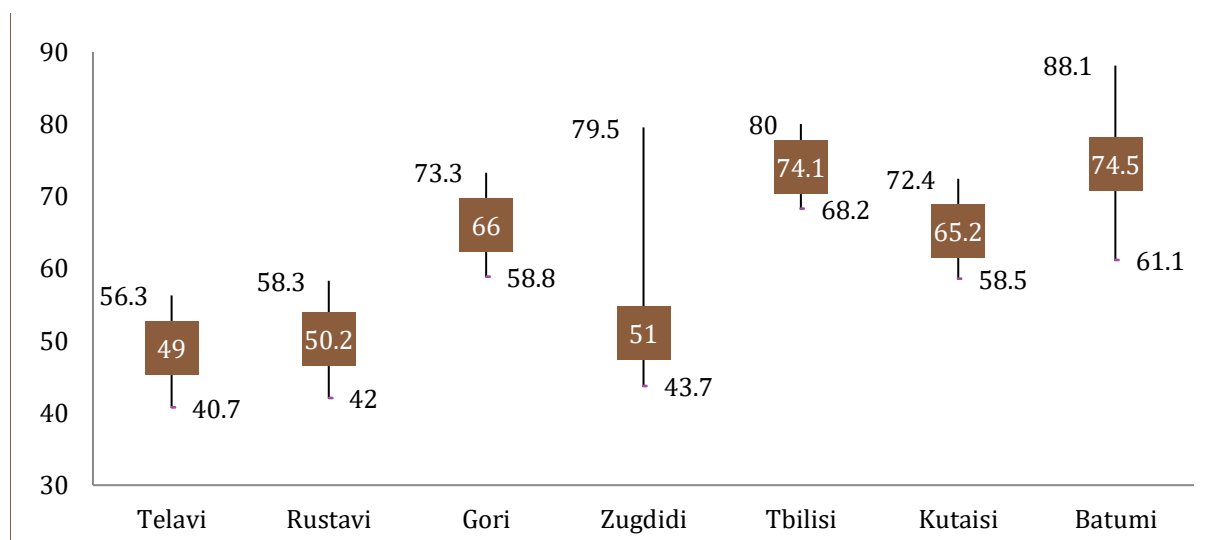
Table 11: Risk behavior among HIV positive PWIDs (combined sample analysis)

Risk behavior	%	n/N
Injected with used injecting equipment last month	4.3	2/47
Injected with used injecting equipment at last injection	10.6	5/47
Did not use condom with last sex partner at last intercourse	30.0	12/40
Did not use condom with regular sex partner at last intercourse	52.4	11/21
Never tested	10.6	5/47

The hepatitis C serostatus was based on a serological test result for anti HCV antibodies, which shows lifetime exposure to HCV infection. In the total sample, 63.2% of PWID were found to be HCV positive. HCV prevalence was high across all cities and ranged from 49% in Telavi to 74.5% in

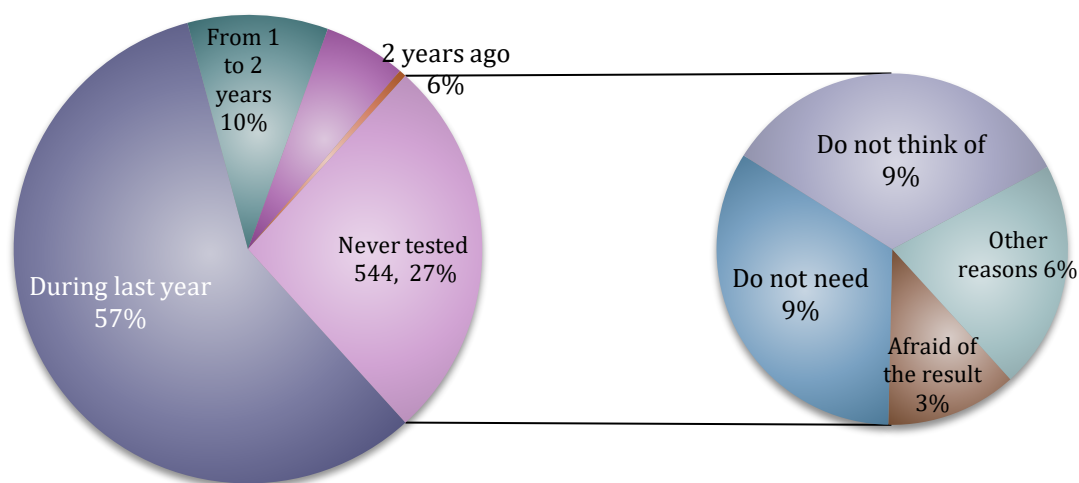
Batumi. Only 3.1% of young PWID (younger than 25 years), were diagnosed with HCV infection; however, due to the small sample size, this estimation should be treated with caution. HIV/HCV co-infection was found among 43 participants (91.5% of HIV infected individuals).

Figure 17: Prevalence of Hepatitis C



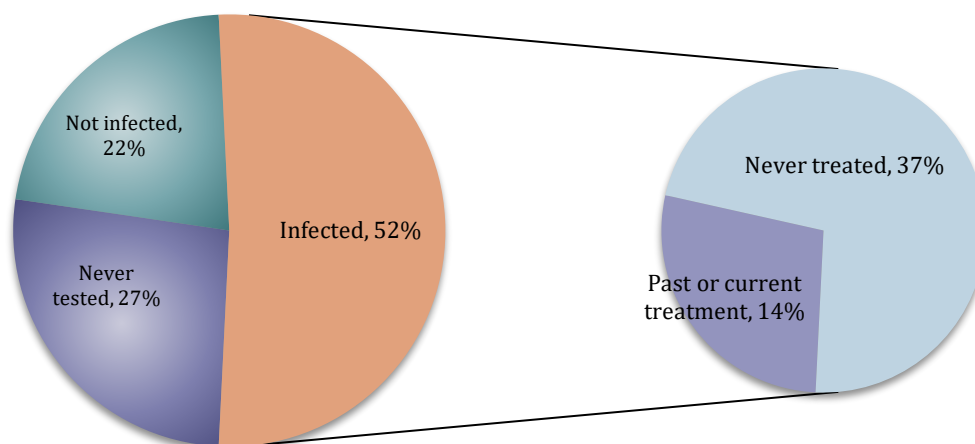
Almost all participants were aware of the Hepatitis elimination program, with only a few exceptions. Friends and TV were mentioned as sources of information. Knowledge of HCV infection transmission was satisfactory with variations across the cities. In Zugdidi, Rustavi and Telavi only 87-88% of PWID thought that hepatitis C infection could be transmitted by sharing private hygiene items (toothbrush, shaver); almost all correctly responded that hepatitis C infection could be transmitted by sharing injection equipment. Responses to the question where Hepatitis C testing could be done varied by cities: the lowest rates were reported by respondents in Rustavi (60.2%) and Telavi (62.1%), while the highest rates were in Gori (88%). 57% of the total sample were tested during last year. Similarly, Rustavi PWID reported the lowest testing rate last year (35%), while Gori respondents reported highest rate (73%). Overall, 27% had never been tested for hepatitis C during their lifetime. In Rustavi, almost every second injecting drug user had never been tested; in other cities, this rate ranged from 14% (Gori) to 36% (Telavi). “Do not need it” and “Do not think about it” were mentioned as the main reasons for never being tested.

Figure 18: Hepatitis C testing experience (N=2050)



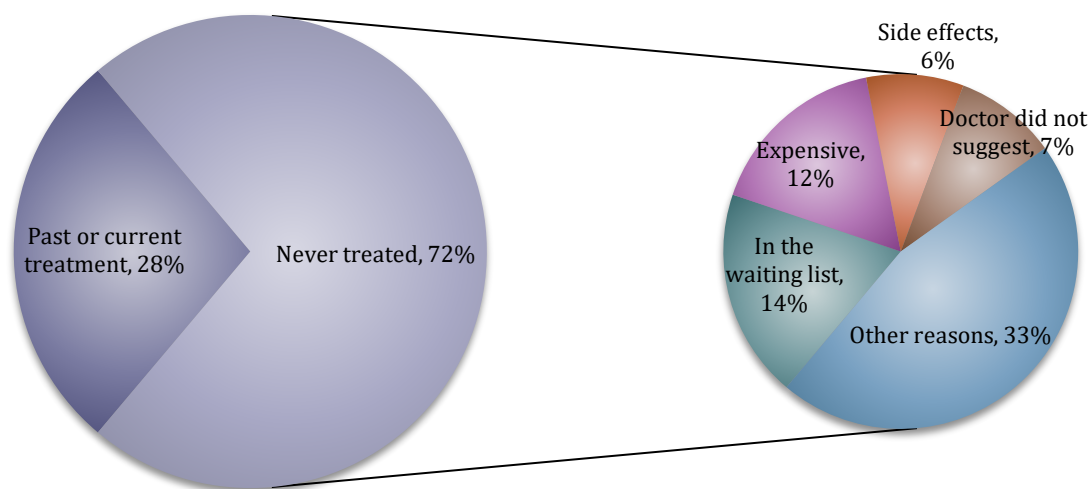
Self-reported HCV infection was mentioned by 52% of participants, while 22% (544 individuals) self-reported being HCV negative based on testing undertaken some time prior to the study (see Figure 19).

Figure 19: Hepatitis C treatment experience (N=2050)



The study revealed HCV positivity in 37% of PWID who self-reported to be negative; the majority of them were tested two years prior to the study. Of the self-reported HCV positive PWID (52% from the total sample, N=1057), the majority had not been treated. About one fifth were in the waiting list to start treatment, while one sixth mentioned that treatment (diagnostic and monitoring tests) was expensive for them. Less than 10% mentioned side effects that restrained them from initiating treatment (see Figure 20). The lowest proportion of PWID who did not initiate treatment because of financial reasons was found in Tbilisi; the rate was four times higher in Telavi, Kutaisi and Rustavi.

Figure 20: Hepatitis C treatment experience among self-reported infected PWID (N=1057)



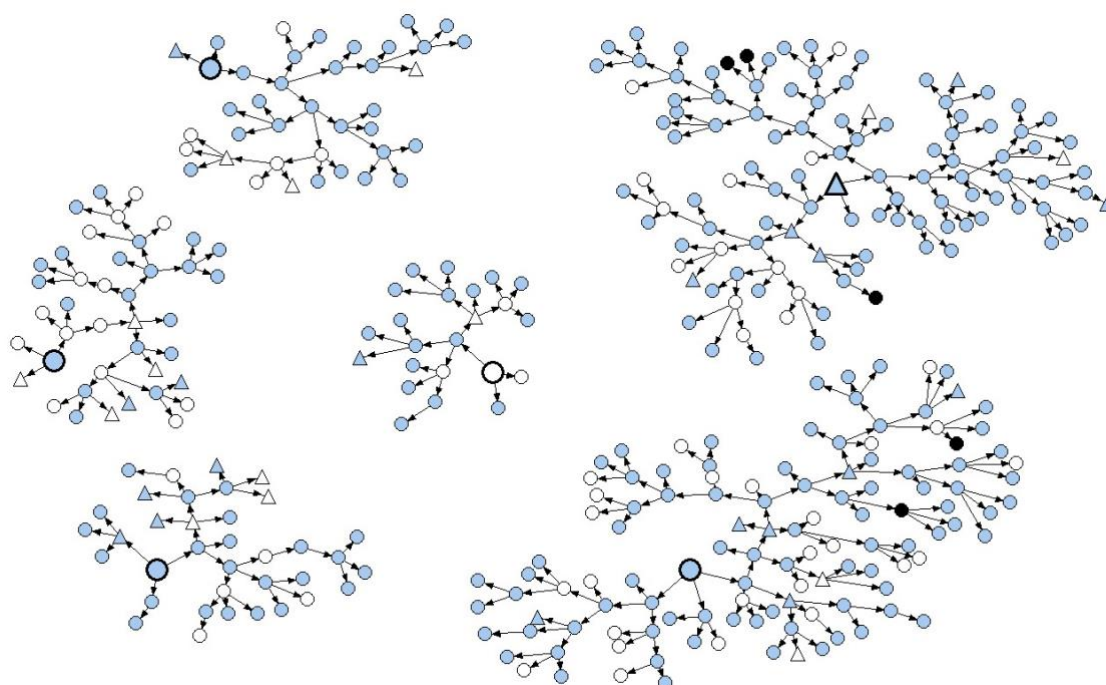
From PWID who initiated treatment (28% from the total sample, 293 individuals) majority completed the course, 2% interrupted because of side effects and 2% due to financial problems.

Recruitment Patterns by Risk Injection, HIV and HCV Status

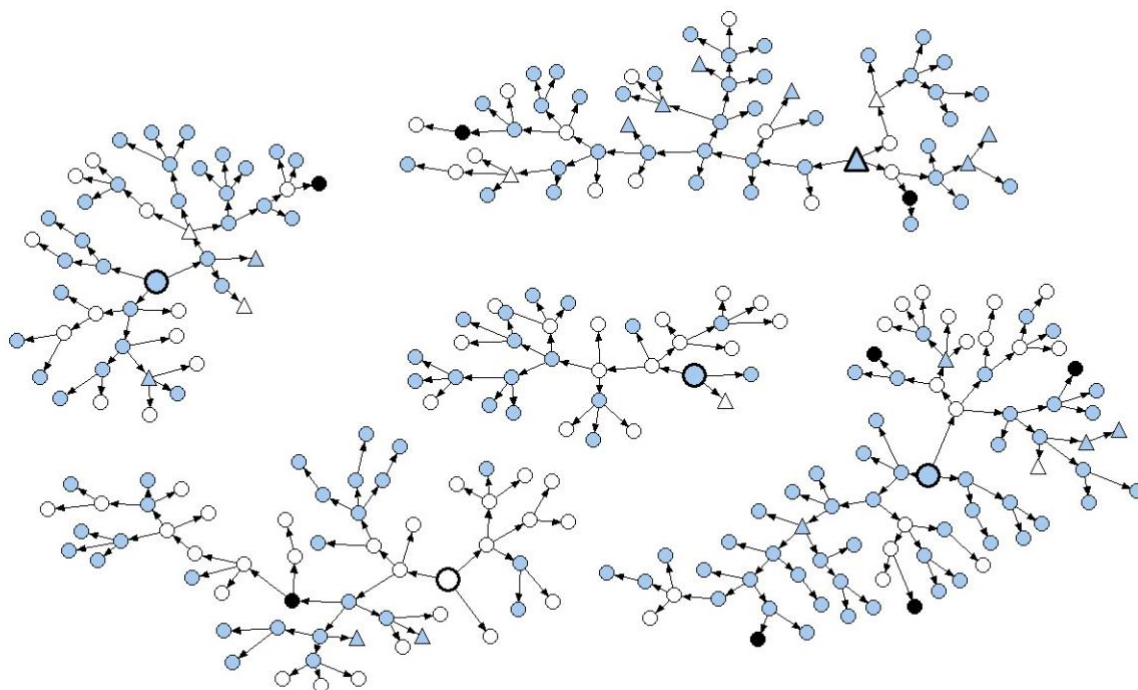
The recruitment by seeds was mapped using NetDraw, illustrating the waves in all survey locations. As shown in the figures below, some seeds produced long referral chains and others did not. The figures below represent recruitment patterns of PWID by risky injection behavior, their HIV and HCV status. Safe injection behavior was defined as those PWID engaging in non-risky injection at last drug injection (No usage of needle/syringe previously used by somebody else, no usage of needle/syringe left at a place of gathering, no usage of syringe prefilled by somebody else without his presence, no usage of shared equipment, no usage of drug solution from shared container prepared without his/her presence). In the pictures below, larger symbols represent seeds and smaller symbols represent subsequently recruited PWIDs:

○	HIV and HCV negative with safe injection behavior
△	HIV and HCV negative with risky injection behavior
●	HIV and HCV positive with safe injection behavior
▲	HIV and HCV positive with risky injection behavior
●	HIV positive, HCV negative with safe injection behavior
▲	HIV positive, HCV negative with risky injection behavior
●	HIV negative, HCV positive with safe injection behavior
▲	HIV positive, HCV negative with risky injection behavior

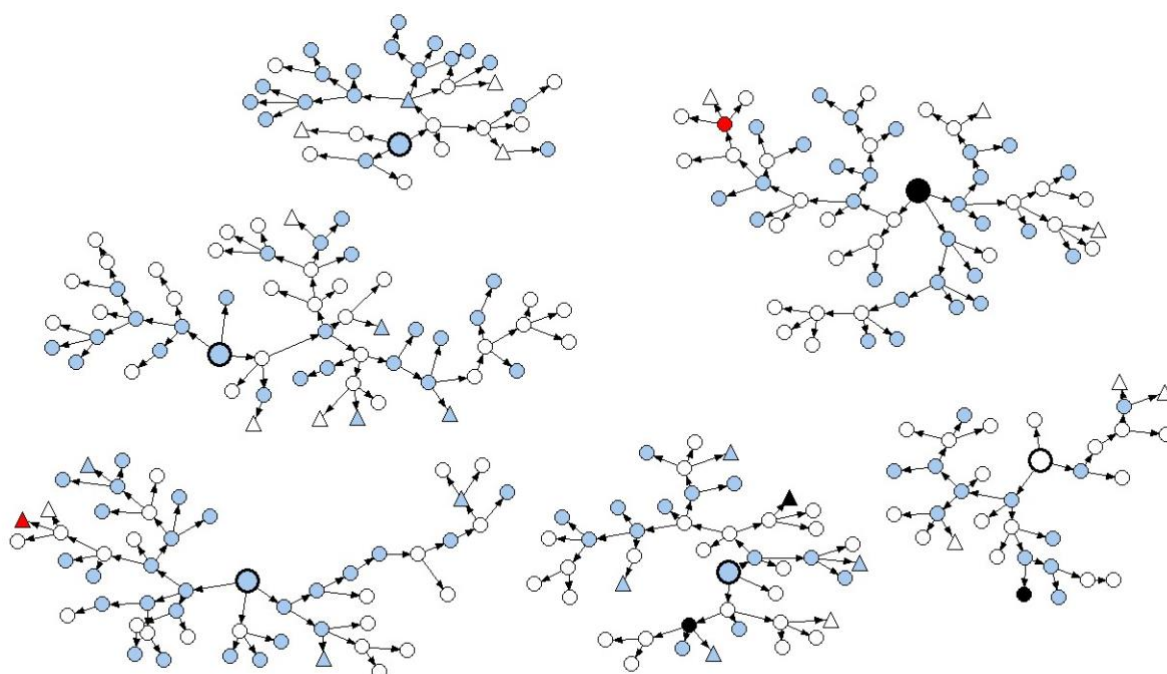
Picture 1: Recruitment chain of Tbilisi PWIDs by risky injection behavior, HIV and HCV status



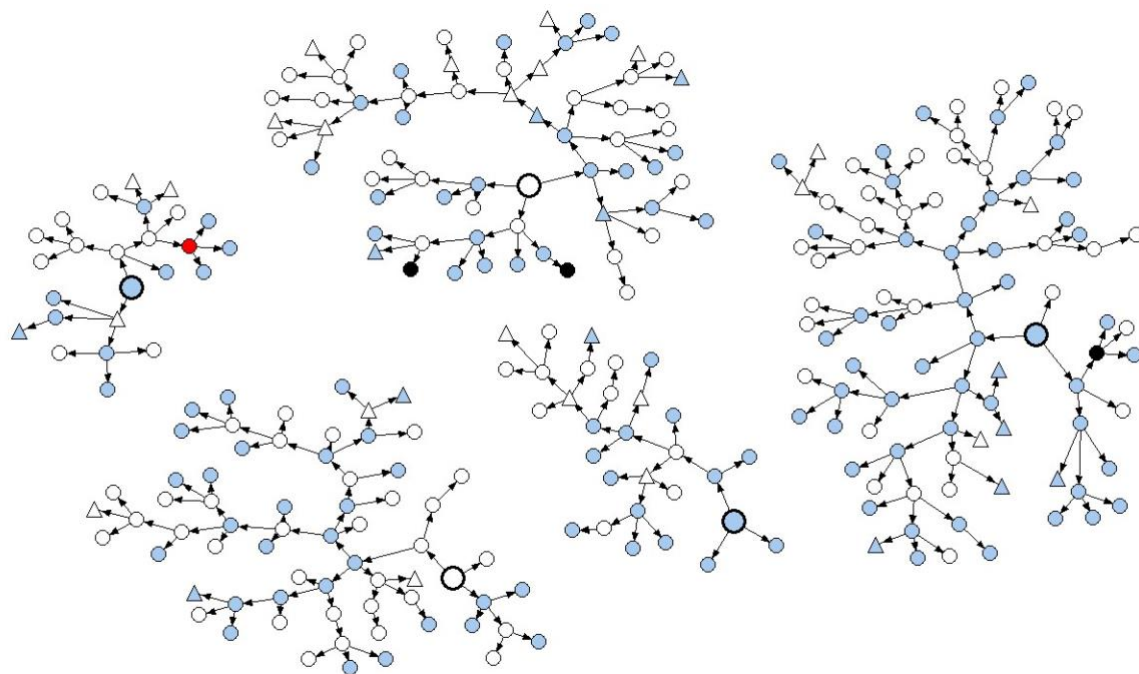
Picture 2: Recruitment chain of Gori PWIDs by risky injection behavior, HIV and HCV status



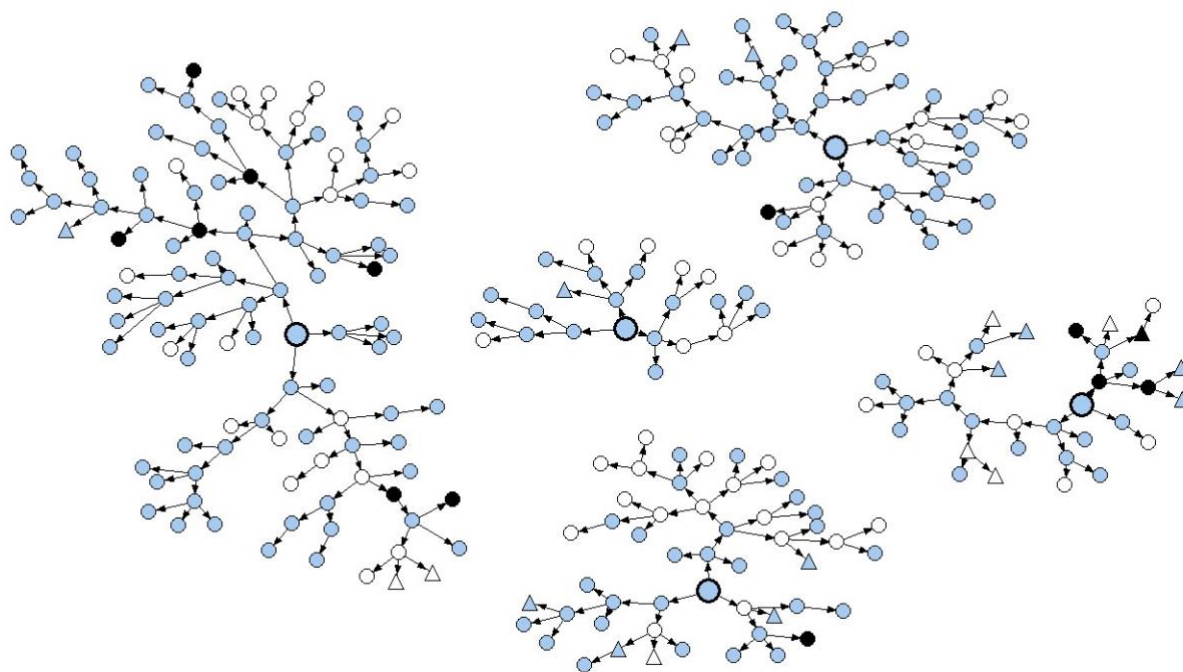
Picture 3: Recruitment chain of Telavi PWIDs by risky injection behavior, HIV and HCV status



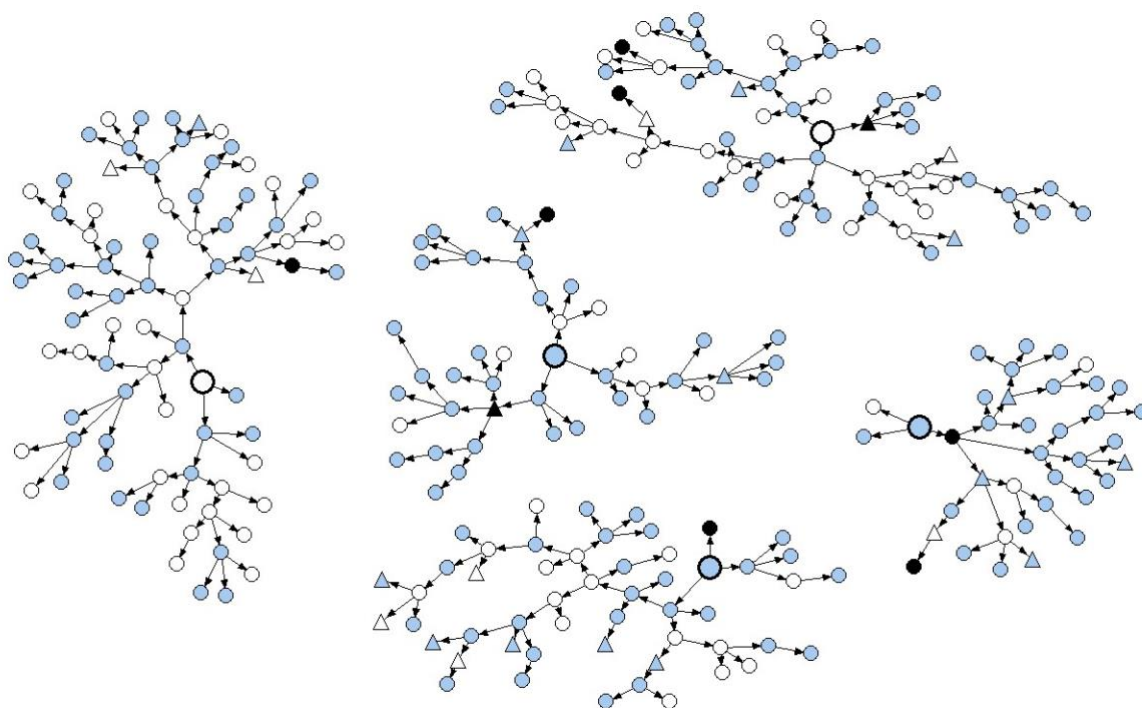
Picture 4: Recruitment chain of Zugdidi PWIDs by risky injection behavior, HIV and HCV status



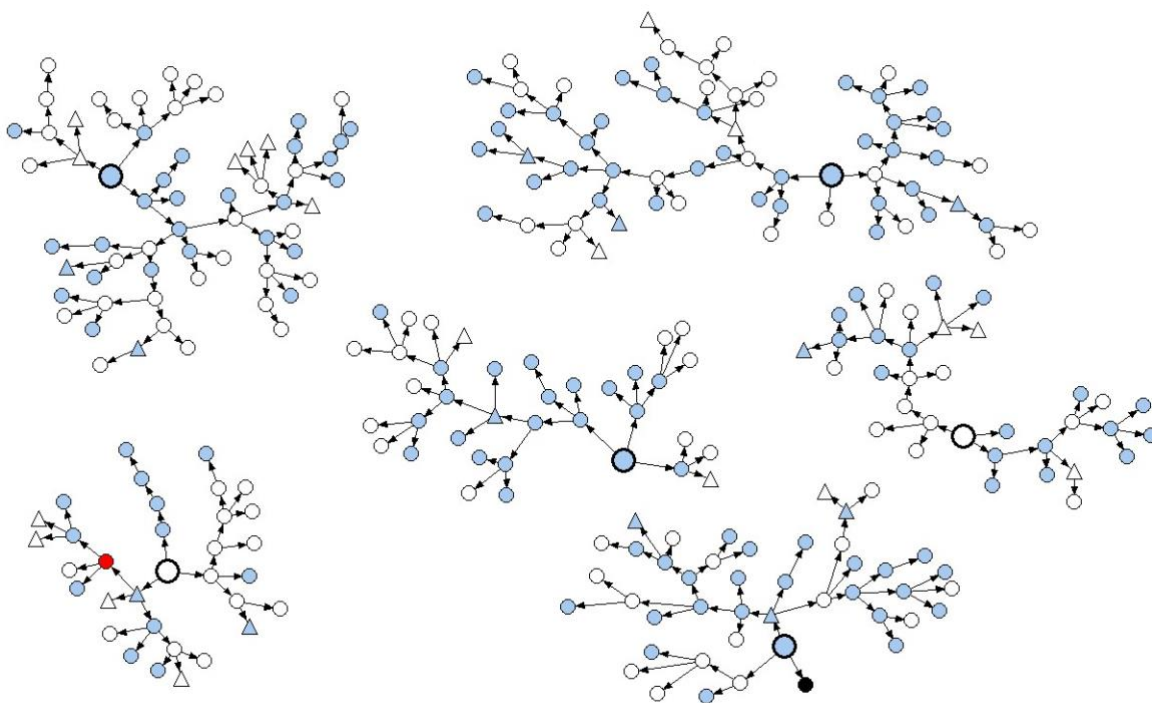
Picture 5: Recruitment chain of Batumi PWIDs by risky injection behavior, HIV and HCV status



Picture 6: Recruitment chain of Kutaisi PWIDs by risky injection behavior, HIV and HCV status



Picture 7: Recruitment chain of Rustavi PWIDs by risky injection behavior, HIV and HCV status



Study limitations

The findings of the survey should be interpreted in the light of certain limitations:

Sampling bias. The advantage of the RDS method is that it is useful for recruiting more hidden sub-groups; however, the survey population should be connected by a network. There are several potential sources of error and bias in RDS. These include the influence of non-response bias, the selection of seeds, and others.

- The selection of seeds representing different age-groups were not as diverse as desirable in all cities, which might have led to under-representation of young PWID. On the other hand, in the cities where young seeds were selected, still very few young PWID were recruited. For instance, in terms of demographic characteristics such as age groups, Zugdidi seeds represent all sub-groups. However, PWID younger than 25 years of age formed only 2.3 % of the final sample;
- The study could have under-represented some subgroups that were not well connected with the larger network of PWID. For example, the study managed to recruit PWID mainly from lower parts of the socio-economic ladder. The majority of study participants had small monthly incomes; therefore, the study incentives were attractive to them. On the other hand, PWIDs whose position on the socio-economic ladder is high were not well represented in the survey.

Limited gender distribution. Disaggregated analysis by gender was not possible since only a few female PWID had been recruited. The small numbers of women participating in the study may indicate that they are more hidden and difficult to reach.

Population estimates. RDS, along with sampling, implies a statistical inference to generate population estimates produced by the RDSAT software. There is much disagreement and confusion about the ability of this software to generate representative data. There is concern that current inference methods do not reduce the RDS sample biases. Therefore, caution is required when interpreting findings based on the RDS method.

Inclusion criteria. Another study limitation is related to the inclusion criteria adopted. Due to the need of parental consent for the enrollment of 15-17 year old individuals, this age group was not represented in the sample. The importance of this limitation lies in fact that one third of PWID started injecting drugs under the age of 18.

Reporting bias. As in any interview-based survey, it is possible that respondents may not have accurately answered some of the sensitive questions, or may have had difficulties in recalling information. Due to social stigma, some behaviors, such as condom use, drug injection, needle sharing, or having same gender sex, may be under-reported by respondents. Since all interviews were conducted in private places, the survey was anonymous and personal identification details were not collected, it is expected that this might minimize reporting bias.

Generalizability of the samples. RDS estimates can be generalized to the network of PWID who live, work or socialize in the given study area. Therefore, data are presented by each study location. In some instances, a combined non-weighted sample was analyzed to offer additional insight into the characteristics and behaviors; however, these data should not be generalized to the entire PWID population in the country.

Discussion

Surveillance of the HIV biological and behavioral factors among PWID has been implemented in Georgia since 2002, when the first round of the Bio-BSS was carried out in Tbilisi. Subsequent rounds followed in 2004, 2006, 2007, 2008-09, 2012, 2014-15¹³ and 2017 with growing coverage of cities. Comparative analysis of a common set of indicators across the years allows for the measurement of changes and provides directions to sustain the gains and focus future preventive strategies.

There has been an increase in PWID median age since 2009 across all cities. Age composition and other social characteristics of the samples, such as income, may not reflect the real distribution of PWID in the cities but might be related to differences in the social segments reached by the study.

First drug consumption and first drug injection age is within the same age range as in previous years. Across all cities, young people at the age of 15-16 years consume their first non-injection drug and inject at the age of 18-20.

Table 12: PWID median age and median age of first drug consumption and injection by years, 2009-2017

Median age	Year	Tbilisi	Gori	Telavi	Zugdidi	Batumi	Kutaisi	Rustavi
Age	2009	40	34	32	34	35	35	
	2012	39	36	35	38	35	38	
	2015	41	37	37	41	40	42	37
	2017	46	40	43	39	44	42	38
First non-injection drug consumption age	2009	16	17	17	16	16	17	
	2012	16	16	16	16	15	16	
	2015	15	16	16	16	16	16	16
	2017	16	16	17	16	16	16	16
First drug injection age	2009	19	20	20	18	19	20	
	2012	19	20	19	18	18	19	
	2015	18	20	20	19	19	19	
	2017	19	19	20	19	20	19	20

Non-injecting drugs consumption demonstrated some changes since 2015. Overall, a higher proportion of PWID (82.2%) reported consumption of non-injection drugs in 2017 compared to the 2015 study. CNS depressants remained the most frequently consumed drug by a non-injection route. New psychoactive drugs, such as synthetic cannabinoids and cathinones usually smoked by users, that were first captured by the 2015 study (7.1%) were consumed by twice the proportion of respondents (14.4%) in 2017. The difference in drug consumption between age groups is less prominent in 2017 compared to the 2015 study.

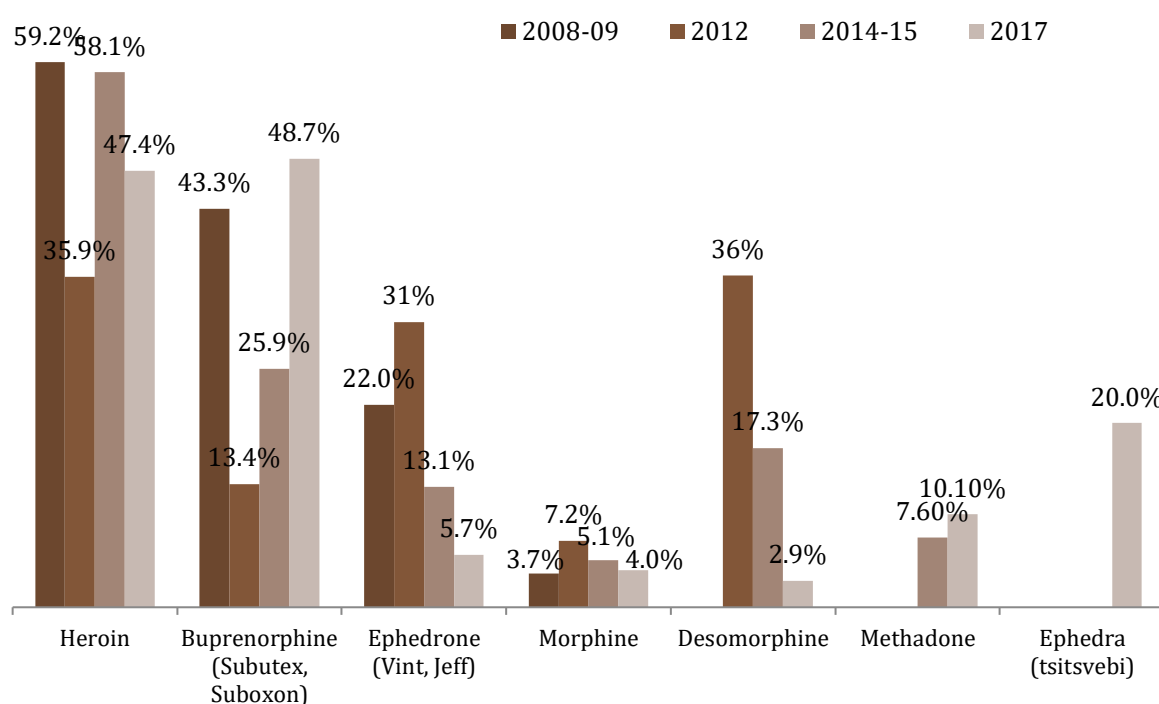
A remarkable change occurred in the structure of injecting drugs over the last years. Heroin¹⁴ still remains one of the most misused substances among problem drug users in Georgia. Heroin has

¹³ Bio-BSS Reports of the SHIP project (2002-2006 Tbilisi, 2004-2006 Batumi, 2007- 2009 Kutaisi) and GF project (2009 Tbilisi, Batumi, Gori, Telavi, Zugdidi; 2012 Tbilisi, Batumi, Gori, Telavi, Zugdidi, Kutaisi; 2015 Tbilisi, Batumi, Gori, Telavi, Zugdidi, Kutaisi, Rustavi).

¹⁴ Heroin includes also leftover from heroin production (so called "sirets"), which is a cheaper illicit drug compared to pure heroin.

slightly dropped from 58% in 2015 to 47% in 2017, while buprenorphine became a primary injecting substance in 2017. Every second drug user injected subutex or suboxone during the last month prior to the survey, which is almost twice as high compared to 2015. In contrast, Ephedrone and Desomorphine were reported by a lower proportion of PWID than in the previous study. Desomorphine emerged in 2012 and was cited by a third of injecting drug users. This drug, which is known by the name of “krokodil”, is a home-made opiate-based drug, the ingredients of which are easily obtained at a regular pharmacy at a low cost. In Georgia, there was a mass shift to “krokodil” due to reductions in the availability of heroin and buprenorphine on the illegal drug market, which was accompanied by a substantial increase in their price. However, these substances became more accessible in subsequent years and desomorphine use dropped significantly. Morphine use has remained at the same low levels since 2008. In 2017, a new substance prepared from the herb ephedra emerged among misused substances. This home-made drug was reported by one-fifth of respondents in the 2017 study.

Figure 21: Type of drugs injected during last month by years, 2009-2012-2015-2017¹⁵

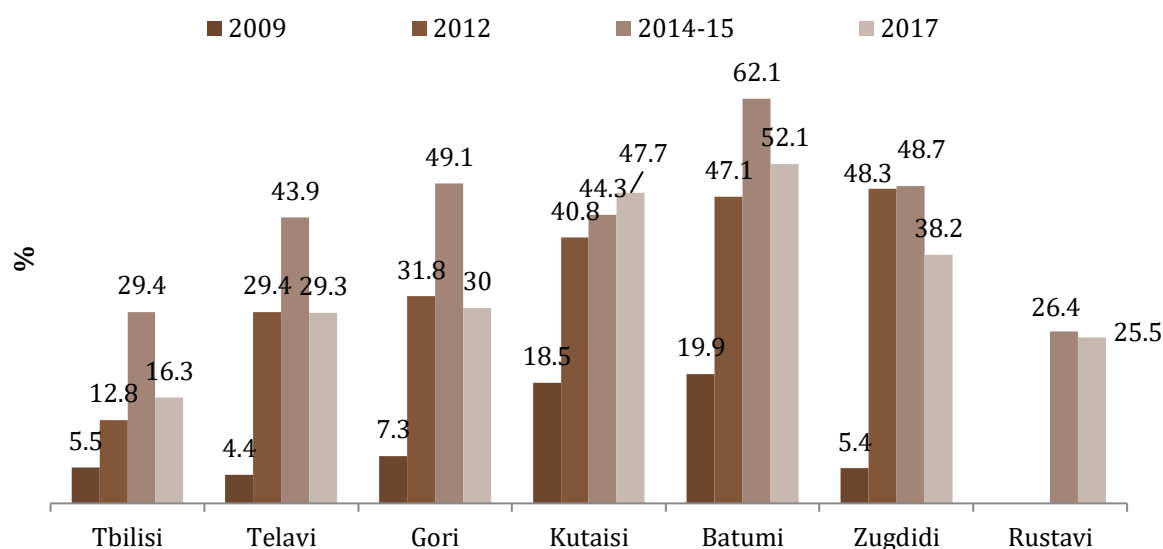


One third of PWID (33.9%) from the total sample had injected abroad during last 12 months, which is lower than what was observed in 2015 (42.5%). Injection in other countries decreased across almost all cities. The highest proportion was demonstrated among Batumi PWID, followed by Kutaisi, while Tbilisi residents reported the lowest rate. Turkey remained the most frequently visited country for injection purposes (27.6% from the total sample). Due to close proximity to this country and easy access to drugs there, according to anecdotal evidence, Turkey remains the most visited country for injection purposes. Ukraine, Russia and Azerbaijan were mentioned by about seven percent of drug users, which is the same proportion as found in the previous round. Among the type of drugs injected in Turkey, the leading one is heroin, followed by buprenorphine. The literature suggests that HIV risk behavior could increase while traveling, which can be explained by

¹⁵ Combined sample, unweighted data

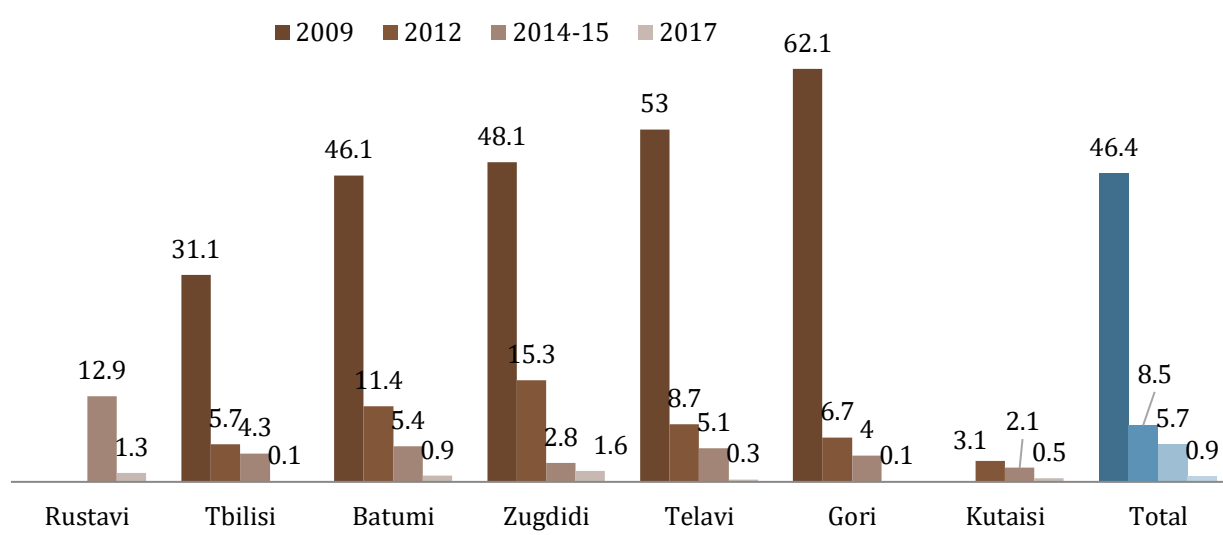
exposure to different social norms and lack of familiarity with injection supply sources. Difficulties in access to sterile injecting equipment prompt PWID to share equipment with unknown users (Kostnapfel et al. 2011; Rachlis et al., 2007). In our case, 2.6% of all PWID reported sharing injecting equipment at the last injection, while among those who injected abroad this risk increases up to 11.9%. A similar pattern was observed in 2015, which indicates that prevention interventions should intensify work in this direction.

Figure 22: Injection abroad by years, 2009-2012-2015-2017



The practice during the last episode of injection is an important indicator to estimate injection behavior and its associated risks. One-time use of sterile injecting equipment and not sharing of paraphernalia are the most effective ways to limit HIV transmission. There was a sharp reduction in sharing of injecting equipment and other paraphernalia from 2009 to 2012. This reduction trend continued in 2017 and only a small proportion (from 0.1% to 1.6%) still shared paraphernalia.

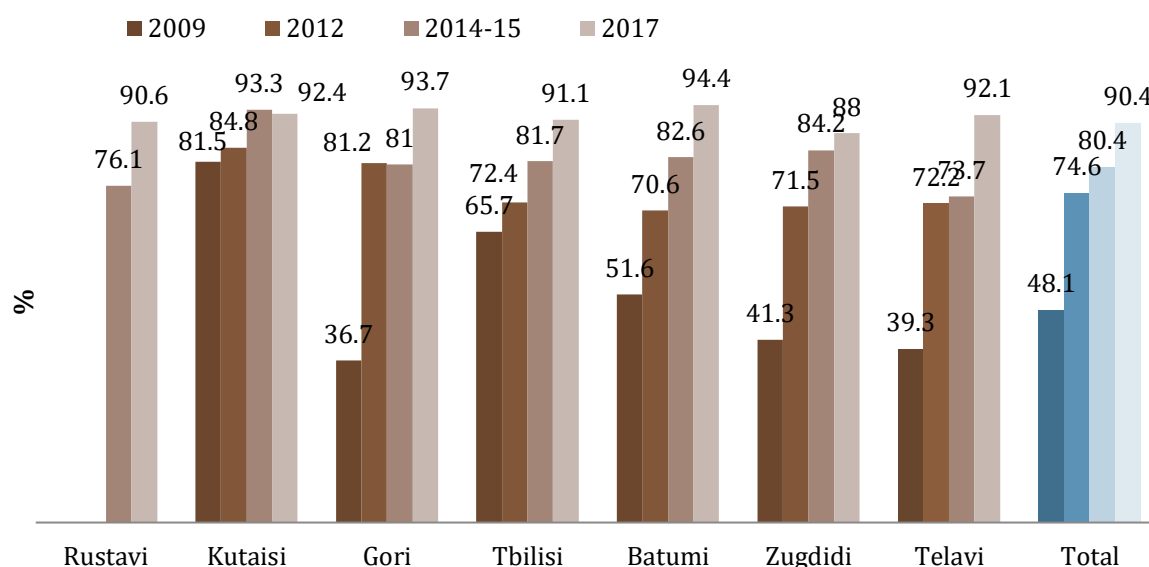
Figure 23: Share paraphernalia at last injection by years, 2009-2012-2015-2017 ¹⁶



¹⁶ City figures: weighted population estimates; Total: unweighted frequency from combined sample

Safe injection practice has improved in all cities. The indicator “safe injection at last injection” is composed of the following indicators: non-usage of previously used injecting equipment by somebody else or him/herself, non-usage of injecting equipment left at a gathering place by somebody else, non-usage of a prefilled syringe by somebody else without his/her presence, non-usage of shared equipment, non-usage of drug solution from a shared container. In order to make it comparable across the years, the indicator – previously self-used injecting equipment – has been removed from the analysis. In all cities PWID have showed an increase in safe injection practices since 2012.

Figure 24: Safe injection at last injection by years, 2009-2012-2015-2017¹⁷



We also analyzed the determinants of risky injection practice. PWID from Zugdidi, Telavi and Rustavi had higher odds of engaging in risky injection behavior compared to Tbilisi residents, while those who had been tested during last year and received their results and those who were covered by preventive programs with minimal coverage were half as likely to share equipment. Age and education did not show any association with the injection behavior, while knowledge of HIV transmission routes and other risk factors were associated with lower odds of unsafe injection. Safe injection practice differed among those who injected several times a week or more often and those who injected less frequently. Frequent injectors were four times more likely to practice unsafe injections ($p < 0.001$). Efedra injection was associated with unsafe injection (OR 1.88; $p < 0.05$), while other drug injections were not associated with increased likelihood of unsafe injection. Interestingly, those who reported receipt of injection equipment during last year were two times more likely to practice unsafe injection compared to those who did not receive injection equipment (OR 1.83; $p < 0.05$). The explanation could be that those who engage in unsafe injection are frequent injectors and tend to use harm reduction services more often to receive injection equipment and thus avoid paying for syringes at pharmacy. In contrast, those who practice safe injections do not inject as frequently and could afford to buy syringes at the pharmacy; therefore, they have less need to get free injecting equipment from harm reduction programs.

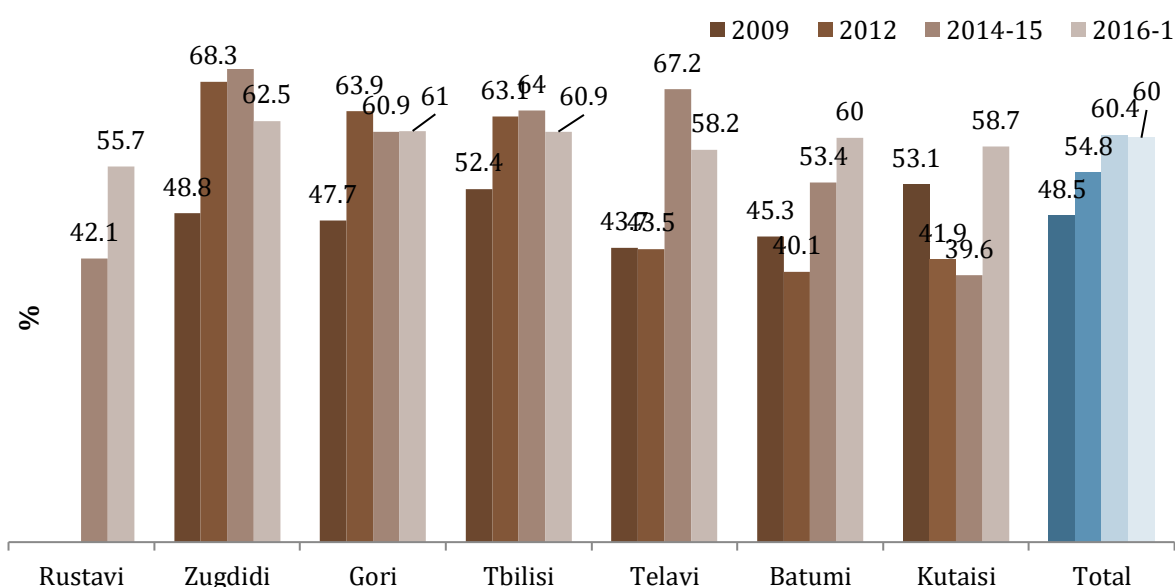
¹⁷ City figures: weighted population estimates; Total: unweighted frequency from combined sample

It is noteworthy that the proportion of PWID who did not use already used injection equipment by themselves increased from 90.4% in 2015 to 94.5% in 2017. This improvement was observed in all locations with the exception of Zugdidi.

Knowledge of HIV/AIDS among PWID remained relatively good. The majority were aware about the main transmission risks associated with injection and sexual behavior. However, misconceptions still existed: for example, about 17% still believed that meal sharing is associated with HIV transmission.

Although exposure to HIV through injection practices was a primary concern, sexual risk factors played an important role in transmission of infection. Almost every second injecting drug user reported having an occasional sexual partner, with a median number of three partners during the last 12 months. Condom use with such partners remained at the same level (60%) since 2015, ranging from 55.7% (Telavi) to 62.5% (Zugdidi). Three cities demonstrated some increase in protective sex with occasional partners. Among those who did not use condoms, about half thought that it was not necessary. There seems to be a gap between knowledge and safe behavior as the majority of PWID who thought that condom use was not necessary in a given occasion also acknowledged that consistent condom use can protect themselves from HIV acquisition. This misconception may be due to the perception that occasional sex partners are not at risk of HIV. A similar pattern was observed in the 2015 study. Male to male sex remains very low in all IBBS rounds.

Figure 25: Condom use with occasional partners at last intercourse, 2009-2012-2015-2017¹⁸

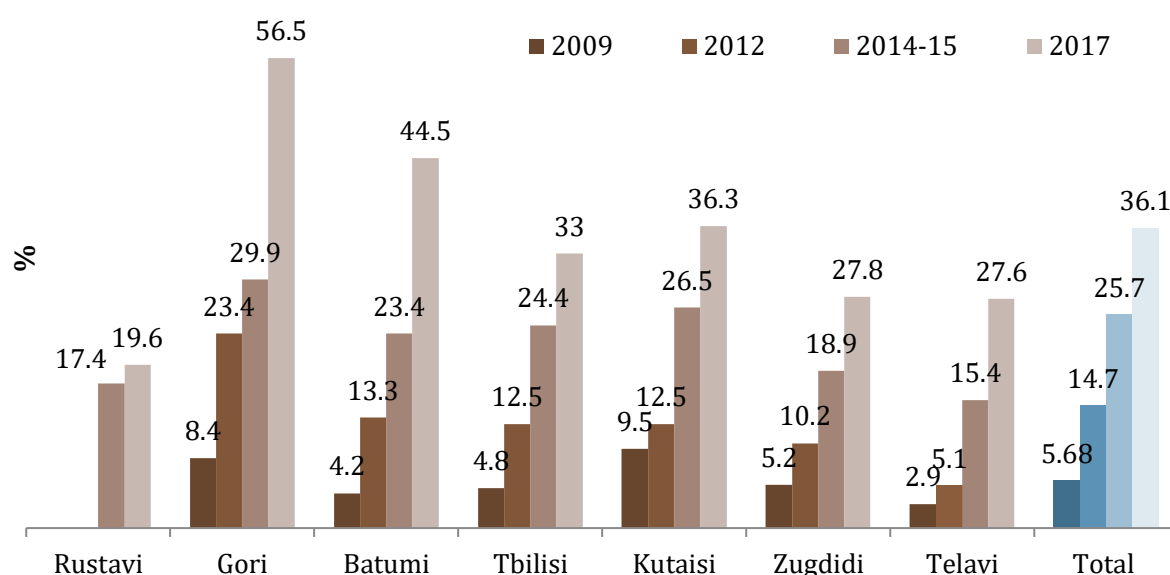


Awareness of HIV status is key to an infection transmission reduction strategy through linking positive individuals to services and through the behavior change that is associated with knowing personal HIV status. Overall, a higher proportion of PWID knew where to go to get an HIV test compared to the previous study (64.5% in 2017 vs. 52.3% in 2015). This improvement was observed in all cities although with wide variances: Gori and Zugdidi showed the highest rates, while Rustavi PWID demonstrated poorest knowledge on possibilities of confidential HIV testing in their city, which indicates the need to intensify awareness campaigns on this issue. A similar

¹⁸ City figures: weighted population estimates; Total: unweighted frequency from combined sample

pattern can be observed when it comes to HIV testing during last 12 months. In general, one in three injecting drug users had been recently tested for HIV and had learned about result. This increase is observed across all cities. However, some difference between the cities is evident, with the highest rates found in Gori, and the lowest in Rustavi. An analysis of the determinants associated with testing showed that those who had practiced unsafe injections last month were half as likely to be tested, while those with higher education, those reached by preventive programs, and Gori residents had higher odds of being tested for HIV. Age and condom use practice were not associated with testing behavior. Those who were tested for HCV during the last two years and those who were tested prior to that were 68 times and 2 times more likely to be tested for HIV, respectively, than those who had never been tested for HCV. This indicates that the Hepatitis C elimination program triggered an increase in HIV testing among PWID.

Figure 26: Tested on HIV last year and know results, 2009-2012-2015-2017¹⁹



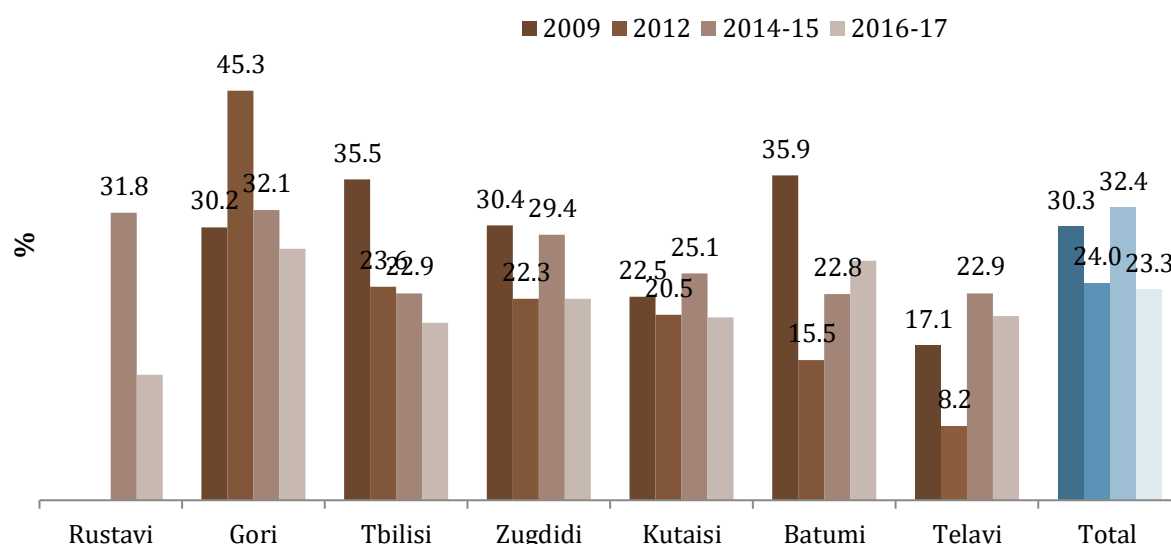
To measure the extent to which PWID are reached with preventive programs, specific core indicators have been developed as part of international reporting. The indicator on preventive program coverage is estimated from two questions: “Do you know where you can go to receive HIV test?” and “In the last 12 months, have you been given sterile injecting equipment and condoms?” Only 16.3% of PWID answered positively to both questions, which is slightly lower than that reported in the previous round. Low coverage measured this way may be explained by PWID not being willing to visit needle and syringe programs to get injecting equipment, as injecting equipment is easily accessible through drug stores (the vast majority of PWID mention drug stores as a primary source of getting sterile equipment). On the other hand, awareness of needle and syringe exchange programs was not satisfactorily high in all areas, with proportions ranging from 31.8% (Tbilisi) to 87.2% (Gori), indicating that there seems to be room for improvement.

Minimal coverage with preventive programs increased from 24% in 2012 to 32.4% in 2015 and dropped to 23.3% in 2017. A statistically significant reduction was observed in two cities such as Zugdidi and Rustavi, while in other cities the difference was not statistically significant. Reach with various preventive program elements such as injecting equipment, condoms, informational material or qualified information differed in the cities. Gori showed almost equal reach with all

¹⁹ City figures: weighted population estimates; Total: unweighted frequency from combined sample

program benefits, while other cities show uneven distribution, indicating that different packages are offered to program beneficiaries.

Figure 27: Program minimal coverage²⁹ 2009-2012-2015-2017²⁰



As mentioned above, awareness of syringe exchange programs slightly improved, but still every second PWID was not aware of needle and syringe exchange programs. Tbilisi had the lowest rating across the cities. Substitution therapy programs were much better known among PWID.

Opioid dependence measured by two different methods showed comparable results, indicating that about one third of problem drug users were opioid dependent. This information should be important for adequate planning of substitution and treatment services in the country.

The study showed that treatment services were not widely accessible to PWID. Only 6.8% underwent any kind of treatment or were still under treatment, which has not changed since the last round. In the majority of cases, drug users relied on themselves or on the help of peers rather than on medical assistance.

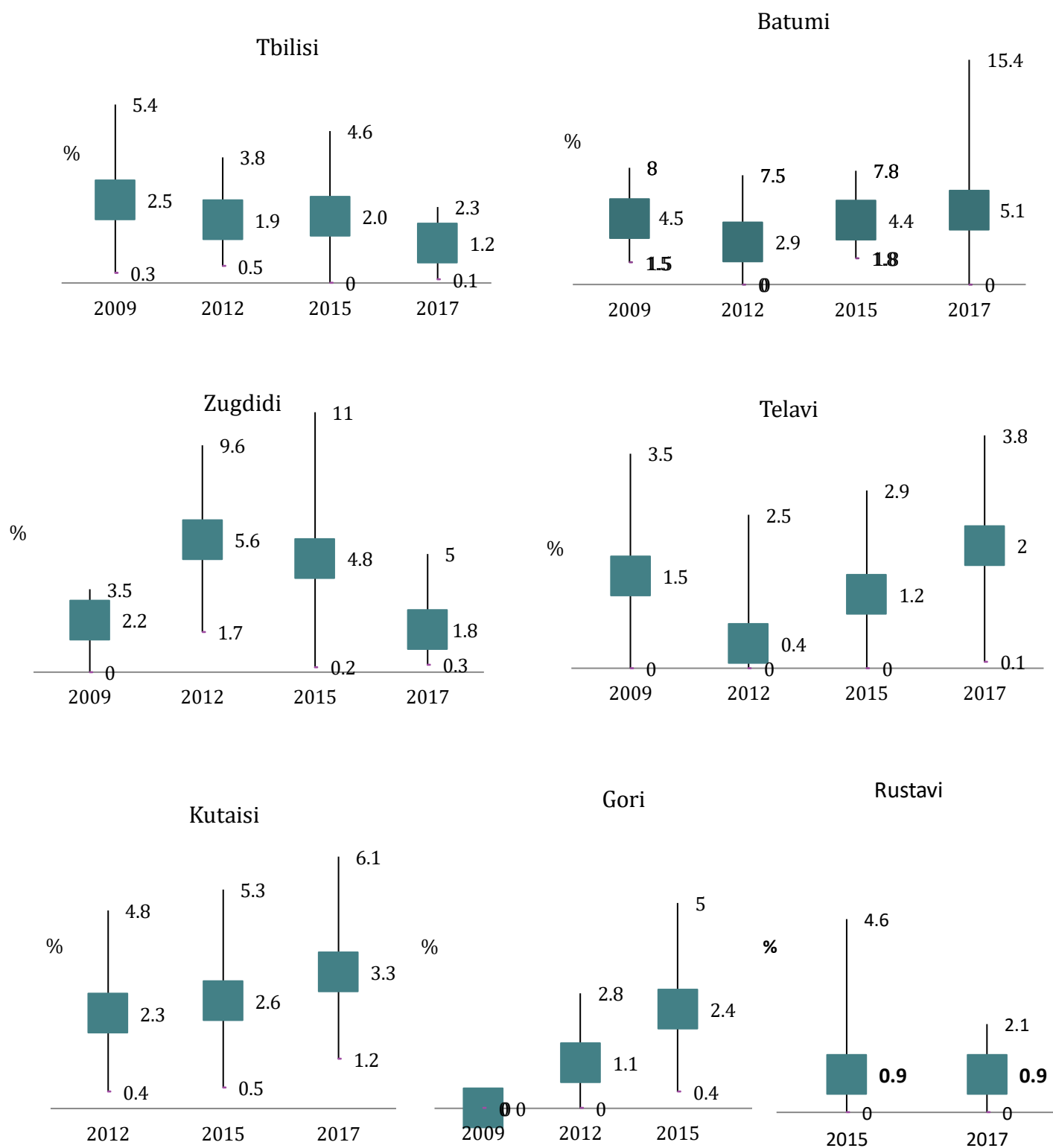
The combined dataset analysis showed that HIV prevalence among PWID is 2.3% (95% CI 1.63-3.12), with no change since 2015, when HIV prevalence was 2.2 (95% CI 1.53-2.99). The study revealed 47 HIV positive individuals, of whom 10% had never been tested before and the same proportion had shared injecting equipment at the last injection.

The HIV prevalence trend across the cities is given in Figure 28.²¹ Small sample sizes of young PWID by cities hampered the calculation of plausible confidence intervals for HIV prevalence in young age groups. The highest prevalence was reported in Batumi, similar to what was observed in 2015; Zugdidi, which had the highest prevalence estimates in the last two rounds, showed reduced prevalence that did not exceed 5% (with the highest boundary) reaching 5%. In other cities, HIV prevalence point estimates remained below 5%. There has been no statistically significant change in prevalence rates since 2015 across all cities. Rustavi demonstrated the lowest HIV prevalence since 2015.

²⁰ City figures: weighted population estimates; Total: unweighted frequency from combined sample

²¹ The figure shows weighted population estimates. Such analysis is performed since 2009 therefore the figure depicts 2009-2017 trends.

Figure 28: Prevalence of HIV by cities, 2009-2017²²



²² Weighted data, population estimates

The prevalence of anti-HCV antibodies, which reflects lifetime exposure to HCV infection, remained high across all cities specifically in Tbilisi, Batumi, Kutaisi and Gori where the prevalence ranges between 65%-75%. High HCV prevalence was found by all previous BBS studies (Dershem (Tbilisi), 2007; Dershem (Batumi) 2007; CIF, 2015). Alarming high HCV rates among PWID in Georgia are an indicator of unsafe injecting behavior practiced by PWID during their injecting career. Luckily, the low prevalence of HIV infection among PWID a decade ago and earlier prevented widespread HIV infection among this key population. With the initiation of Hepatitis C Elimination program in Georgia in 2016, free treatment has been offered to HCV infected individuals countrywide. The current study revealed that, out of the total sample of PWID, 27% had never been tested for HCV, mainly because they considered themselves to be at low risk of contracting infection. Another 22% (449 individuals) self-reported to be HCV negative, based on testing performed sometime during their lifetimes. Interestingly, of these 449 individuals, 36.7% were found to be HCV infected during the study, the majority of whom had been tested during last two years and were found to be negative. This indicates that frequent HCV testing should be offered to PWID.

72% of the PWID who knew that they were HCV infected did not undergo treatment. A number of different reasons were mentioned, including: being on a waiting list; treatment was not recommended by a doctor; fear of potential side effects; and financial barriers associated with treatment. Although Hepatitis C treatment is offered free of charge, some co-payment is required for diagnostic and monitoring tests (average amount 145-250 USD equivalent). In 2016, the Tbilisi mayor's office subsidized co-payments for Tbilisi residents, as well local authorities as in some other cities with a smaller co-share. Since January 2017, the Tbilisi mayor's office has stopped subsidizing co-payments for the Hepatitis C elimination program. As the study showed, financial barriers related to diagnostic and monitoring tests may create obstacles to the expansion of Hepatitis C treatment coverage. Knowledge of the possibilities of HCV testing should be improved.

The study findings re-emphasize the critical need to continue preventive interventions targeting PWID to sustain the gains achieved and to continue to improve results further. The HIV epidemic has been stabilized in PWID, albeit subject to variations between cities (Batumi consistently has the highest rate of HIV prevalence). Unsafe injection behavior is declining; however, engagement in risky practice while injecting specific drugs, and changing behavior while injecting abroad makes PWID vulnerable to HIV infection and HCV re-infection. Risky sexual behaviors increase the bridging role of this population in possible HIV transmission to their sexual partners. Condom use with occasional partners has slightly improved but still remains unsatisfactory, especially in some of the cities; occasional partners are not considered to be potential source of HIV infection. The stabilization of HIV infection and improvement of risky behavior are consequences of the intensive, multi-year work of preventive programs. However, preventive program coverage is not increasing, and indeed is even decreasing in some cities that need special attention. To reach the Hepatitis C elimination program goal, more intensive efforts would be required to expand Hepatitis C testing; to enroll and keep HCV infected individuals in treatment courses; and to prevent subsequent re-infections through harm reduction strategies.

Recommendations

The following recommendations are proposed to address the weaknesses and gaps revealed by the current IBBS study:

Increase the coverage and quality of preventive, treatment and harm reduction services for PWID.

The survey identified a substantial need to:

- Increase the coverage and frequency of HIV and HCV testing and counseling services, through increasing level of awareness among PWID and expanding field outreach activities;
- Increase awareness about needles and syringe exchange programs;
- Increase the coverage and improve the quality of harm reduction services through delivering comprehensive and standardized interventions. Strengthen and expand peer education activities.
- Implement information, education and communication (IEC) interventions to emphasize HIV prevention and drug treatment engagement and seeking needed treatment and support
- Consider targeting young PWIDs. Design specific programs with comprehensive packages with the involvement of young peer educators.
- In preventive messages, re-emphasize the risks associated with injection practices abroad (sharing of injecting equipment with individuals from other network) and promote condom distribution, reemphasizing the necessity of consistent condom use with any sexual partner.
- Design and implement drug-specific interventions primarily for self-made drugs. Reemphasize the dangers associated with psychotropic drug consumption.
- Expand opioid substitution services to improve access for opioid dependent drug users.
- Increase the availability and affordability of rehabilitation and detoxification centers to PWID.
- Intensify preventive interventions in Batumi, Zugdidi, Rustavi and Kutaisi to reduce the grounds for further spread of infection.
- Introduce a competence-enhancement approach to drug abuse prevention in schools, which has proved to be effective in behavior change among youth, in contrast to traditional anti-drug education methods.
- Reduce financial access barriers related to HCV diagnostics and monitoring tests to increase Hepatitis C treatment coverage and adherence to treatment.

Continue with surveillance

- The next IBBS among PWID using RDS should be carried out in these urban areas within the next two-three years.
- Investigate the environmental risk and enabling factors that influence behavior and thus provide insight into HIV prevention.

Annex 1: Data tables - Georgia (all seven cities), Tbilisi, Batumi, Zugdidi

Table 13: Socio - Demographic Characteristics

	GEORGIA		TBILISI		BATUMI		ZUGDIDI	
Socio - Demographic Characteristics	Sample estimates %	N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N
Involvement in previous studies								
Never	63.1	2050	70.1(63.3-76.8)	258/370	66.3(57.4-75.2)	176/280	71.2(64.2-78.1)	188/280
Yes, once	25.0	2050	21.6(15.7-27.7)	82/370	23.3(16-30.7)	65/280	22.1(15.9-28.4)	63/280
Yes, twice	9.5	2050	7.3(3.9-10.6)	26/370	6.8(3.2-10.4)	25/280	6.0(3.0-9.0)	26/280
Yes, three times	2.2	2050	1(0-2.5)	4/370	3.2 (0.6-5.8)	10/280	0.8(0-1.9)	3/280
Yes, four times	0.2	2050	0	0/370	0.3(0-0.7)	4/280	0	0/280
Age								
18 - 24	4.7	2050	2.7 (0.5- 5.1)	11/370	3.9(0.6-7.3)	7/280	2.3(0.1-4.5)	8/280
25 - 30	12.4	2050	6.2(3.1- 9.2)	28/370	7.3(0-17.1)	22/280	22.3(15.6-29)	62/280
31 - 40	27.1	2050	20.4(14.8- 26.1)	87/370	25.0(12.4-37.6)	81/280	27.4(19.9-34.9)	74/280
41 +	55.8	2050	70.6(63.8- 77.4)	244/370	63.7(47.8-79.6)	170/280	47.9(37.7-58.3)	136/280
Mean (min - max) ²³	41.9(18-70)		45.81 (20- 68)		43.40 (23-64)		40.17 (19-70)	
Median	42.00		46.00		44.00		39.00	
Gender								
Male	98.1	2050	97.6 (95.6-99.7)	365/370	96.6 (91.4-101.7)	272/280	97.6(95.5-99.7)	273/280
Female	1.9	2050	2.4 (0.3-4.4)	5/370	3.4 (0-8.6)	8/280	2.4(0.3-4.5)	7/280
Education								
Primary (1-4 class)	0.4	2050	0.5(0-1.2)	1/370	1.2(0-3.1)	2/280	0.6(0-1.5)	1/280
Secondary or vocational school	61.7	2050	39.7(32.3-47.3)	146/370	63.1(48.3-77.1)	177/280	67.4(60.9-74.1)	197/280

²³ Mean and median figures are population estimates, Minimum and maximum figures are sample calculation

	GEORGIA		TBILISI		BATUMI		ZUGDIDI	
Socio - Demographic Characteristics	Sample estimates %	N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N
Incomplete Higher	4.3	2050	6(2.8-9.2)	20/370	7.6(0-19.5)	17/280	5.1(1.7-8.6)	10/280
Higher	33.6	2050	53.8(46.4-61.1)	203/370	29.0(16.6-42.4)	84/280	26.8(20.8-32.7)	72/280
Ethnicity								
Georgian	96.0	2050	95.8(91.5-98.1)	356/370	91.0(78.1-104.1)	258/280	99.6(98.8-100.3)	278/280
Other	4.0	2050	5.2(1.9-8.5)	14/370	9.3(0-22.2)	22/280	0.4(0-1.2)	2/280
IDP status								
Yes	3.5	2050	2.6(0.7-4.5)	7/370	1.3(0-2.6)	3/280	11.2(7-15.3)	30 /280
No	96.5	2050	97.4(95.5-99.3)	363/370	99.4(97.4-100)	277/280	88.8(84.7-93)	250/280
Employment								
Pupil/student	0.8	2050	0.2(0-0.4)	2/370	0.4(0-1.4)	1/280	0	0/280
Have a permanent job	10.3	2050	6.9(3.5-10.3)	26/370	10.9(1.4-20.5)	39/280	7.9 (3.2-12.6)	22/280
Have a temporary job	14.8	2050	9.6(5.7-13.6)	31/370	18.3(7.9-29.7)	47/280	18.9(13.1-24.7)	49/280
Retired/disabled	3.1	2050	6.5(2.7-10.3)	18/370	3.5(0.5-5.5)	7/280	1.2(0-2.5)	5/280
Unemployed	71.0	2050	76.8(70.9-82.6)	293/370	67.3(54.1-80.5)	186/280	72(65-78.9)	203/280
No response	0.1	2050	0	0/370	0	0/280	0.1(0-0.2)	1/280
Monthly income (Gel)								
Less than 100 Gel	14.3	2050	11(7.3-14.7)	68/370	9.0(1.3-16.7)	37/280	4.3(1.7-6.9)	19/280
From 100 up to 300	36.5	2050	43.9(37-50.7)	158/370	27.6(15.3-39.9)	80/280	37.2(30.2-44.2)	109/280
From 300 up to 500	24.8	2050	25.7(19.5-32.1)	83/370	23.6(12.3-35.1)	68/280	31(24.6-37.2)	85/280
From 500 up to 700	13.4	2050	10.6(5.9-15.3)	32/370	18.9(11.9-26.1)	45/280	16(10.3-21.7)	40/280
From 700 up to 1000	6.6	2050	6.2(3.1-9.4)	19/370	10.5(5.5-15.5)	27/280	7.7(3.2-12.2)	18/280
1000 Gel and more	4.2	2050	2(0.2-3.7)	8/370	9.7(0-22.3)	22/280	3.8(1-6.7)	9/280
No response	0.1	2050	0.6(0-1.6)	2/370	0.6(0-1.5)	1/280	0	0/280
Marital status								
Married	45.3	2050	44.3 (37.7-50.7)	160/370	51.5(36.5-66.5)	141/280	39.6 (32.9-46.3)	120/280
Divorced/Separated	24.9	2050	27.8(22.2-33.4)	109/370	25.3(13.3-37.2)	77/280	16.9(11.1-22.8)	48/280
Widower/widow	1.3	2050	1.8(0.1-3.4)	5/370	2.9(0-16.9)	6/280	1.3(0-2.7)	3/280
Never been married	28.5	2050	26.2(20.1-32.4)	96/370	20.3(8-32.6)	56/280	42.2(35.3-48.9)	109/280
Living arrangements								

	GEORGIA		TBILISI		BATUMI		ZUGDIDI	
Socio - Demographic Characteristics	Sample estimates %	N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N
With spouse	44.1	2050	43.6(37-50.3)	158/370	50.2(36.3-63.9)	138/280	38.8(31.8-45.8)	117/280
With partner	1.3	2050	2.2(0-5)	4/370	2.2(0.2-4.3)	5/280	0.4(0-0.9)	3/280
Single	14.1	2050	14.6(9.8-19.3)	51/370	10.6(0.2-19.8)	37/280	13.7(8.7-18.9)	35/280
Live with relative/parents	39.7	2050	38.3(32-44.6)	151/370	35.7(21.2-50.3)	95/280	46.7(39.2-54.1)	124/280
Other	0.8	2050	1.1(0-2.4)	5/370	1.1(0-2.8)	4/280	0.3(0-0.9)	1/280
Refused to answer	0.0	2050	0.1(0-0.4)	1/370	0.2(0-0.5)	1/280	0	0/280
Police and prison experience last 12 months								
Infringement of the law due to drug use during last 12 months	12.4	2050	9.1(5.6-12.7)	36/ 370	10.5(5.3-15.7)	34/280	15.3(9.9-20.8)	44/280
≤ 24 years old	12.4	97	4.3(0-12)	2/11	14.8(0-45.8)	1/7	0	0/8
≥ 25 years old	12.4	1953	9.3(5.6-13)	34/359	10.3(5.2-15.4)	33/273	15.7(10.2-21.3)	44/272
Detained in administrative sentence	9.7	2050	5.5(2.6-8.4)	25/370	9.6(5.2-14.1)	31/280	11.8(7.3-16.2)	34/280
Imprisoned before trial	5.9	2050	4.5(1.8-7.2)	15/370	3.3(0.9-5.8)	11/280	7.9(4.4-11.3)	26/280
Imprisoned	1.1	2050	1.1(0-2.5)	3/370	1.6(0-3.9)	4/280	2(0-4)	5/280
Alcohol consumption during the last month								
Every day	2.4	2050	2.4(0.7-4.2)	12/370	0.7(0-1.6)	2/280	1.4(0.1-2.8)	6/280
More than once a week	20.3	2050	17.8(12.5-23)	77/370	11.4(6.1-16.8)	35/280	18.6(13.2-23.8)	59/280
Once a week	12.8	2050	9.5(5.8-13.1)	35/370	11.8(6.1-17.4)	38/280	11(7.1-14.9)	39/280
Less than once a week	33.4	2050	29.5(23.7-35.3)	102/370	35.5(21.5-49.4)	104/280	39.8(32.5-47.5)	97/280
Never	31.1	2050	40.8(34.7-47.1)	144/370	40.8(25.6-55.8)	101/280	29.1(22.3-35.8)	79/280

Table 14: Drug use history

	GEORGIA		TBILISI		BATUMI		ZUGDIDI	
Drug using behavior	Sample estimates %	N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N
Age when first used drugs								
<15	22.7	2050	21.6(16.5-26.7)	100/370	23.1(11.1-35.9)	79/280	19.9(14.4-25.6)	64/280
15 – 19	64.7	2050	66(60.1-71.8)	236/370	64.4(52.9-77.0)	171/280	66.8(60.2-73.3)	177/280
20 – 24	9.9	2050	7.3(4.2-10.5)	23/370	10.1(5.3-15.8)	25/280	10.5(6.5-14.5)	32/280
25+	2.7	2050	5(2.8-8.2)	11/370	2.4(0.1-4.7)	5/280	2.8(1.2-4.4)	7/280
Mean (min - max)23	16.42(9-34)		16.55 (9-34)		16.37 (9-30)		16.60 (10-31)	
Median	16.00		16.00		16.00		16.00	
Age when first injected drugs								
<15	4.0	2050	5.9(2.3-7.1)	20/370	2.8(0.3-5.3)	13/280	1.6(0.3-2.9)	9/280
15 - 19	49.3	2050	55.7(48.1-61.2)	215/370	46.5(33.7-60.5)	137/280	50(42.7-57.2)	143/280
20 - 24	33.5	2050	27.1(21.4-33.1)	97/370	40.1(25.5-54.3)	101/280	33.8(27-40.5)	90/280
25+	13.3	2050	14.9(9.5-18.3)	38/370	10.7(6.6-15.4)	29/280	14.6(8.9-20.5)	38/280
Mean (min - max)23	19.93(12-40)		19.69 (13-37)		19.93 (12-40)		19.95(12-40)	
Median	19.00		19.0		20.00		19.00	
Duration of injecting drugs from first injection in years								
Mean (min - max)23	21.96(0-54)		19.69 (2-51)		23.45 (1-47)		20.21 (0-51)	
Median	23.00		19.00		24.00		20.00	
Thinks he/she is addicted to drug								
I'm addicted	90.6	2050	92(89.2-95.5)	347/370	92.5(80.1-105)	260/280	88.9(84.3-93.6)	252/280
I'm not addicted/don't think I'm depending	9.3	2050	8.9(4.5-11.5)	23/370	7.5(0-20)	20/280	10.5(5.9-15)	27/280
No response	0.1	2050	0	0/370	0	0/280	0.6(0-1.5)	1/280
Duration of drug addiction in years								
Mean (min - max)23	18.65(1-45)		21.60 (1-45)		19.22(1-45)		16.40(1-45)	
Median	20.00		20.00		20.00		17.00	

Table 15: Drug use risk behavior

	GEORGIA		TBILISI		BATUMI		ZUGDIDI	
Drug using behavior	Sample estimates %	N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N
Frequency of injecting drug use last month								
Once a month	12.3	2050	8.2(4.7-11.8)	27/370	13.7(7.9-19.6)	29/280	10.2(5.8-14.7)	27/280
Several times a month	45.0	2050	45.3(39-51.7)	158/370	45.2(34.7-55.7)	116/280	48.2(41.4-55)	121/280
Once a week	13.0	2050	14(8.8-19.1)	42/370	17(5-29)	45/280	15.7(10-21.2)	48/280
Several times a week	24.8	2050	25.4(20.1-30.6)	110/370	16.9(7.6-26.1)	69/280	23(16.8-29.3)	73/280
Once a day	2.7	2050	4.4(1.7-7)	18/370	6.6(1.9-11.3)	15/280	2(0.1-3.9)	7/280
Several times a day	2.2	2050	2.7(1-4.4)	15/370	0.6(0-2.7)	6/280	0.9(0-1.8)	4/280
Member of regular injecting group								
Yes	62.3	2050	67.3 (60.5- 74.2)	258/370	54.5(38.2-70.6)	165/280	62.7(55.9-69.7)	175/280
Mean # of injecting group members (min-max) ²³	3.92(1-15)		3.36 (1-10)		3.39 (1-10)		3.72 (1-10)	
Consumed drugs last month (drug groups)								
CNS depressants	55.0	1698	61.1 (54.2-67.9)	211/328	66(54.3-77.6)	148/218	56.9(49.5-64.4)	130/225
CNS stimulant	0.9	1698	0.8(0-1.8)	3/328	2.6(0-10.3)	6/218	0.1(0-0.3)	1/225
Narcotic analgetics	7.1	1698	6(2.8-9.2)	20/328	12.9(7.1-18.6)	28/218	4.2(1.1-7.2)	10/225
Hallucinogens	80.4	1698	74(67.8-80.2)	255/328	60.1(47.6-72.5)	132/218	74.5(66.9-81.9)	178/225
New psychoactive substances	17.4	169	19.1(13.6-24.5)	76/328	6.5(1.7-11.4)	18/218	9.3(5.1-13.4)	23/225
Other psychoactive substances	0	1698	0	0/328	0	0/218	0	0/225
Combination	6.0	1698	7.3(3.6-10.8)	36/328	2.9(0.2-5.6)	8/218	4.5(0.1-7.8)	12/225
Mean # of drugs used ²³	1.61(1-4)		1.61 (1-4)		1.48(1-3)		1.45 (1-4)	
Injected drugs last month (drug groups)								
CNS depressants	4.1	2050	5.6(2.5-8.8)	23/370	4.2(1.1-7.4)	19/280	1.8(0.3-3.3)	12/280
CNS stimulant	28.0	2050	57.1(49.1-65.1)	219/370	8.6(0-18.9)	28/280	26(2-31.8)	70/280
Narcotic analgetics	90.1	2050	75.8(70.2-81.4)	289/370	98.8(97-100.5)	277/280	89.7(85.4-94)	260/280
New psychoactive substances	1.2	2050	2.9(1-4.8)	15/370	3.6(0.4-1.1)	1/280	0.5(0-1.2)	2/280
Other psychoactive substances	0.1	2050	0	0/370	0	0/280	0	0/280
Combination	2.5	2050	3(0-6.2)	14/370	3.3(0.4-6.2)	13/280	0.2(0.1-0.4)	4/280

	GEORGIA		TBILISI		BATUMI		ZUGDIDI	
Drug using behavior	Sample estimates %	N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N
Mean # of drugs injected	2.24(1-4)		1.41 (1-3)		1.12 (1-3)		1.18 (1-3)	
Injected drugs last month (selected drugs)								
Heroin	47.4	2050	33.6 (26.9-40.2)	133/370	34.2(18.9-49.5)	103/280	49.6(42.7-56.7)	161/280
Buprenorphine (Subutex, Suboxon)	48.7	2050	41.6(34.6-48.6)	174/370	73.2(63.3-83.1)	214/280	33.9(26.4-41.2)	95/280
Methamphetamine (Vint)	5.5	2050	10.6(6.3-14.9)	42/370	2.8(0.5-5.1)	8/280	5.3(1.5-9.2)	12/280
Methcathinone (Jeff)	0.2	2050	0.1(0-4.1)	1/370	0	0/280	0.1(0-0.2)	1/280
Morphine	4.0	2050	2.7(0.4-4.9)	8/370	3.3(0.5-6.2)	6/280	3(0.6-5.5)	6/280
Desomorphine	2.9	2050	0.4(0.1-0.7)	5/370	0.4(0-1)	1/280	9(4.4-13.5)	25/280
Ephedra (tsitsvebi)	20.0	2050	40.4(32.8-47.9)	166/370	2.5(0.1-4.9)	9/280	17.9(12.5-23.3)	49/280
Methadone	10.1	2050	16.8(11.6-22.0)	62/370	6.2(2.7-9.8)	20/280	20.7(15.0-26.4)	65/280
Injecting frequency of narcotic analgetics during last 12 months								
Narcotic analgetics injections	93.0	2050	79.8(74.5-85.2)	308/370	100	280/280	90.3(86.5-94.2)	261/280
One month and more	20.5	1906	24.4(18.7-30.1)	79/308	21.9(9.2-34.8)	66/280	20.5(14.2-26.8)	70/261
More than one week and several times in the year	13.4	1906	12.8(8.8-16.8)	58/308	9.6(4.8-14.4)	32/280	17.1(11.9-22.2)	49/261
Withdrawals caused by easing narcotic analgetics usage or dosage reduction								
I haven't stopped	12.0	644	8.9(0.7-17)	8/137	31(16.4-45.7)	29/97	6.6(5.4-8)	6/119
yes	84.6	644	87.2(78.7-95.6)	123/137	63.7(46.3-80.9)	64/97	91.3(89-93.7)	107/119
no	3.3	644	4(0.3-7.7)	6/137	5.3(0-11.8)	4/97	1.7(0-3.6)	5/119
No response	0.2	644	0	0/137	0	0/97	0.3(0-0.7)	1/119
Ever shared used needle/syringe/other injecting equipment								
Yes	60.3	2050	62.1(56-68.4)	234/370	50.8(36.2-65.2)	145/280	70 (63.7-76.3)	203/280
No	36.5	2050	35.3(29.1-41.4)	124/370	47.7(33.4-62.1)	128/280	28.5 (22.2-34.9)	72/280
Don't know	3.1	2050	2.6 (0.7-4.4)	12/370	1.5(0-3.4)	7/280	1.4 (0-3)	5/280
Used sterile needle/syringe/ other injecting equipment at last injection								
Yes	91.6	2050	92.2(88.6-95.9)	337/370	97.8 (96.3-99.4)	269/280	86.3(81-91.7)	246/280
No	8.4	2050	7.8(4.1-11.5)	33/370	2.2(0.6-3.7)	11/280	13.7(8.7-18.6)	34/288

	GEORGIA		TBILISI		BATUMI		ZUGDIDI	
Drug using behavior	Sample estimates %	N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N
Used previously used by others needle/syringe/ other injecting equipment at last injection								
Yes	2.6	2050	2.2(0.1-4.2)	8/370	0.6(0-1.4)	3/280	6.8 (2.7-10.9)	17/280
No	96.8	2050	97.5 (95.4-99.6)	360/370	99.2(98.4- 100.1)	275/280	92.2 (88-96.4)	260/280
Don't know	0.6	2050	0.3 (0-0.9)	2/370	0.2(0-0.4)	2/280	1 (0-2.3)	3/280
Used previously used by him/herself needle/syringe/ other injecting equipment at last injection								
Yes	5.4	2050	4.7 (2.2-7.2)	22/370	1.4 (0-2.8)	6/280	5.9 (2.3-9.5)	14/280
No	94.5	2050	94.2(91.2-97.3)	346/370	98.6(87.2-100)	274/280	94.1 (90.5-97.8)	266/280
Don't know	0.1	2050	1.1 (0-2.6)	2/370	0	0/280	0	0/280
Used needle/syringe / other injecting equipment left at a place of gathering by somebody else at last injection								
Yes	0.8	2050	0	0/370	0.3 (0-0.7)	3/280	0.3 (0-0.8)	1/280
No	96.5	2050	96.9(94.6-99.2)	359/370	99.5(99.1-99.9)	275/280	90.9 (87-94.9)	257/280
Don't know	0.1	2050	0	0/370	0.1(0-0.3)	1/280	0	0/280
No Response	2.6	2050	3.1(0.8-5.4)	11/370	0.1(0-0.2)	1/280	8.8(4.8-12.7)	22/280
Used pre - filled syringe at last injection								
Yes	0	2050	0	0/370	0	0/280	0.2 (0-0.6)	1/280
No	99.6	2050	98.9(97.6-100)	137/370	100	280/280	99.5 (99-100)	277/280
Don't know	0.4	2050	1.1(0-2.4)	3/370	0	0/280	0.3 (0-0.7)	2/280
Used shared bottle, spoon, boiling pan/ glass/ container, cotton/filter or water at last injection								
Yes	0.9	2050	0.1 (0 -0.3)	1/370	0.9(0-2.2)	4/280	1.6 (0.1-3.1)	5/280
No	98	2050	98.2 (96.5-99.6)	362/370	98.8(97.3-100.3)	275/280	98.4 (96.9-99.8)	274/280
Don't know	1.1	2050	1.8 (0.3-3.4)	7/370	0.4 (0-1)	1/280	0.02 (0-0.01)	1/280
Used solution from the shared container at last injection								
Yes	5.9	2050	6.5 (3.3-9.8)	24/370	3.8(0.6-7)	12/280	5.7 (2.4-8.8)	18/280
No	94.0	2050	93.5 (90.2-96.7)	346/370	96.2(93-99.4)	268/280	94.3 (91.2-97.6)	262/280
Don't know	0.1	2050	0	0/370	0	0/280	0	0/280
Safe injecting practice at last injection								

	GEORGIA		TBILISI		BATUMI		ZUGDIDI	
Drug using behavior	Sample estimates %	N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N
PWID with safe injection practice at last injection ²⁴	80.9	2050	83.5 (78.6-88.4)	306/370	88.1(83-93.2)	241/280	80.6(74.8-86.4)	224/280
≤ 24 years old	74.2	97	97.1 (91.5-103)	9/11	100	7/7	100	8/8
≥ 25 years old	81.3	1953	83.1 (78.1-88.2)	297/359	87.7 (82.4-92.9)	234/273	80.2(74.9-85.4)	216/272
PWID with safe injection practice at last injection_2 (excludes self-used syringe use) ²⁵	90.4	2050	91.1(87.6-94.7)	335/370	94.4(90.7-98.1)	260/280	88(83.4-92.6)	244/288
≤ 24 years old	82.5	97	99.8(99.6-100.1)	10/11	100	7/7	100	8/8
≥ 25 years old	90.8	1953	90.9(87-94.9)	325/359	94.2(90.1-98.2)	253/273	87.7(83.1-92.3)	236/272
Last month sterile injecting equipment use								
Never used previously used injecting equipment by others or him/herself	85.8	2050	90.1(86.3-93.8)	324/370	91(86.5-95.5)	353/280	80.1(74.8-85.4)	221/280
Never used injecting equipment used by others	93.7	2050	96.5(94.6-98.4)	353/370	95.8(93.3-98.3)	267/280	88.7 (84.6-92.9)	248/280
Never used injecting equipment used by him/herself	87.4	2050	90.6(86.9-94.2)	328/370	92.6(88.6-96.8)	258/280	83.2(78.0-88.3)	229/280
Last month injecting equipment shared with								
Regular sexual partner	2.1	187	15.9(0-39.8)	2/18	0	0/27	5.8(0-9.9)	2/32

²⁴ No usage of needle/syringe previously used by somebody else or him/herself, no usage of needle/syringe left at a place of gathering, not usage of syringe prefilled by somebody else without his presence, not usage of syringe filled from previously used syringe, no usage of possibly contaminated shared equipment (container, cotton, filter, water), no usage of drug solution from shared container prepared without his/her presence.

²⁵ No usage of needle/syringe previously used by somebody else, no usage of needle/syringe left at a place of gathering, no usage of syringe prefilled by somebody else without his presence, no usage of shared equipment, no usage of drug solution from shared container prepared without his/her presence.

	GEORGIA		TBILISI		BATUMI		ZUGDIDI	
Drug using behavior	Sample estimates %	N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N
Sex partner who you didn't know before	0	187	0	0/18	0	0/27	0	0/32
Drug related friend	24.6	187	23.6(1.5-45.7)	5/18	6.6(6.4-6.4)	3/27	53.1(32.5-73.7)	16/32
Drug trafficker	0.5	187	0	0/18	4(3.7-4.4)	1/27	0	0/32
Stranger	3.7	187	3.7(0-10.1)	1/18	6.1(6-6)	2/27	6.1(6.0-6.2)	3/32
Friend	17.1	187	28.1(2.6-53.6)	5/18	14.7(14.8-14.8)	3/27	38.2(22.2-54.4)	11/32
Number of injecting partners last month								
Mean # of needle sharing partners among all (min-max) ²⁶	0.15 (0-10)	2003	0.07(0-10)	368	0.12(0-7)	271	0.28(0-6)	279
Mean # of needle sharing partners among those who shared last month	2.12(0-10)	140	2.38(0-10)	16	1.85(0-7)	18	2.55(0-6)	31
Cleaning the needle/syringe before usage								
Always	74.9	291	68.4(52.6-84.3)	30/46	70.6(60.2-81.2)	18/27	84.3(79.9-88.5)	49/59
Almost always	2.4	291	0	0/46	2.1(2-2)	1/27	2.5(0-5.4)	2/59
Sometimes	4.1	291	1.3 (0-5)	2/46	12.7(12.8-12.8)	3/27	4.7(1.2-8.2)	4/59
Once	3.8	291	4.8(4.8-4.8)	1/46	6.7(0-16.1)	1/27	4.9(5-5.1)	2/59
Never	14.1	291	22(6.9-37)	12/46	8(1.6-13.9)	4/27	3.6(3.5-3.6)	2/59
Don't know	0.7	291	3.6(0-9.1)	1/46	0	0/27	0	0/59
Methods used to clean the used needle/syringe								
Water (boiled and non-boiled)	94.8	248	98.2 (98.2-98.2)	31/33	95.7(95.6-95.6)	22/23	96.4(90.0-102)	55/57
Disinfecting solution and chlorine	0	248	0	0/33	0	0/23	0	0/57
Boiling the needles/syringes	0	248	0	0/33	0	0/23	0	0/57

²⁶ Don't know and no response regarded as missing cases and not included in the analysis.

	GEORGIA		TBILISI		BATUMI		ZUGDIDI	
Drug using behavior	Sample estimates %	N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N
Other	8.9	248	6.6(6.6-6.6)	3/33	10.4(10.3-10.3)	3/23	8.4(0-24.3)	5/57
Frequency of giving the used needle/ syringe to others last month								
Always	0.1	2050	0	0/370	0	0/280	0.2(0-0.5)	1/280
Almost always	0.3	2050	0	0/370	0.4(0-1.1)	1/280	0.4(0-1)	2/280
Sometimes	2.6	2050	1.6(0.1-3.2)	7/370	1.5(0.2-2.8)	5/280	6.3(2.7-9.8)	17/280
Once	2.0	2050	1.6(0-3.3)	5/370	1.9(0.2-3.6)	6/280	4.4(1.6-7.2)	11/280
Never	94.5	2050	96.6(94.3-98.9)	357/370	95.7(93.4-98.1)	266/280	88.6(84.2-93.1)	248/280
Don't know	0.4	2050	0.1 (0-0.4)	1/370	0.4(0-1.2)	2/280	0.1(0-0.3)	1/280
Getting of new and unused needle/syringe when needed								
Yes	96.1	2050	98.8(97.6-100.0)	364/370	98.3(96.5-100.0)	275/280	92.7(88.7-96.7)	261/280
Place to get/buy new (unused) needle/syringe								
Drug store	93.6	1970	98.6(96.9-100.4)	359/364	98.8(97.5-100)	267/275	96.8(93.1-100.4)	252/261
Shop	0	1970	0	0/364	0	0/275	0	0/261
Hospital	0.1	1970	0.4(0-0.9)	1/364	0	0/275	0	0/261
Family/Relatives	1.8	1970	2.2(0.4-3.9)	9/364	0.7(0-2)	3/275	6.8(1.9-11.8)	12/261
Sex partner	0.2	1970	0.7(0-2.1)	1/364	0	0/275	0	0/261
Friends	2.2	1970	6.2(3.1-9.2)	15/364	1.3(0-3.1)	3/275	6.8(2.8-10.8)	13/261
Other injection drug user	30.7	1970	34.5(28-41.1)	128/364	17.3(6.9-27.6)	60/275	30.7(24.1-37.6)	73/261
Drug trafficker	0.8	1970	1(0.2-1.8)	3/364	1(0-2.1)	2/275	1.0(0-2.4)	3/261
Syringe exchange program	32.9	1970	20(14-25.9)	76/364	26.5(17.6-35.5)	74/275	34.2(27.0-41.4)	96/261
Other	0.4	1970	0.3(0.2-0.4)	1/364	0	0/275	1.6(0.5-2.6)	4/261
Injected in other locations in last 12 months								
Other cities in Georgia	56.6	2050	29(23.1-34.8)	132/370	38.2(23.9-52.6)	117/280	59.4 (52.8-65.9)	181/280
Other countries outside of Georgia	33.9	2050	16.3(12-20.6)	59/370	52.1(40.4-63.9)	154/280	38.2(32.0-44.5)	113/280
Used shared injecting equipment in other locations								
Other cities in Georgia	4.3	1160	2.6(0-5.9)	4/132	3.3(0.3-6.2)	6/117	5.4(1.3-9.4)	13/181
Other countries outside of Georgia	11.9	695	9.7(0.4-19.1)	5/59	6.7(2-11.2)	12/154	19.5(10.5-28.2)	27/113

	GEORGIA		TBILISI		BATUMI		ZUGDIDI	
Drug using behavior	Sample estimates %	N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N
Other locations (cities or counties)	8.3	1386	6(0.7-11.4)	8/157	6.4(2.4-10.3)	15/190	13(6.5-19.4)	33/205
Both (cities and counties)	4.2	1386	2.1(0-4.4)	4/157	2(0-4.1)	7/190	5.0(1.5-8.5)	14/205
Overdoses experience last year								
Yes	6.1	2050	2.3(0.7-3.9)	18/370	1.6(0.2-3.1)	8/280	7.5(4.4-10.7)	30/280
Usual place of gathering to take drugs								
(flat)	83.8	2050	90.7(87.5-94.1)	325/370	82.9(71.2-94.6)	225/280	74.7(68.7-80.5)	193/280
Method of throwing away used needle								
(garbage bin)	55.8	2050	62.7(57-68.3)	197/370	69.5(57.3-81.8)	173/280	58.4 (51.4-65.4)	136/280

Table 16: Sexual behavior

	GEORGIA		TBILISI		BATUMI		ZUGDIDI	
Sexual history	Population estimates %	N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N
Sexual behavior								
Median age at first sexual contact ²³	16.00	2048	16.00	370	16.00	280	16.00	279
Had sex in the last 12 months	89.3	2050	89.1(84.6-93.6)	335/370	85.9(73.5-98.3)	241/280	90.0(86.6-95.2)	254/280
Condom use at last intercourse								
Used condom at last intercourse	36.5	1831	34.7 (28.1-41.2)	111/335	35.4(26.5-44.4)	86/241	40.4(32.3-48.9)	94/254
≤ 24 years old	68.8	96	41.5(3.8-78.8)	5/11	54.5(0-110.7)	5/7	82.1(51-112)	6/8
≥ 25 years old	34.7	1735	34.5(28.2-40.8)	106/324	34.5(25.9-43.1)	81/234	39.3(31.2-47.4)	88/246
Regular sex partner last 12 months								
Had regular sex partner	74.1	2050	77.3(71.1-83.4)	287/370	71.3(56.9-85.6)	195/280	72.2(66.3-78.1)	203/280

	GEORGIA		TBILISI		BATUMI		ZUGDIDI	
Sexual history	Population estimates %	N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N
Mean (min – max)23	1.26 (1-10)	1519	1.07(1-5)	287	1.00 (1-5)	195	1.12(1-6)	203
Median	1.00		1.00		1.00		1.00	
Used condom at last intercourse	25.8	1519	26.2(20.1-32.4)	71/287	28.8(20.8-37)	52/195	27.8(20-35.5)	48/203
≤ 24 years old	52.1	64	9.6(0-34.8)	1/6	47.4(0-109.2)	3/5	66.7(10.0-120.1)	3/5
≥ 25 years old	24.6	1455	26.6(20.3-32.8)	70/281	28(20-36.1)	49/190	27.1(19.1-35.3)	45/198
Occasional sex partner(s) last 12 months								
Had occasional sex partner last year	43.1	2050	34.6(28.7-40.4)	136/370	32.7(19.2-46.2)	114/180	43.8(36.8-50.7)	138/280
Mean (min – max)23	4.57 (1-40)	884	2.77(1-20)	136	4.63 (1-40)	114	5.41(1-40)	138
Median	3.00		2.00		3.00		3.00	
Used condom at last intercourse	60.0	884	60.9(50.1-71.7)	88/136	60 (48.3-71.9)	67/114	62.5(51.9-73.4)	83/138
≤ 24 years old	74.6	71	78.7(46.1-115)	6/8	98.3(95.2-102.2)	4/5	93.6(80.9-107.1)	5/6
≥ 25 years old	60.0	813	59.8(47.6-72)	82/128	58.1 (45.8-70.2)	63/109	61.3(50.3-72.5)	78/132
Paid sex partner(s) last 12 months								
Had paid sex partner last year	20.4	2050	12.5(8-17)	52/370	17.5(6.4-28.7)	55/280	27.2(21.1-33.3)	86/280
Mean (min – max)23	4.68(1-50)	419	4.22(1-40)	52	3.36(1-15)	55	5.63 (1-50)	86
Median	3.00		2.00		3.00		3.00	
Used condom at last intercourse	86.2	419	97.7(93.4-102)	48/52	72.4(59.8-85)	42/55	85.8(72-99.7)	72/86
≤ 24 years old	83.9	31	92.6(60.2-125.6)	3/4	100	1/1	91.3(69.4-115.6)	2/3
≥ 25 years old	86.3	388	98(97.5-98.4)	45/48	71.5(58.7-84.1)	41/54	85.7(78.8-92.5)	70/83
Married IDUs paid/occasional sex partners last 12 months								
Had occasional sex partners last year	35.3	884	32.6(23.5-41.8)	39/136	37.5(26.4-48.6)	44/114	35(23.2-46.6)	53/138

	GEORGIA		TBILISI		BATUMI		ZUGDIDI	
Sexual history	Population estimates %	N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N
Had paid sex partners last year	29.4	419	19.1(19.1-19.1)	12/52	28.3(11-45.4)	17/55	27.5(12.4-42.5)	24/86
Man had male sex partner								
Ever had male sex partner	1.2	2011	0.4(0-0.9)	2/365	4(1-7.1)	9/272	0.6 (0-1.4)	2/273
Had male sex partner last year	0.1	2011	0.3(0-0.7)	1/365	0.2(0-0.5)	1/272	0	0/273
Used condom with male partners at last intercourse	50.0	2	100	1/1	100	1/1	0	0
Reasons for not using condom at last intercourse with occasional partner								
Don't like it	36.7	354	49(34-63.9)	23/48	39.9(24-55.6)	19/47	45.6(26.9-64.6)	22/55
Didn't think necessary	51.4	354	48.4(32.2-64.5)	22/48	45.2(31.2-59.5)	20/47	45(16.8-73)	26/55
Frequency of using condom with regular partner last year								
Always	6.3	1519	13.7(8.5-19)	33/287	9.5(4.3-14.7)	17/195	12.5(4.8-20.1)	18/203
Never	37.3	1519	56.4(49.4-63.4)	166/287	59.5(49.0-69.9)	119/195	58.9(50.7-67.2)	129/203
Frequency of using condom with occasional partner last year								
Always	43.8	884	48.6(36.9-60.2)	67/136	42.1(29.8-54.3)	51/114	38.8(27.9-49.7)	55/138
Never	19.0	884	18.6(10-27.3)	23/136	21.5(12.9-30)	24/114	12.7(6.6-18.8)	16/138
Frequency of using condom with paid for sex partner last year								
Always	77.3	419	91.7(89.7-93.8)	45/52	62(48-75.6)	37/55	69.6(51.5-87.8)	59/86
Never	6.7	419	1.5(1.5-1.5)	2/52	11.7(4.6-18.9)	6/55	7.7(6.2-9.3)	5/86
Anal sex last 12 months								
Anal intercourse with any sexual partner last 12 months (yes)	4.6	2050	4(1.8-6.2)	19/370	4.3(1.2-7.4)	12/280	5.8(2.5-9.1)	16/280
Condom use during anal intercourse (yes)	43.6	94	51.4(31.1-71.7)	7/19	63.7(41-87)	6/12	34.1(11.6-56.7)	5/16
Sex partner is IDU								

	GEORGIA		TBILISI		BATUMI		ZUGDIDI	
Sexual history	Population estimates %	N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N
Regular sex partner is an injecting drug user (yes)	2.4	1519	4.1(0.6-7.6)	13/287	2.2(0-4.8)	4/195	4.5(0.8-8.1)	9/203
Occasional sex partner is an injecting drug user (yes)	6.4	884	13(5.7-20.4)	18/136	8.5(3.1-13.8)	8/114	3.6(0-7.1)	6/138
Paid sex partner is an injecting drug user (yes)	4.3	419	9.6(0-19.2)	4/52	4.6(3.6-5.7)	2/55	3.6(0-8.8)	3/86

Table 17: Knowledge of HIV/AIDS and risk assessment

	GEORGIA		TBILISI		BATUMI		ZUGDIDI	
Knowledge of HIV/AIDS	Population estimates %	N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N
HIV/AIDS awareness								
Yes	99.8	2050	100 (100-100.1)	369/370	100	280/280	99.4(98.5-100.3)	279/280
Knowledge of someone who is HIV infected, ill, or died of AIDS (yes)	49.2	2045	49.1(42.1-56.2)	192/369	48.7(36.2-61.2)	166/280	56.2(49.2-63)	173/280
One may reduce HIV risk by having one uninfected and reliable partner (yes)	97.9	2050	98.6(97.5-99.8)	360/370	99(97.7-100.3)	275/280	98.1(96.4-99.7)	274/280
One can reduce HIV risk if one properly uses condoms during every sexual contact (yes)	96.7	2050	96.6(94.4-98.8)	352/350	98(95.8-100.2)	273/280	97.3(95.6-99)	271/280
A healthy-looking person can have HIV (yes)	94.5	2050	92.2(88.7-95.7)	338/370	96.2(93.6-98.9)	269/280	95.5(92.7-98.4)	270/280

	GEORGIA		TBILISI		BATUMI		ZUGDIDI	
Knowledge of HIV/AIDS	Population estimates %	N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N
One can get HIV as a result of a mosquito bite (no)	47.2	2050	50.5(43.7-57.3)	182/370	54.4(42.1-66.8)	145/280	53.7(46.2-60.9)	146/280
One can get HIV by sharing meal with someone who is infected (no)	82.9	2050	87(82.7-91.2)	313/370	85.9(80.7-91.2)	240/280	80.2(74.3-86.2)	230/280
One may be infected with HIV by using a needle/syringe already used by someone else (yes)	99.0	2050	99.1(98.1-100.1)	366/370	98.8(97-100.6)	278/280	97.5(95.6-99.5)	276/280
One may be infected with HIV by using a shared bottle, spoon, boiling pan/glass/container, cotton/filter or water (yes)	98.2	2050	98.6(97.6-100)	363/370	97.2(94.6-99.8)	274/280	98(96.3-99.7)	274/280
One may be infected with HIV by using solution from the shared container which was prepared without his/her presence (yes)	98.5	2050	98.8(97.5-100)	365/370	98.2(96.3-100.1)	276/280	97(94.6-99.4)	271/280
Drug users may protect themselves by switching to non-injection drugs (yes)	97.8	2050	98(96.6-99.5)	359/370	97(94.2-99.7)	275/280	95.5(92.5-98.5)	267/280
HIV/AIDS infected woman can transfer the virus to her fetus or baby (yes)	70.3	2050	71.5(65.6-77.5)	250/370	69.6(57.7-81.6)	196/280	69.4(62.7-76.3)	199/280
IDUs correctly identifying ways of preventing and transmitting	43.0	2050	45.2(38.7-51.6)	162/370	52.2(37.7-66.7)	137/280	49.7(42.2-57.1)	136/280

	GEORGIA		TBILISI		BATUMI		ZUGDIDI	
Knowledge of HIV/AIDS	Population estimates %	N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N
HIV (Answers 5 GAM indicator questions correctly) ²⁷								
≤ 24 years old	33.0	97	35(0-71.5)	2/11	59.6(9-109.5)	2/7	56.9(26.8-89.2)	3/8
≥ 25 years old	43.5	1953	45.5 (39-51.9)	160/359	51.9(38-66)	135/273	49.6(41.9-57.1)	133/272
IDUs correctly identifying ways of preventing and transmitting HIV (Answers 7 National indicator questions correctly) ²⁸	89.9	2050	88.2(84.3-92.2)	319/370	93 (89.1-96.3)	259/280	89.3(85.1-93.6)	249/280
≤ 24 years old	88.7	97	100	11/11	91 (67.9-114)	6/7	100	8/8
≥ 25 years old	89.9	1953	87.9(83.8-92)	308/359	93.1 (89-97.2)	253/273	89.1(84.6-93.5)	241/272
Knows possibility of confidential HIV testing in his/her city								
Yes	74.9	2050	77.6(71.4-83.7)	296/370	68.4(52.7-84.1)	211/280	74(67.9-80.2)	215/280
No	25.1	2050	22.4(16.3-28.6)	74/370	31.6(15.9-47.3)	69/280	26(19.8-32.1)	65/280
Knows where HIV testing can be done								
Yes	64.5	2050	60.2(52.6-67.7)	224/370	64.3(48.7-79.8)	190/280	75.3(69.1-81.4)	205/280
No	35.5	2050	39.8(32.3-47.4)	146/357	35.7(20.2-51.3)	90/280	24.7(18.6-31)	75/280
Voluntary HIV testing								
During the last year	36.1	2050	30.9(24.1-37.8)	121/370	44.7(32-57.2)	123/280	27.7(21.4-34.2)	84/280
From one to two years period	8.5	2050	11.9(7.7-16)	42/370	5.7(2-9.3)	20/280	9(5-12.9)	22/280

²⁷ One may protect oneself from HIV/AIDS by having one uninfected and reliable sexual partner; Can reduce the HIV risk if one properly uses condoms during every sexual contact; A healthy looking person can be infected with HIV; No one can get HIV as a result of a mosquito bite; No one can get HIV by taking food or drink with an infected person.

²⁸ One may protect oneself from HIV/AIDS by having one uninfected and reliable sexual partner; Can reduce the HIV risk if one properly uses condoms during every sexual contact; A healthy looking person can be infected with HIV; One may be infected with HIV/AIDS by using a needle already used by someone else; One may be infected with HIV/AIDS by using bottle, spoon, boiling pan/glass, container, cotton/filter or water where might been touched needle already used by someone else; One may be infected with HIV/AIDS by taking solution from the shared container; Drug users may protect themselves from HIV/AIDS by switching to non-injection drugs.

	GEORGIA		TBILISI		BATUMI		ZUGDIDI	
Knowledge of HIV/AIDS	Population estimates %	N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N
Two years ago	20.6	2050	22.8(17.5-28)	86/370	20.8(10.4-31.3)	59/280	22.6(16.5-28.7)	61/280
Never been tested	34.6	2050	34.1(26.7-41.5)	120/370	28.4(16.1-40.8)	77/280	40.7(33.6-47.6)	113/280
Do not remember	0.2	2050	0.4(0-0.9)	1/370	0.4(0-1.1)	1/280	0	0/280
HIV testing during the last year								
Received HIV test last year and know their results	36.1	2050	33 (24.3-38)	121/370	44.5(31.9-57.4)	123/280	27.8(21.6-34.1)	84/280
≤ 24 years old	11.3	97	19 (0-48.8)	2/11	50.5(0-102.2)	2/7	4.4(0-14.3)	1/8
≥ 25 years old	37.3	1953	31.3 (24.4-38.2)	119/359	44.4(30.8-58.1)	121/273	28.3(21.6-35.1)	83/272
Informing others of HIV positive status								
Informing sex partner on HIV positive status (yes)	92.3	2050	91.8(88.4-95.3)	343/370	90.3(85.4-95.2)	262/280	86.6(81.3-91.8)	256/280
Informing IDU partner on HIV positive status (yes)	93.1	2050	94.1(91-97.2)	352/370	91.1(86.3-95.9)	265/280	86.2(81.3-91.1)	254/280

Table 18: Drug treatment and social influence

	GEORGIA		TBILISI		BATUMI		ZUGDIDI	
Drug treatment and HIV/AIDS prevention	Population estimates %	N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N
Drug use treatment								
Currently under medical treatment	4.0	2050	6(2.9-9.1)	31/370	9.1(4.2-14.1)	22/280	1.2(0-2.8)	2/280
Used to take a medical treatment during last 12 months, but now isn't treating	2.8	2050	4(1.9-6.1)	16/370	3.8(1-6.6)	8/280	1.5(0-3)	4/280

	GEORGIA		TBILISI		BATUMI		ZUGDIDI	
Drug treatment and HIV/AIDS prevention	Population estimates %	N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N
Never been treated	74.0	2050	55.8(49.1-62.6)	202/370	72.8(64.1-81.5)	198/280	76.7(70.4-82.9)	221/280
Kind of medical treatment and assistance taken last 12 months								
Apply to a medical facility to get a special treatment because he/she is a drug user during last 12 months	6.8	2050	10(6.2-14.1)	47/370	13(7-18.9)	30/280	2.9(0.7-5)	7/280
≤ 24 years old	3.1	97	18.9(0-48.2)	2/11	43.1(0-99.4)	1/7	0	0/8
≥ 25 years old	7.0	1953	9.8 (6-13.6)	45/359	11.7(6.6-16.7)	29/273	2.9(0.6-5.3)	7/272
Consultations at a health centers	0	139	0	0/47	0	0/30	0	0/6
Self-treatment groups	0	139	0	0/47	0	0/30	0	0/6
Detoxification with Methadone	4.3	139	1.4(0.9-1.9)	1/47	9.2(3.4-15.1)	2/30	7.2(0-17.2)	1/6
Substitution with Methadone	73.4	139	89.6(86.3-93)	43/47	65.2(41-88.9)	23/30	45.7(2.9-89)	2/6
Detoxification with other drugs	2.9	139	0	0/47	0	0/30	0	0/6
Detoxification without drugs	10.1	139	12.1(3.8-20.4)	5/47	6(2.4-9.6)	2/30	40.2(0-82.2)	2/6
Psycho-social rehabilitation center	1.4	139	0	0/47	0	0/30	0	0/6
At home	2.9	139	4.7(1.9-7.5)	1/47	0	0/30	0	0/6
Other	9.4	139	0	0/47	19(8.7-31.1)	3/30	7.2(0-17.2)	1/6
Survived "extreme need" with somebody else's help last 12 months	6.1	2050	9.6(5.7-13.5)	46/370	10.4(5.5-15.3)	27/280	2.5(0.5-4.4)	5/280
≤ 24 years old	2.1	97	19(0-46.9)	2/11	0	0/7	0	0/8
≥ 25 years old	6.3	1953	9.3(5.7-13)	44/359	10.8(5.7-16.0)	27/273	2.5(0.4-4.7)	5/272

	GEORGIA		TBILISI		BATUMI		ZUGDIDI	
Drug treatment and HIV/AIDS prevention	Population estimates %	N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N
Survived "extreme need" without anybody's help last 12 months	22.4	2050	16.5(11.9-21)	73/370	16.4(5.8-27.2)	57/280	25.3(19.6-30.7)	95/280
IDUs reached with prevention programs								
Aware about HIV testing possibilities and received sterile injecting equipment and condom last 12 months	16.3	2050	12.7 (8.9-16.6)	58/370	14.2(7.8-20.5)	44/280	15.4(10.7-20.1)	48/280
≤ 24 years old	10.3	97	1.8(0-6.1)	1/11	0.6(0-1.4)	1/7	7.6(0-19.9)	2/8
≥ 25 years old	16.6	1953	13.1(9-17.1)	57/359	14.7(8.6-20.8)	43/273	15.6(10.5-20.6)	46/272
Program minimal coverage ²⁹	23.3	2050	19.6 (14.5-24.7)	81/370	26.5(12.7-40.3)	72/280	22.3(17.2-27.5)	67/280
≤ 24 years old	15.5	97	14 (0-38.3)	2/11	11.1(0-39.3)	2/7	7.5(0-29.7)	2/8
≥ 25 years old	23.7	1953	19.8(14.8-24.6)	79/359	27.1(12.9-41.2)	70/273	22.7(17.1-28.3)	65/272
Program full coverage ³⁰	13.3	2050	9.7 (6.3-13.2)	45/370	9.2(4.3-14)	32/280	14.1(9.5-18.7)	43/280
≤ 24 years old	9.3	97	1.7(0-5.3)	1/11	0.7(0-2.1)	1/7	7.8(0-19.5)	2/8
≥ 25 years old	13.5	1953	10(6.3-13.7)	44/359	9.5(4.3-14.7)	31/273	14.3(9.4-19.2)	41/272
Received sterile injecting equipment last 12 months	26.8	2050	29.9(23.8-35.8)	119/370	18.3(11-25.6)	54/280	27.2(21.1-33.3)	78/280
≤ 24 years old	35.1	97	6.9(0-19)	3/11	26(0-63.4)	3/7	8(0-19.1)	2/8
≥ 25 years old	26.4	1953	30.6(24.7-36.2)	116/359	18(11-25)	51/273	27.7(21-34.3)	76/272

²⁹ Aware about HIV testing possibilities and received sterile injecting equipment **or** condom **or** brochures/ pamphlets/ booklet **or** qualified educational information last 12 months

³⁰ Aware about HIV testing possibilities **and** received sterile injecting equipment **and** condom and brochures/ pamphlets/ booklet **and** qualified educational information last 12 months

	GEORGIA		TBILISI		BATUMI		ZUGDIDI	
Drug treatment and HIV/AIDS prevention	Population estimates %	N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N
Received condoms last 12 months	24.2	2050	25.7(19.9-31.5)	101/370	16.4(9.8-22.9)	51/280	25.7(19.5-32)	73/280
≤ 24 years old	33.0	97	6.8(0-20)	2/11	24.6(0-63)	3/7	7.7(0-22)	2/8
≥ 25 years old	23.8	1953	26.2(21-31.4)	99/359	16.1(9.7-22.4)	48/273	26.1(19.6-32.7)	71/272
Received brochures/pamphlets/booklet on HIV/AIDS last 12 months	27.3	2050	27.3(22-32.6)	109/370	17.8(7-28.7)	61/280	27.7(21.4-33.9)	79/280
≤ 24 years old	38.1	97	19.4(0-46.7)	4/11	26.2(0-66.3)	3/7	7.8(0-20.4)	2/8
≥ 25 years old	26.8	1953	227.5(21.9-33.2)	105/359	17.4 (5.8-29)	58/273	28.1(22.1-34.1)	77/272
Received qualified information on HIV/AIDS last 12 months	24.4	2050	26(20.4-31.4)	103/370	20.8(7.5-34)	58/280	23.7(17.8-29.7)	71/280
≤ 24 years old	30.9	97	7(0-19)	3/11	0.7(0-2.2)	1/7	7.4(0-20.2)	2/8
≥ 25 years old	24.1	1953	26.4(21.1-31.8)	100/359	21.6(8.2-35)	57/273	24.1(17.8-30.4)	69/272
Heard information about syringe exchange program	52.4	2050	31.8(24.6-39)	120/370	47.3(36.7-58)	136/280	53(46.1-60)	165/280
Received sterile syringes from the program during the last 12 months	32.2	1075	20.3(10.8-29.8)	26/120	37.8(27.4-47.9)	53/136	21.2(14.2-28.1)	37/165
Top two persons with major influence on continuing drug use								
No one	86.0	2050	83.5(79.1-88)	319/370	85.5(79.7-91.4)	245/280	71.7(65.7-77.7)	211/280
Needle partner	18.8	2050	11.7(7.6-15.7)	37/370	11.2(6-16.3)	29/280	25.7(19.7-31.4)	62/280
Top two persons with major influence on quitting drug use								
No one	42.1	2050	44(37.8-50.2)	157/370	39.3(25.3-53.1)	118/280	40.4(32.7-47.9)	118/280
Friend	31.2	2050	19.7(14.6-25.2)	73/370	20.3(7.2-33.7)	49/280	25.4(18.3-32.3)	64/280

Table 19: Prevalence of HIV and HCV among PWIDs

	GEORGIA		TBILISI		BATUMI		ZUGDIDI	
Biomarker	Sample estimates %	N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N
HIV								
HIV prevalence	2.3	2050	1.2(0.1-2.3)	5/370	5.1(0-15.4)	13/280	1.8(0-3.5)	4/280
≤ 24 years old	2.1	97	0(0-0)	0/11	0	0/7	0	0/8
≥ 25 years old	2.3	1953	1.2(0.06-2.4)	5/359	5.3(0-15.7)	13/273	1.8(0-3.8)	4/272
HCV								
HCV prevalence	63.2	2049	74.1(68.2-80)	282/370	74.5(61.1-88.1)	207/280	51(43.7-58.4)	139/280
≤ 24 years old	3.1	96	1.7(0-5.9)	1/11	0	0/7	18.7(0-48.5)	2/8
≥ 25 years old	66.2	1953	76.2(70.2-82.2)	281/359	77.7(64.7-90.6)	207/273	51.9(44.6-59)	137/272

Table 20: Opioid dependence

	GEORGIA		TBILISI		BATUMI		ZUGDIDI	
Drug using behavior	Population estimates %	N	RDS population estimates, % (95% CI)	n/N	RDS population estimates, % (95% CI)	n/N	RDS population estimates, % (95% CI)	n/N
Injecting frequency of narcotic analgetics during last 12 months								
Narcotic analgetics injections	93.0	2050	79.8(74.5-85.2)	308/370	100	280/280	90.3(86.5-94.2)	261/280
One month and more	20.5	1906	24.4(18.7-30.1)	79/308	21.9(9.2-34.8)	66/280	20.5(14.2-26.8)	70/261
More than one week and several times in the year	13.4	1906	12.8(8.8-16.8)	58/308	9.6(4.8-14.4)	32/280	17.1(11.9-22.2)	49/261
Injected drugs last 12 months (opioids)								
Codeine	2.0	1906	2.9(0.7-5.1)	9/308	1.6(0-3.4)	5/280	95.2(92.3-98.0)	13/261
Heroin	76.9	1906	68.2 (60-76.5)	229/308	60.1(50.6-70.6)	187/280	76.5(69.9-83.1)	216/261
Opium	8.5	1906	6.9(3.7-10.1)	31/308	2.1(0-4.6)	6/280	3.6(1.3-5.9)	14/261
Cocnar	10.1	1906	9.4(5.3-13.5)	30/308	1.9(0-4.0)	7/280	6.6(3.4-9.8)	20/261

	GEORGIA		TBILISI		BATUMI		ZUGDIDI	
Drug using behavior	Population estimates %	N	RDS population estimates, % (95% CI)	n/N	RDS population estimates, % (95% CI)	n/N	RDS population estimates, % (95% CI)	n/N
Methadone	25.7	1906	37.3(29.8-44.8)	111/308	19.0(11.6-26.4)	55/280	47.5(39.6-55.4)	128/261
Buprenorphine (Subutex, Suboxon)	65.8	1906	61.9(54.6-69.2)	205/308	73.2(63.3-83.1)	238/280	47.7(38.8-56.8)	129/261
Morphine	11.0	1906	9.4(5.6-13.1)	28/308	9.5(4.7-14.3)	23/280	10.9(6.2-15.5)	23/261
Desomorphine	10.7	1906	7.5(2.9-12)	25/308	4.5(1.2-7.9)	15/280	21.1(14.6-27.4)	57/261
Tramadol	0.6	1906	0.9(0-2.2)	2/308	0.2(0-0.5)	2/280	1.6(0.2-2.9)	6/261
Other opioids	0.5	1906	1.1(0-2.6)	3/308	0.2(0.1-0.3)	4/280	5.8(0.2-11.1)	8/261
Withdrawals caused by easing narcotic analgetics usage or dosage reduction								
I haven't stopped	12.0	644	8.9(0.7-17)	8/137	31(16.4-45.7)	29/97	6.6(5.4-8)	6/119
yes	84.6	644	87.2(78.7-95.6)	123/137	63.7(46.3-80.9)	64/97	91.3(89-93.7)	107/119
no	3.3	644	4(0.3-7.7)	6/137	5.3(0-11.8)	4/97	1.7(0-3.6)	5/119
No response	0.2	644	0	0/137	0	0/97	0.3(0-0.7)	1/119
Tolerance/substance taken in larger amount and for longer period than intended ³¹								
Used more opioids to get the same high ³²	81.7	644	69.6(58.6-80.4)	100/137	82.1(71.5-93.0)	79/97	76.4(67.3-85.6)	91/119
Use continuous despite knowledge of adverse consequences (e.g., failure to fulfill role obligation, use when physically hazardous) ³¹								
The idea of missing a fix (or dose) ever made one anxious or worried ³²	90.5	644	89(82-95.9)	125/137	87.3(80.5-94.0)	87/97	78.1(66.8-89.1)	97/119
Characteristic withdrawal symptoms; substance taken to relieve withdrawal ³¹								
In the morning someone ever used opioids to keep from feeling dope sick or ever feel dope sick ³²	94.4	644	94(90.1-97.9)	131/137	94.0(93.5-94.9)	91/97	90.2(83.0-97.4)	106/119
Clinical experience question (not associated with DSM-IV criteria for opioid dependence or opioid abuse ³¹								

³¹ DSM-IV= Diagnostic and statistical Manual of mental Disorders indicators

³² RODS= Rapid Opioid Dependence Screen variables

	GEORGIA		TBILISI		BATUMI		ZUGDIDI	
Drug using behavior	Population estimates %	N	RDS population estimates, % (95% CI)	n/N	RDS population estimates, % (95% CI)	n/N	RDS population estimates, % (95% CI)	n/N
Someone worried about use of opioids ³²	73.8	644	87.1 (80.4-93.8)	116/137	82.6(74.5-91.0)	71/97	71.4(62.2-81.3)	76/119
Persistent desire or repeated unsuccessful attempt to quit ³¹								
One found difficult to stop or not use opioids ³²	88.4	644	91.2(84.3-98.1)	124/137	79.4(70.6-88.3)	80/97	87.2(79.6-94.7)	107/119
Much time/activity to obtain, use, recover ³¹								
One ever needed to spend a lot of time/ energy on finding opioids or recovering from feeling high ³²	74.5	644	74.5(63.9-85)	107/137	78.8(70.3-87.2)	77/97	75.1(64.8-85.6)	84/119
Important social, occupational, or recreational activities given up or reduced ³¹								
One missed important things like family/friend activities, or other things because of opioids ³²	82.0	644	79.2 (70.2-88.1)	105/137	89.7(79.0-100.1)	86/97	80.7(72.1-89.6)	89/119
OPIOID dependence (RODS score >3)								
yes	93.0	644	94.2 (88.8-99.6)	130/137	97.1(94.8-99.4)	92/97	88.5(80.8-96.0)	106/119
≤ 24 years old	86.7	15	100	2/2	100	3/3	100	1/1
≥ 25 years old	93.2	629	94.1(88.8-99.4)	128/135	96.8(94.5-99.2)	89/94	88.4(80.7-96.1)	105/118

Table 21: Knowledge of Hep C and risk assessment

	GEORGIA		TBILISI		BATUMI		ZUGDIDI	
Knowledge of Hep C	Population estimates %	N	RDS population estimates, % (95% CI)	n/N	RDS population estimates, % (95% CI)	n/N	RDS population estimates, % (95% CI)	n/N
Hep C awareness								
Aware about Hep C state/elimination program (yes)	98.4	2050	99.3(98.6-100)	365/370	99.6(99-100.2)	279/280	97.3(95.3-99.3)	273/280
One can get Hep C by sharing meal with someone who is infected (no)	85.6	2050	89.6(86.1-93.1)	324/370	83.8(73-94.5)	235/280	86.7(82.3-91.2)	245/280
One can get Hep C via sexual contact with someone who is infected (yes)	64.1	2050	71.3(64.6-77.8)	263/370	68.8(55.6-81.9)	181/280	77.6(72.1-83.2)	212/280
One can get Hep C via handclasp with someone who is infected (no)	94.0	2050	97.9(96.3-99.4)	352/370	91.4(86.9-95.8)	259/280	92.8(89.5-96.1)	260/280
One can get Hep C via coughing or sneezing (no)	81.1	2050	87.6(83.7-91.5)	315/370	77.5(70.2-84.7)	226/280	74.3(67.5-81)	210/280
One can get Hep C by sharing others private hygiene items such as toothbrush, shaver, or other with someone who is infected (yes)	93.1	2050	95.1(92.6-97.6)	351/370	95.4(92.3-98.5)	266/280	87.8(83.1-92.4)	250/280
One can get Hep C via sharing spoon, fork, glass, cup or other dishes with someone who is infected (no)	83.6	2050	85.5(80.8-90.3)	316/370	78.8(72.2-85.2)	229/280	80.5(74.6-86.3)	228/280
One may be infected with Hep C by using a needle/syringe already used by someone else (yes)	98.8	2050	98.5(97.3-99.8)	362/370	100(99.9-100)	279/280	97.7(95.9-99.5)	275/280

	GEORGIA		TBILISI		BATUMI		ZUGDIDI	
Knowledge of Hep C	Population estimates %	N	RDS population estimates, % (95% CI)	n/N	RDS population estimates, % (95% CI)	n/N	RDS population estimates, % (95% CI)	n/N
One can get Hep C via touching handles in public spaces or use of public bathrooms (no)	90.8	2050	93.3(90.3-96.3)	340/370	89.3(84.5-94.2)	256/280	81.3(75.9-86.7)	235/280
Source of information about Hep C state/elimination program								
<i>Harm reduction program</i>	12.3	2018	1.5(0.4-2.5)	10/365	7.1(3.7-10.4)	22/279	7.5(4.1-11)	36/273
<i>TV</i>	56.1	2018	65.1(58.8-71.2)	242/365	59.4(47.7-71.1)	153/279	60(52.5-67.5)	156/273
<i>Friend</i>	73.7	2018	69.3(63.5-75)	269/365	67.5(54.4-80)	200/279	63(56-70.1)	194/273
One may reduce Hep C risk by								
Vaccination	50.1	2050	85.9(81.7-90.2)	302/370	3.1(0.4-5.8)	6/280	83(77.9-88.1)	228/280
Proper condom use	34.7	2050	32.6(26.3-39)	140/370	33(19.1-46.9)	95/280	42.1(34.1-50.2)	119/280
Not sharing used needle/syringe	46.5	2050	28.7(22.7-34.7)	115/370	67.7(59.2-76.2)	204/280	45.5(38.4-52.7)	125/280
Not using a shared bottle, spoon, boiling pan/glass/container, cotton/filter or water	10.9	2050	0.1(0-0.2)	1/370	27.4(12.4-42.3)	71/280	10.6(5.9-15.3)	21/280
Use of sterile medical equipment	37.4	2050	46.4(39.9-52.9)	172/370	44.7(35-54.4)	92/280	61.3(53.5-69)	166/280
Other (not using others private hygiene items)	33.1	2050	44.3(37.9-50.7)	153/370	26.7(13.4-40)	83/280	14.6(9-20.2)	42/280
Don't know	5.5	2050	2.3(1-3.6)	23/370	1.8(0.3-3.3)	14/280	4.2(1.8-6.5)	24/280
No response	0.2	2050	0	0/370	0.4(0-0.7)	3/280	0	0/280
Awareness about free of charge Hep C state/elimination program								
Yes	98.4	2018	99.6(99-100.1)	361/365	98.1(96-100.2)	274/279	98.9(97.9-100)	270/273
Knows where Hep C testing can be done								
Yes	78.8	2050	79.9(74.5-85.2)	296/370	82.3(71-93.5)	233/280	86.8(81.4-92.1)	242/280

	GEORGIA		TBILISI		BATUMI		ZUGDIDI	
Knowledge of Hep C	Population estimates %	N	RDS population estimates, % (95% CI)	n/N	RDS population estimates, % (95% CI)	n/N	RDS population estimates, % (95% CI)	n/N
No	20.6	2050	19.3(13.9-24.7)	71/370	17.2(5.9-28.5)	46/280	13(7.7-18.4)	37/280
Don't know	0.6	2050	0.8(0.1-1.5)	3/370	0.6(0-1.5)	1/280	0.2(0-0.5)	1/280
Voluntary Hep C testing								
During the last two years	57.6	2050	55.3(47-63.5)	209/370	67(57.2-82.8)	194/280	49.2(42.1-56.4)	135/280
From two to five years period	9.7	2050	9.8(5.9-13.7)	37/370	7(3-11)	18/280	10.1(6.4-13.9)	29/280
Five years ago	5.7	2050	7.4(4.2-10.7)	29/370	1.5(0-4.7)	11/280	7.8(4-11.6)	22/280
Never been tested	26.5	2050	27.1(20.6-33.7)	92/370	21.5(9-34)	57/280	32.7(25.9-39.6)	93/280
Do not remember	0.5	2050	0.3(0-0.8)	3/370	0	0/280	0(0-0)	1/280
Reason of not testing								
Afraid of result	12.1	544	10.7(3-18.4)	9/92	18.3(8.7-27.8)	10/57	13.5(6-21)	12/93
Don't need it	33.6	544	32.9(22.3-43.6)	27/92	36.2(36-36)	23/57	16.4(7.4-25.5)	19/93
Do not think about it	33.3	544	23.5(12.9-34.2)	26/92	28.2(9.1-47.6)	15/57	47.2(36.2-58.6)	37/93
Hep C treatment								
During the last 2 years	17.1	1506	20.8(14.8-26.8)	63/278	23.4(12.2-34.4)	54/223	10.9(6.1-15.6)	17/187
From two to five years period	0.6	1506	0.7(0-1.8)	1/278	0.3(0-0.6)	2/223	0.1(0-0.3)	1/187
Five years ago	1.8	1506	3.6(0.5-6.8)	7/278	0.1(0-0.1)	1/223	0.9(0-2)	3/187
Never been treated	80.5	1506	74.9(67.9-81.9)	207/278	76.2(65.2-87.4)	166/223	88.1(83.3-92.9)	166/187
Reason of not treating								
I am not infected	37.0	1213	34.4(25.1-43.8)	65/207	33.5(23.6-43)	62/166	46.8(36.6-57.2)	73/166
Doctor did not suggest	5.9	1213	14(6.8-21.2)	23/207	11.7(6-17.2)	20/166	1.8(0-4.6)	3/166
Expensive	10.5	1213	3.9(0.4-7.3)	7/207	4.5(0.6-8.3)	9/166	4.6(0.6-8.7)	6/166
Because of side effects	5.6	1213	3.9(1.1-6.7)	9/207	10.2(3.5-17)	17/166	6.7(3.4-10)	20/166
I am in a waiting list	12.0	1213	18(11.3-24.6)	37/207	12(4.7-19.2)	15/166	25.8(17.7-34)	33/166
Completed treatment								
Yes	77.5	293	78.6(69.8-87.5)	54/71	85.8(74.2-97.5)	50/57	54.5(28.2-81.2)	11/21

	GEORGIA		TBILISI		BATUMI		ZUGDIDI	
Knowledge of Hep C	Population estimates %	N	RDS population estimates, % (95% CI)	n/N	RDS population estimates, % (95% CI)	n/N	RDS population estimates, % (95% CI)	n/N
Currently on treatment	15.4	293	17.3(9.1-25.5)	14/71	13.2(1.5-24.8)	1/57	27.5(2.7-52.6)	4/21
No, stopped treating	6.8	293	4.1(0.2-8)	3/71	1(0.6-1.4)	6/57	17.1(4.8-29)	5/21
Don't know	0.3	293	0	0/71	0	0/57	0.9(0.1-1.4)	1/21
What was the reason to stop treatment								
Side effects	30.0	20	47.5(0-107.5)	1/3	0	0/1	0	0
Other	70.0	20	52.5(0-112.2)	2/3	100	1/1	0	0
Financial problems	35.7	14	90.5(77.1-104.7)	1/2	0	0/1	0	0
Recovered from Hep C								
Yes	82.8	227	78.2(61-95.3)	45/54	97.6(96.7-98.5)	48/50	55(17.3-93.1)	6/11
No	6.2	227	8.9(0-19.9)	3/54	2.4(1.5-3.3)	2/50	21.6(0-58.1)	2/11
Don't know	11.0	227	12.9(1.3-24.5)	6/54	0	0/50	23.4(0-50.9)	3/11
Hep C testing after recovery	67.0	188	61.7(44.1-79.1)	29/45	66.5(53.4-79.7)	32/48	49.6(6.3-91.9)	4/6
Hep C reinfection after treatment	5.6	126	12.7(3.2-22.2)	4/29	0.4(0-1.6)	1/32	50.8(1-102.7)	1/4
Where do you prefer to receive Hep C testing and treatment								
Specific medical facility in my city	87.2	2050	87.2(82.7-91.6)	324/370	93.5(87.1-100)	246/280	97.5(95.7-99.3)	272/280
Methadone program in my city	1.0	2050	3.9(1.6-6.1)	11/370	0.1(0-0.3)	2/280	0.8(0-1.5)	4/280
Harm reduction service center in my city	3.2	2050	2.7(0-5.8)	5/370	0.2(0.1-0.4)	3/280	0.5(0-1.2)	2/280
other service provider in my town	0.2	2050	0	0/370	0	0/280	1.2(0-2.7)	2/280
Other	8.4	2050	6.2(3.5-8.9)	30/370	6.1(0-12.6)	29/280	0	0/280
It doesn't matter, if it is free	9.9	172	19.2(10.8-27.9)	5/30	0	0/29	0	0

Annex 2: Data tables (continued) - Gori, Telavi, Kutaisi, Rustavi

Table 13: Socio-Demographic Characteristics (Continued)

	GORI		TELAVI		KUTAISI		RUSTAVI	
Socio - Demographic Characteristics	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N
Involvement in previous studies								
Never	51.3(42.4-60.1)	120/280	65.7(59.6-71.8)	155/280	69.1(62.4-75.6)	180/280	78.1(72.6-83.5)	217/280
Yes, once	29.1(22.8-35.4)	97/280	24.1(18.3-29.6)	81/280	21.2(15.8-26.9)	66/280	20.3(15.0-25.6)	58/280
Yes, twice	16.1(11.1-21.1)	56/280	7.0(4.0-9.9)	29/280	7.8(4.3-11.3)	27/280	1.6(0.1-3.2)	5/280
Yes, three times	3.5(1.0-6.1)	7/280	3.2(1.2-5.2)	15/280	2.0(0.5-3.5)	7/280	0	0/280
Yes, four times	0	0/280	0	0/280	0	0/280	0	0/280
Age								
18 - 24	7.7(2-13.5)	16/280	8.1(4.0-12.2)	25/280	2.1(0-4.2)	5/280	8.9(3.7-14.1)	25/280
25 - 30	17.1(11.5-22.6)	43/280	8.6(4.5-12.6)	21/280	9.3(5.4-13.2)	27/280	22(15.8-28.1)	52/280
31 - 40	26.9(20.4-33.4)	79/280	23.8(17.7-29.8)	61/280	32.1(25.3-39)	90/280	27.2(20.2-34.1)	83/280
41 +	48.3(39.8-56.8)	142/280	59.5(52.3-66.8)	173/280	56.5(48.6-64.3)	158/280	41.9(32.6-51.3)	120/280
Mean (min - max) ²³	39.35(19-66)		42.60 (19- 69)		42.81 (21-68)		39.04 (18-67)	
Median	40.00		43.00		42.00		38.00	
Gender								
Male	98.9(97.6-100.2)	276/280	99.2(98.3-100)	278/280	97.9(96-99.8)	275/280	97.8(95.8-99.8)	272/280
Female	1.1(0-2.4)	4/280	0.8(0-1.7)	2/280	2.1(0.2-4)	5/280	2.2(0.2-4.2)	8/280
Education								
Primary (1-4 class)	0.6(0-1.8)	1/280	0	0/280	0.5(0-1.6)	1/280	0.8(0-1.7)	2/280
Secondary or vocational school	69.6(62.9-76.3)	189/280	57.3(50.6-64.5)	166/280	66.6(60.4-73)	185/280	71.3(64.9-77.5)	205/280
Incomplete Higher	3.9(1.3-6.5)	10/280	4.8(1.9-7.7)	15/280	1.9(0.5-3.4)	4/280	3.7(1.2-6.2)	12/280
Higher	25.8(19.5-32.2)	80/280	37.9(30.8-45)	99/280	30.9(24.6-37)	90/280	24.1(17.6-30.9)	61/280

	GORI		TELA VI		KUTA ISI		RUSTA VI	
Socio - Demographic Characteristics	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N
Ethnicity								
Georgian	94.1(90.5-97.7)	266/280	98.8(97.5-100)	276/280	98.7(97.3-100)	276/280	93.2(89.9-96.6)	259/280
Other	5.9(2.3-9.5)	14/280	1.2(0-2.5)	4/280	1.3(0-2.7)	4/280	6.7(3.4-10.1)	21/280
IDP status								
Yes	3(0.6-5.4)	7/280	0.9(0-2.2)	1/280	4.6(0.8-8.4)	14/280	3.9(1.5-6.2)	10/280
No	97(94.6-99.4)	273/280	99.1(97.8-100)	279/280	95.4(91.6-99.2)	266/280	96.1(93.8-98.5)	270/280
Employment								
Pupil/student	1(0-2)	2/ 280	1.3(0-2.5)	4/280	0	0/280	2.4(0.4-4.3)	7/280
Have a permanent job	10(5.8-14.3)	31/280	16.1(11.3-21.6)	46/280	7.1(3.6-10.7)	25/280	6.5(3.2-9.9)	22/280
Have a temporary job	20.5(14.6-26.4)	47/280	15.3(10.7-20.9)	44/280	16.2(11.1-21.4)	37/280	18.1(12.9-23.2)	49/280
Retired/disabled	3.2(0.5-5.9)	8/ 280	4.9(1.9-7.9)	11/280	3.8(1-6.6)	9/280	0.8(0.2-1.4)	5/280
Unemployed	65.3(58.5-72)	192/ 280	62.4(55.3-69.3)	175/280	72.8(66.4-79.3)	209/280	72.2(66.5-78)	197/280
No response	0	0/280	0	0/280	0	0/280	0	0/280
Monthly income (Gel)								
Less than 100 Gel	11.1(7.4-14.8)	62/280	8.6(5.5-11.7)	43/280	10.1(6.6-13.7)	33/280	8.5(5.3-11.7)	32/280
From 100 up to 300	40.3(33.7-46.8)	105/280	35.1(28.3-42.8)	98/280	30.5(24.8-36.3)	88/280	37.8(31-44.6)	110/280
From 300 up to 500	28.9(22.3-35.6)	66/280	31.5(24-39.8)	73/280	24.7(18.3-31.1)	66/280	28.4(22.4-34.4)	68/280
From 500 up to 700	11.8(6.2-16.3)	27/280	15.7(10.5-21.6)	42/280	19.7(14.4-25)	50/280	15.2(9.5-20.9)	38/280
From 700 up to 1000	6.4(2.9-9.9)	15/280	5.9(2.9-8.9)	16/280	6.3(3.6-9.0)	19/280	7(3.2-10.8)	22/280
1000 Gel and more	2(0.1-4)	5/280	3.0(0.7-5.4)	8/280	8.5(4.7-12.5)	24/280	3.2(0.6-5.8)	10/280
No response	0	0/280	0	0/280	0	0/280	0	0/280
Marital status								
Married	46.2(38.7-53.7)	134/280	44.6(37.2-51.8)	123/280	49.2(42.8-55.8)	136/280	41.5(34.1-48.9)	114/280
Divorced/Separated	22.2(16.1-28.2)	62/280	24.2(18.6-30.9)	66/280	25.9(20.3-31.6)	74/280	25.1(19.2-30.9)	74/280
Widower/widow	2(0.2-3.8)	5/280	1.8(0-3.7)	3/280	0.5(0-1.6)	1/280	1.4(0-2.7)	4/280

	GORI		TELAVI		KUTAISI		RUSTAVI	
Socio - Demographic Characteristics	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N
Never been married	29.6(22.4-36.8)	79/280	29.4(23.2-35.6)	88/280	24.3(18.2-30.3)	69/280	32(25.3-38.8)	88/280
Living arrangements								
With spouse	44.8(37.1-52.4)	129/280	43.9(36.9-50.9)	122/280	47.5(40.5-54.5)	131/280	39.7(32.1-47.2)	109/280
With partner	0.4(0-0.9)	1/280	1(0-2.4)	3/280	2(0-4.4)	5/280	1.5(0-3)	5/280
Single	12.4(8.1-16.7)	34/280	13.5(9.1-18)	43/280	14.4(9.7-19.1)	45/280	14.6(10.3-18.9)	43/280
Live with relative/parents	42.5(35-50)	116/280	41.5(34.7-48.2)	112/280	35.5(28.9-42)	96/280	43.8(36.2-51.4)	120/280
Other	0	0/280	0	0/280	0.6(0-1.3)	3/280	0.4(0-0.8)	3/280
Refused to answer	0	0/280	0	0/280	0	0/280	0	0/280
Police and prison experience last 12 months								
Infringement of the law due to drug use during last 12 months	10.3 (6.1-14.5)	29/280	11.2(6.9-15.4)	36/280	10.7(7-14.4)	38/280	10.2(6.5-13.8)	38/280
≤ 24 years old	5.7(0-13.4)	1/16	3.3(0.1-6.6)	3/25	19.5(0-59.3)	1/5	14.7(1.6-28.1)	4/25
≥ 25 years old	10.7(6.7-15.7)	28/264	11.9 (7-16.8)	33/255	10.5(6.8-14.3)	37/275	9.7(5.7-13.6)	34/255
Detained in administrative sentence	7.9(4.2-11.7)	23/280	7.8(4.3-11.4)	27/280	8.5(5-11.9)	31/280	8.3(4.8-11.9)	27/280
Imprisoned before trial	4.6(1.7-7.5)	14/280	7.2(3.7-10.8)	19/280	5.7(2.7-8.6)	19/280	3.7(1.7-5.7)	16/280
Imprisoned	1.40-3)	3/280	0.8(0-1.7)	2/280	0.7(0-1.8)	2/280	0.7(0-1.4)	3/280
Alcohol consumption during the last month								
Every day	0.1(0-0.3)	1/280	1.1(0.4-1.9)	7/280	1.6(0.2-3.1)	7/280	3.2(1.2-5.3)	15/280
More than once a week	16.7(11.6-21.9)	50/280	19.8(14.5-25)	67/280	19.3(14.2-24.5)	55/280	22.8(17.2-28.5)	74/280
Once a week	12.8(8-17.5)	37/280	14.9(9.6-20.1)	42/280	10.8(6.4-15.3)	34/280	12.2(8.1-16.3)	37/280
Less than once a week	33(27.1-38.9)	101/280	39.9(33.2-46.7)	95/280	36.4(30.5-42.2)	101/280	35.8(29.3-42.3)	84/280
Never	37.5(31-43.8)	91/280	24.3(19.5-29.7)	69/280	31.9(25.3-38.3)	83/280	25.9(19.5-32.3)	70/280

Table 14: Drug use history (Continued)

	GORI		TELAVI		KUTAISI		RUSTAVI	
Drug using behavior	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N
Age when first used drugs								
<15	18.1(12.6-23.7)	54/280	9.8(5.9-13.8)	36/280	25.1 (19.1-31.1)	63/280	25.8(20.3-31.3)	69/280
15 – 19	68.7(62.7-74.5)	186/280	73.2(67.5-78.8)	201/280	61.3(54.8-67.9)	180/280	58.3(50.9-65.6)	175/280
20 – 24	11.4(7.1-15.8)	31/280	14.6(10.1-19.3)	35/280	9.5(5.6-13.5)	25/280	13.2(7.2-19.2)	32/280
25+	1.8(0.1-3.4)	9/280	2.3(0-4.9)	8/280	4(1.6-7.6.4)	12/280	2.7(0-6)	4/280
Mean (min - max) ²³	16.55(10-33)		17.06 (10-34)		16.50 (10-32)		16.42 (9-30)	
Median	16.00		17.00		16.00		16.00	
Age when first injected drugs								
<15	3.2(0.7-5.6)	10/280	0.4(0.1-0.7)	3/280	6.1(2.7-9.7)	15/280	4.5(1.8-7.2)	11/280
15 - 19	50.6(43.4-57.8)	142/280	40.8(33.8-47.7)	115/280	44.9(37.3-52.3)	131/280	43.6(37.3-49.9)	127/280
20 - 24	34.1(27.8-40.5)	97/280	38.3(32.5-44.2)	103/280	33.2(27.1-39.5)	90/280	39.9(33.5-46.4)	109/280
25+	12.1(7.1-17)	31/280	20.4(14.9-26.5)	59/280	15.7(11-20.5)	44/280	11.9(6.9-17)	33/280
Mean (min - max) ²³	19.78(13-37)		21.05 (13-40)		20.26 (13-40)		19.82(13-36)	
Median	19.00		20.00		19.00		20.00	
Duration of injecting drugs from first injection in years								
Mean (min - max) ²³	19.58(0-45)		21.53 (1-54)		22.55 (2-47)		19.21(1-47)	
Median	20.00		21.00		23.00		18.00	
Thinks he/she is addicted to drug								
I'm addicted	90.4(86.4-94.3)	249/280	87.9(81.6-92.3)	240/280	92.5(88.8-96.2)	263/280	86.7(81.9-91.6)	246/280
I'm not addicted/don't think I'm depending	9.6(5.7-13.6)	31/280	13(7.7-18.4)	40/280	7.5(3.8-11.2)	17/280	13.3(8.4-18.1)	34/280
No response	0	0/280	0	0/280	0	0/280	0	0/280
Duration of drug addiction in years								
Mean (min - max) ²³	17.09(1-41)		18.33 (1-45)		18.52(1-44)		15.96(1-41)	
Median	17.00		18.00		19.00		14.50	

Table 15: Drug use risk behavior (Continued)

	GORI		TELAVI		KUTAISI		RUSTAVI	
Drug using behavior	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N
Frequency of injecting drug use last month								
Once a month	19.5(13.5-25.7)	38/280	32.2(25.5-38.9)	64/280	14(8.7-19.2)	32/280	15.5(10.4-20.7)	35/280
Several times a month	44(37-50.9)	146/280	48.5(41.2-55.7)	161/280	44.7(37.5-51.9)	106/280	40.8(33.3-48.3)	114/280
Once a week	15.5(10.7-20.4)	34/280	8.5(3.8-13.1)	22/280	10(6.1-14)	32/280	18.4(12.3-24.4)	44/280
Several times a week	18.7(13.1-24.1)	57/280	8.3(4.6-12)	25/280	26.4(20.3-32.5)	96/280	22.9(17.9-27.9)	79/280
Once a day	1.7(0-3.6)	3/280	0.8(0.2-1.5)	3/280	2.3(0.6-4.1)	7/280	0.5(0-1.2)	2/280
Several times a day	0.6(0-1.4)	2/280	1.7(0.1-3.4)	5/280	2.6(0.2-4.9)	7/280	1.9(0.2-3.6)	6/280
Member of regular injecting group								
Yes	59.8(52.7-66.8)	181/280	59.1(52.1-66.2)	167/280	49.9(43.3-56.5)	157/280	60.3(53.4-67.1)	175/280
Mean # of injecting group members (min-max) ²³	3.61(2-12)		4.25 (1-9)		3.54 (1-9)		3.95 (1-15)	
Consumed drugs last month (drug groups)								
CNS depressants	49.7(41.2-58.3)	121/247	59.2(51.8-66.5)	142/226	37.1(27.5-46.6)	75/207	48.9(39.6-58.2)	107/247
CNS stimulant	0.1(0-0.2)	2/247	0.9(0.1-1.7)	2/226	0.5(0-1.1)	1/207	0.6(0-1.5)	1/247
Narcotic analgetics	8.5(4-13)	20/247	4(0.6-7.4)	11/226	9.8(5.3-14.2)	19/207	4.1(1.5-6.6)	12/247
Hallucinogens	90.7(85.9-95.5)	224/247	80.8(74.8-86.9)	182/226	82.8(76.4-89.3)	175/207	85.3(79.8-90.9)	119/247
New psychoactive substances	19.7(13.8-25.7)	54/247	4.3(1.8-6.7)	14/226	18.4(12.2-24.6)	43/207	23.9(18.4-29.3)	67/247
Other psychoactive substances	0	0/247	0	0/226	0	0/207	0	0/247
Combination	4.1(0.1-6.7)	13/247	4.1(0.5-7.7)	10/226	2.3(0.7-3.8)	11/207	4.5(0.7-8.3)	12/247
Mean # of drugs used (min-max) ²³	1.69(1-4)		1.49 (1-4)		1.48(1-3)		1.63 (1-4)	
Injected drugs last month (drug groups)								
CNS depressants	2.7(0.6-4.9)	10/280	2.4(0.7-4.1)	9/280	1.4(0-2.8)	6/280	1.2(0-2.5)	5/280

	GORI		TELAVI		KUTAISI		RUSTAVI	
Drug using behavior	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N
CNS stimulant	26.4(19.4-33.4)	82/280	9.1(5.5-12.7)	41/280	16.2(10.9-21.3)	47/280	29.6(21.6-37.5)	88/280
Narcotic analgetics	88.3(83.3-93.2)	250/280	96.6(94.5-98.6)	269/280	92.1(88.1-96.2)	262/280	84.5(79-90)	241/280
New psychoactive substances	0.1(0-0.4)	1/280	1.2(0-2.6)	2/280	1.1(0-2.3)	2/280	0.1(0-0.2)	1/280
Other psychoactive substances	0.6(0-1.5)	1/280	0	0/280	0.5(0-1.1)	2/280	0	0/280
Combination	0.1(0-2.2)	5/280	1.8(0.3-3.3)	9/280	1.1(0-2.2)	5/280	0.2(0-0.4)	3/280
Mean # of drugs injected ²³	1.18(1-3)		1.09(1-3)		1.11 (1-4)		1.15(1-3)	
Injected drugs last month (selected drugs)								
Heroin	53.6(45.8-61.5)	149/280	40(33.7-46.2)	111/280	44.9(38.4-51.4)	131/280	66.2(58.5-73.8)	190/280
Buprenorphine (Subutex, Suboxon)	34.7(27-42.4)	96/280	61.4(54.6-68.1)	173/280	61.5(54.6-68.4)	179/280	19.3(13.5-25)	67/280
Ephedrone (Vint)	2.2(0.7-3.8)	11/280	1.1(0-2.4)	3/280	7.8(3.4-12)	21/280	3(1.3-4.7)	15/280
Metamphetamine (Jef)	0	0/280	0.1(0-0.1)	1/280	0.1(0-0.2)	1/280	0.2(0-0.6)	1/280
Morphine	9.6(5-14.2)	31/280	1.8(0.3-3.3)	7/280	4.1(1.4-6.7)	12/280	3.8(1.4-6.2)	12/280
Desomorphine	1.2(0.2-2.2)	6/280	2.3(0.2-4.4)	10/280	0.7(0.1-1.2)	4/280	2.7(0.7-4.6)	9/280
Ephedra (tsitsvebi)	21.6(15.8-27.4)	65/280	5.8(3-8.6)	29/280	6.4(3.5-9.4)	21/280	26.1(18.2-34)	71/280
Methadone	3.3(0.9-5.8)	14/280	0.2(0-3.3)	4/280	8.3(4.6-12.0)	31/280	3.8(1.3-6.3)	12/280
Injecting frequency of narcotic analgetics during last 12 months								
Narcotic analgetics injection	91.3(87.1-95.5)	256/280	99(98-100.1)	278/280	98.1(94.8-101)	278/280	85.6(80.7-90.6)	245/280
One month and more	17.9(12.4-23.3)	52/256	10.6(6.9-14.3)	34/278	15.5(11-19.8)	48/278	14.7(9.5-19.8)	41/245
More than one week and several times in the year	9.3(5.5-13.1)	27/256	4.6(1.9-7.2)	19/278	9.9(6.2-13.6)	41/278	6.9(4.2-9.6)	29/245
Withdrawals caused by easing narcotic analgetics usage or dosage reduction								
I haven't stopped	15.1	8/79	14.2(0-29.7)	8/53	16.6(7.8-25.7)	10/89	10(1.4-18)	8/70

	GORI		TELAVI		KUTAISI		RUSTAVI	
Drug using behavior	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N
yes	82.4(72.4-92.1)	70/79	79.6(79.5-79.5)	43/53	81.3(72.2-90.2)	76/89	90(82-99)	62/70
no	2.5(1.6-3.4)	1/79	6.2(0-22.1)	2/53	2(0.1-4)	3/89	0	0/70
No response	0	0/79	0	0/53	0	0/89	0	0/70
Ever shared used needle/syringe/other injecting equipment								
Yes	59.1(51-67.1)	180/280	57.3(50-64.7)	162/280	53.3(46.5-60)	151/280	56.2 (48.9-64)	162/280
No	39.2(31.3-47.1)	93/280	39.1(31.8-46.4)	108/280	44.2 (37.1-51.3)	122/280	39.2 (32-46.4)	102/280
Don't know	1.7(0-3.5)	7/280	3.6(1.2-5.9)	10/280	2.6 (0.4-4.8)	7/280	4.6 (1.9-7.2)	16/280
Used sterile needle/syringe/ other injecting equipment at last injection								
Yes	96.3 (94.3-98.4)	261/280	92.3(89.4-95.3)	254/280	95.3(92.5-98.1)	266/280	89.2 (85.5-92.9)	244/280
No	3.7(1.6-5.7)	19/280	7.7(4.7-10.6)	26/280	4.7(1.9-7.5)	14/280	10.8(7.1-14.5)	36/280
Used previously used by others needle/syringe/ other injecting equipment at last injection								
Yes	0.8(0.08-1.6)	6/280	3.2(1.5-4.8)	11/280	0.7 (0-1.5)	3/280	1.6 (0.1-3)	6/280
No	98.7(97.7-99.7)	272/280	96.8(95.2-98.4)	269/280	99.3 (98.5- 100)	277/280	97.8 (96.3-99.4)	271/280
Don't know	0.4(0-0.1)	2/280	0	0/280	0	0/280	0.6 (0-1.3)	3/280
Used previously used by him/herself needle/syringe/ other injecting equipment at last injection								
Yes	2.4(0.7-4.1)	11/280	4.8(2.4-7.2)	17/280	4.6(1.7-7.5)	13/280	8.6 (5-12.2)	27/280
No	97.6(95.9-99.3)	269/280	95.2(92.8-97.6)	263/280	95.4 (92.5-98.3)	267/280	91.2 (87.6-94.8)	252/280
Don't know	0	0/280	0	0/280	0	0/280	0.2(-0.1-0.5)	1/280
Used needle/syringe / other injecting equipment left at a place of gathering by somebody else at last injection								
Yes	0.4(0-0.8)	2/280	1.4(0.6-2.2)	6/280	0.3 (0-0.7)	2/280	0.4 (0-0.9)	2/280
No	98.3(97.1-99.4)	269/280	97.3(95.6-99.1)	271/280	99.3 (98.6-100)	277/280	97.6 (96-99.1)	270/280
Don't know	0	0/280	1.2 (-0.3-2.7)	2/280	0	0/280	0	0/280
No Response	1.4(0.3-2.5)	9/280	0.1(0-0.2)	1/280	0.4(0-1)	1/280	2 (0.5-3.5)	8/280
Used pre - filled syringe at last injection								
Yes	0	0/280	0	0/280	0	0/280	0	0/280
No	99.5(98.8-100)	278/280	100	280/280	100	280/280	99.7 (99.4-100)	279/280

	GORI		TELAVI		KUTAISI		RUSTAVI	
Drug using behavior	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N
Don't know	0.5(0-1.2)	2/280	0	0/280	0	0/280	0.3 (0-0.6)	1/280
Used shared bottle, spoon, boiling pan/ glass/ container, cotton/filter or water at last injection								
Yes	0.1(0-0.3)	1/280	0.3(0-0.7)	1/280	0.5 (0.1-1)	3/280	1.3 (0-2.8)	4/280
No	99.1(98.2-99.9)	276/280	97.7(96.2-99.2)	273/280	99 (98.4-99.9)	276/280	98.2 (96.7-99.7)	274/280
Don't know	0.8(0-1.7)	3/280	2.1(0.6-3.5)	6/280	0.3 (0-0.9)	1/280	0.4 (0-0.9)	2/280
Used solution from the shared container at last injection								
Yes	5.4(2-8.8)	13/280	4.2(1.8-6.5)	13/280	6.5 (3.3-9.6)	19/280	6.9 (3.6-10.2)	22/280
No	94.5(91.1-97.9)	266/280	95.8(93.5-98.2)	267/280	93.5(90.4-96.7)	261/280	93.1 (89.8-96.4)	258/280
Don't know	0.2(0-0.4)	1/280	0	0/280	0	0/280	0	0/280
Safe injecting practice at last injection								
PWID with safe injection practice at last injection ³³	84.3 (79.2-89.4)	232/280	79.4(73.8-84.9)	217/280	85.6(81.3-90.2)	234/280	75.6 (69.4-81.8)	205/280
≤ 24 years old	90 (77.9-101.4)	13/16	74.5(54.9-94.1)	18/25	100	5/5	49.8(27-72.3)	12/25
≥ 25 years old	83.8(78.2-89.4)	219/264	79.8(74.5-85.2)	199/255	85.5(80.7-90.3)	229/275	78.2(72.6-83.8)	193/255
PWID with safe injection practice at last injection_2 (excludes self-used syringe use) ³⁴	93.7(90.2-97.1)	259/280	92.1(89.2-95)	253/280	92.4(89.2-95.7)	255/280	90.6(5.9-13)	248/280
≤ 24 years old	95.9(90-101.5)	14/166	82.3(67.4-97.7)	20/25	100	5/5	70(54.6-85.8)	16/25
≥ 25 years old	93.5(90.1-96.8)	245/264	93(90.2-95.8)	233/255	92.3(89-95.6)	250/275	92.6(89-96.1)	232/255

³³ No usage of needle/syringe previously used by somebody else or him/herself, no usage of needle/syringe left at a place of gathering, not usage of syringe prefilled by somebody else without his presence, not usage of syringe filled from previously used syringe, no usage of possibly contaminated shared equipment (container, cotton, filter, water), no usage of drug solution from shared container prepared without his/her presence.

³⁴ No usage of needle/syringe previously used by somebody else, no usage of needle/syringe left at a place of gathering, no usage of syringe prefilled by somebody else without his presence, no usage of shared equipment, no usage of drug solution from shared container prepared without his/her presence.

	GORI		TELAVI		KUTAISI		RUSTAVI	
Drug using behavior	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N
Last month sterile injecting equipment use								
Never used previously used injecting equipment by others or him/herself	90.3(86-94.5)	247/280	85.5(81-90.1)	139/280	91.1(87.7-94.5)	251/280	80.9(75.3-86.4)	224/280
Never used injecting equipment used by others	96.4(94.4-98.3)	262/280	93.7(90.7-96.6)	259/280	98.1(96.5-99.8)	273/280	93.5(90.1-96.9)	258/280
Never used injecting equipment used by him/herself	90.9(87.1-94.7)	252/280	87.6(83.3-91.9)	245/280	91.1(87.5-94.7)	251/280	82.0(76.5-87.6)	228/280
Last month injecting equipment shared with								
Regular sexual partner	0	0/18	0	0/41	0	0/29	0	0/22
Sex partner who you didn't know before	0	0/18	0	0/41	0	0/29	0	0/22
Drug related friend	17.3(0-37.9)	4/18	18.8(9.1-29.1)	10/41	3.1(2.2-3.7)	2/29	19.5(4.7-33.1)	6/22
Drug trafficker	0	0/18	0	0/41	0	0/29	0	0/22
Stranger	0	0/18	0	0/41	0	0/29	4.1(4.0-4.2)	1/22
Friend	32.8(7.8-59.4)	4/18	11.1(1.3-20.4)	5/41	6.1(2.9-9.3)	1/29	23.7(24.5-24.6)	3/22
Number of injecting partners last month								
Mean # of needle sharing partners among all ³⁵ (min-max) ²³	0.1 (0-7)	279	0.18(0-7)	262	0.03(0-5)	266	0.13(0-5)	278
Mean # of needle sharing partners among those	2.68 (0-7)	17	2.29(0-7)	23	0.68 (0-5)	15	2.08(0-5)	20

³⁵ Don't know and no response regarded as missing cases and not included in the analysis.

	GORI		TELAVI		KUTAISI		RUSTAVI	
Drug using behavior	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N
who shared last month (min-max) ²³								
Cleaning the needle/syringe before usage								
Always	78.8(68.3-89.6)	26/33	72.4(56.1-89)	28/41	76.5(62.6-90.3)	23/29	79.4(71.1-87.7)	44/56
Almost always	13.2(6.2-20.6)	2/33	0	0/41	1.9(0-4.8)	1/29	1.4(1.3-1.4)	1/56
Sometimes	0	0/33	3.1(0-10)	2/41	0	0/29	0.9(0.8-0.9)	1/56
Once	0	0/33	3.8(3.8-3.8)	2/41	18.5(12.4-24.9)	4/29	2.7(0-6.9)	1/56
Never	8(0-15.9)	5/33	16.6(0-34.9)	8/41	3.1(0-15.9)	1/29	15.6(8.2-23.1)	9/56
Don't know	0	0/33	4.1(4.1-4.1)	1/41	0	0/29	0	0/56
No Response	0	0/33	0	0/41	0	0/29	0	0/56
Methods used to clean the used needle/syringe								
Water (boiled and non - boiled)	100	28/28	88.8(69.3-108.7)	27/32	100	28/28	95.2(95.1-95.3)	44/47
Disinfecting solution and chlorine	0	28/28	0	0/32	0	0/28	0	0/47
Boiling the needles/syringes	0	28/28	0	0/32	0	0/28	0	0/47
Other	0	28/28	20.1(0-40.4)	7/32	0	0/28	7.9(0.7-14.9)	4/47
Frequency of giving the used needle/ syringe to others last month								
Always	0	0/280	0.3(0-0.7)	1/280	0	0/280	0	0/280
Almost always	0.8(0-2)	2/280	0.3(0-0.8)	1/280	0.5(0-1.3)	1/280	0	0/280
Sometimes	1.9(0.1-3.8)	7/280	2.2(0.7-3.6)	10/280	0.6(0-1.3)	3/280	1.2(0.1-2.3)	5/280
Once	1.6(0.1-3.1)	5/280	2.6(0.7-4.5)	8/280	0	0/280	1.3 (0.2-2.4)	6/280
Never	95.5(92.8-98.1)	265/280	93.8(90.8-96.7)	258/280	98.9(97.8-99.9)	276/280	97.5(96-99)	268/280
Don't know	0.2(0-0.7)	1/280	0.9(0-2.5)	2/280	0	0/280	0.1 (0-0.1)	1/280
Getting of new and unused needle/syringe when needed								
Yes	96.8(94.3-99.3)	269/280	94.7(92-97.6)	265/280	97.5(95.5-99.5)	279/289	95.6(93.3-97.8)	264/280

	GORI		TELAVI		KUTAISI		RUSTAVI	
Drug using behavior	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N
Place to get/buy new (unused) needle/syringe								
Drug store	87.8(83.2-92.5)	216/269	95.2(92.8-97.7)	247/265	95 (92.5-97.4)	255/272	95.5(92.9-98)	247/264
Shop	0	0/269	0	0/265	0	0/272	0	0/264
Hospital	0.1(0-0.1)	1/269	0	0/265	0	0/272	0	0/264
Family/Relatives	0.3(0.2-0.3)	1/269	0.5(0-0.9)	3/265	0.7(0-1.4)	3/272	1.5(0-3.1)	4/264
Sex partner	0.1(0-0.2)	1/269	0	0/265	0	0/272	0.5(0.4-0.7)	1/264
Friends	2.4(0-5)	4/269	1.4(0-3.1)	5/265	0.5(0-1.6)	1/272	1.1(0.8-1.3)	2/264
Other injection drug user	29.3(23.2-35.4)	84/269	40.8(33.5-47.9)	115/265	16.7 (11.3-22.2)	47/272	38.7(31.2-46.2)	97/264
Drug trafficker	0.6(0-1.4)	2/269	1.5(0.1-2.8)	3/265	0	0/272	1.2(0-3)	2/264
Syringe exchange program	61.8(53.4-70.3)	167/269	27.5(20.8-34.2)	82/265	29.5(22.7-36.3)	80/272	24.1 (17.7-30.5)	74/264
Other	0.3(0-1)	1/269	0.1(0-0.1)	1/265	0	0/272	0	0/264
Injected in other locations in last 12 months								
Other cities in Georgia	62.8(56.5-69.2)	181/280	65.6(58.9-72.4)	188/280	60.7(53.9-67.6)	182/280	59.4(51.6-67.1)	179/280
Other countries outside of Georgia	30(23.7-36.4)	86/280	29.3(22.2-36.5)	80/280	47.7(41.4-53.9)	135/280	25.5(18.8-32.1)	68/280
Used shared injecting equipment in other locations								
Other cities in Georgia	3.2(0.1-6.3)	5/181	6.1(2.4-9.8)	13/188	0.6(-0.1-1.2)	3/182	3.5(0.7-6.3)	6/179
Other countries outside of Georgia	4.6(1.6-7.2)	9/86	10.9(1.8-19.6)	10/80	8.9(3.8-14)	12/135	8.8(0-18.4)	8/68
Other locations (cities or counties)	4.8(1.2-8.3)	13/209	9.1(4.4-13.8)	20/205	6.0(3-9)	14/218	5.3(1.8-8.7)	12/202
Both (cities and counties)	3.6(0.2-6.9)	6/209	5.6(2.4-9)	13/205	3.2(0.6-5.8)	7/218	3.5(0.5-6.5)	7/202
Overdoses experience last year								
Yes	4.7(2.1-7.4)	25/280	3.5(1.2-5.9)	11/280	2.8(1.0-4.6)	16/280	3.4(1.7-5.1)	18/280
Usual place of gathering to take drugs								
(flat)	85.7(80.5-90.9)	242/280	85.9(81.3-90.3)	234/280	90.7(86.8-94.5)	254/280	88.2(83.8-92.6)	245/280

	GORI		TELAVI		KUTAISI		RUSTAVI	
Drug using behavior	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N
Method of throwing away used needle								
(garbage bin)	49.3(42.7-55.8)	134/280	56.7(49.9-63.7)	148/280	69.9 (64.5-75.6)	183/280	66.6 (59.7-73.6)	173/280

Table 16: Sexual behavior (Continued)

	GORI		TELAVI		KUTAISI		RUSTAVI	
Sexual history	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N
Sexual behavior								
Median age at first sexual contact ²³	16.00	280	16.00	280	16.00	279	16.00	280
Had sex in the last 12 months	89.1(84.6-93.7)	253/280	84.5(80-89.2)	237/280	87.1(82.5-91.7)	247/280	93.3(89.9-96.6)	264/280
Condom use at last intercourse								
Used condom at last intercourse	43.2(35.3-51.1)	107/253	43.7(35.9-51.2)	98/237	37.1(30-44.3)	86/247	34.1(27.4-40.8)	86/264
≤ 24 years old	73(51.7-94.8)	12/16	78.4(60.7-95.7)	20/25	71.1(31.2-113.6)	3/5	68.3(42.2-94.3)	15/24
≥ 25 years old	40.4(32.7-48)	95/237	39.9(32.2-47.8)	78/212	36.4(29.9-44.7)	83/242	30.7(23.6-37.7)	71/240
Regular sex partner last 12 months								
Had regular sex partner	76.5(70.4-82.5)	215/280	69.3(63.1-75.5)	193/280	71.4(68.0-80.2)	208/280	77.5(71.5-83.5)	218/280
Mean (min – max) ²³	0.99 (1-4)	215	1.03(1-5)	193	1.07 (1-4)	208	1.44 (1-10)	218
Median	1.00		1.00		1.00		1.00	
Used condom at last intercourse	32.7(24.2-41.6)	65/215	29.1(21-37.4)	58/193	27.4(20.4-34.4)	52/208	24.3(17.7-31)	46/218

	GORI		TELAVI		KUTAISI		RUSTAVI	
Sexual history	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N
≤ 24 years old	63.8(35.3-92.8)	6/10	43.9(16.2-72.1)	12/19	64.2(1.6-115.1)	2/5	60.3(23.6-96.9)	7/14
≥ 25 years old	30.3(22.1-38.5)	59/205	27.7(19.7-35.8)	46/174	26.3(18.8-33.8)	50/203	22(15.2-28.7)	39/204
Occasional sex partner(s) last 12 months								
Had occasional sex partner last year	38.5(31-45.8)	124/280	38.4(32-44.9)	117/280	37.3(31.4-43.1)	123/280	42.1(35.8-48.7)	132/280
Mean (min – max) ²³	3.92 (1-30)	124	5.40 (1-40)	117	4.58 (1-30)	123	5.61 (1-40)	132
Median	3.00		3.00		3.00		3.00	
Used condom at last intercourse	61(50.6-71.5)	79/124	58.2(46.9-69.4)	71/117	59.7(48.1-71.4)	73/122	55.7(42-69.6)	69/132
≤ 24 years old	92.3(78.4-106.6)	10/11	54.2(25.3-83.2)	13/19	40.4(-24.7-108.3)	2/3	69(39-99.2)	13/19
≥ 25 years old	56.6(45.7-67.2)	69/113	58.8(47.4-70.1)	58/98	60.4(48.6-72.3)	71/119	53.5(40.9-66.4)	56/113
Paid sex partner(s) last 12 months								
Had paid sex partner last year	14.8(10.1-19.4)	47/280	20(14.7-25.3)	60/280	15.3(10.1-20.6)	48/280	24.6(18.9-30.3)	71/280
Mean (min – max) ²³	4.2(1-20)	47	4.34 (1-50)	60	6.15(1-25)	48	4.66 (1-30)	71
Median	3.00		3.00		4.00		3.00	
Used condom at last intercourse	86(80-91.4)	43/47	90.9(82.6-99.1)	54/60	92.5(91.7-95.8)	45/48	85.1(80.1-90.4)	57/71
≤ 24 years old	100	2/2	100	12/12	100	1/1	58.5(19.7-96.9)	5/8
≥ 25 years old	84.6(76.4-91.9)	41/45	88.3(78.1-98.5)	42/48	92.4(90.0-94.8)	44/47	88.2(82.2-94.5)	52/63
Married IDUs paid/occasional sex partners last 12 months								
Had occasional sex partners last year	31.3(21.2-40.9)	44/124	37.3(23.7-50.9)	37/117	42.3(31.7-52.8)	55/123	24.1(14.7-32.9)	40/132
Had paid sex partners last year	32.4(17.3-47.4)	17/47	30.5(16.9-44.3)	19/60	22.8(11.5-33.9)	15/48	22.1(0.8-42.9)	19/71
Man had male sex partner								

	GORI		TELAVI		KUTAISI		RUSTAVI	
Sexual history	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N
Ever had male sex partner	0.4(0-1.1)	1/276	0	0/278	2.1(0.3-3.9)	7/275	1.2(0-2.3)	3/272
Had male sex partner last year	0	0/276	0	0/278	0	0/275	0	0/272
Used condom with male partners at last intercourse	0	0/0	0	0/0	0	0/0	0	0/0
Reasons for not using condom at last intercourse with occasional partner								
Don't like it	11.7(0-26.1)	9/45	43.4(28.8-58)	18/46	26.7(0-59.1)	13/50	36.5(16.8-55.6)	26/63
Didn't think necessary	66.8(50.9-82.6)	28/45	53.1(20.1-85.3)	28/46	46.4(30.6-62)	26/50	56(26.4-86)	32/63
Frequency of using condom with regular partner last year								
Always	13.6(7.6-19.6)	30/215	11.9(6.9-16.6)	33/193	8.8(4.1-13.6)	19/208	5.6(2.8-8.3)	15/218
Never	53.3(44.5-62.2)	124/215	55.1(45.1-64.8)	110/193	60.8(52.6-69.0)	130/208	62.3(54.7-69.7)	147/218
Frequency of using condom with occasional partner last year								
Always	49.4(38.4-60.2)	66/124	40.1(27-52.4)	55/117	33.4(20.9-46)	45/123	36.7(26.2-47.1)	48/132
Never	15.3(8-22.5)	20/124	25(15.2-35.3)	24/117	20.8(11.1-30.5)	25/123	23.4(13.4-33.3)	36/132
Frequency of using condom with paid for sex partner last year								
Always	81.4(69.9-92.1)	41/47	80.8(70.5-91.1)	49/60	88.2(84.5-92)	41/48	79(71-87.5)	52/71
Never	9.9(6.2-14.3)	3/47	5.7(0-14.7)	3/60	3.9(2-6)	2/48	7.1(5.7-8.2)	7/71
Anal sex last 12 months								
Anal intercourse with any sexual partner last 12 months (yes)	1.9(0.3-3.4)	7/280	4.1(1.4-6.7)	12/280	3.8(1.2-6.4)	12/280	4.7(2.2-7.1)	16/280
Condom use during anal intercourse (yes)	73(55-92.7)	4/7	30.9(0-68.4)	3/12	67.5(37.6-97.6)	7/12	41.9(15.6-66.1)	9/16
Sex partner is IDU								

	GORI		TELAVI		KUTAISI		RUSTAVI	
Sexual history	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N
Regular sex partner is an injecting drug user (yes)	1.6(0-3.3)	4/215	4.2(1.4-7.0)	8/193	2.6(0.2-4.9)	4/208	3.5(1.1-5.8)	11/218
Occasional sex partner is an injecting drug user (yes)	4.2(0.3-8)	7/124	1.5(0-3.3)	3/117	3.2(0.2-6.3)	5/123	6.3(1.9-10.6)	10/132
Paid sex partner is an injecting drug user	5.9(0-15)	3/47	2.9(3-3)	1/60	5.8(0-11.7)	3/48	2.8(2-3.6)	2/71

Table 17: Knowledge of HIV/AIDS (Continued)

	GORI		TELAVI		KUTAISI		RUSTAVI	
Knowledge of HIV/AIDS	RDS population estimates, % (95% CI)	n/N	RDS population estimates, % (95% CI)	n/N	RDS population estimates, % (95% CI)	n/N	RDS population estimates, % (95% CI)	n/N
HIV/AIDS awareness								
Yes	99.9 (99.8-100)	279/280	99.6(99.1-100.2)	279/280	100	280/280	99.9 (99.8-100)	279/280
Knowledge of someone who is HIV infected, ill, or died of AIDS (yes)	44.4(37.3-51.5)	145/279	29.8(23.9-35.5)	95/279	47.8(41.2-54.6)	154/280	25.3(19.1-31.7)	82/279
One may reduce HIV risk by having one uninfected and reliable partner (yes)	99.7(99.5-99.9)	276/280	98.7(97.6-99.8)	274/280	99(98-100)	275/280	97.7(95.8-99.5)	273/280
One can reduce HIV risk if one properly uses condoms during every sexual contact (yes)	98.9(98.2-99.6)	273/280	97.8(96.4-99.1)	271/280	98(96.4-99.7)	273/280	96.5(94.1-98.8)	270/280

	GORI		TELAVI		KUTAISI		RUSTAVI	
Knowledge of HIV/AIDS	RDS population estimates, % (95% CI)	n/N	RDS population estimates, % (95% CI)	n/N	RDS population estimates, % (95% CI)	n/N	RDS population estimates, % (95% CI)	n/N
A healthy-looking person can have HIV (yes)	98.3(97.2-99.4)	269/280	93.4(89.4-97.5)	263/280	97.3(95.5-99)	268/280	92.9(89.8-96)	260/280
One can get HIV as a result of a mosquito bite (no)	64.7(58.2-71.2)	156/280	37.6(31.2-44.1)	111/280	49.8(43.3-56.2)	130/280	43.7(37.0-50.3)	114/280
One can get HIV by sharing meal with someone who is infected (no)	89.3(85.3-93.4)	245/280	72.4(65.6-79.4)	213/280	84.6(79.6-89.7)	237/280	80.8(75.6-85.9)	222/280
One may be infected with HIV by using a needle/syringe already used by someone else (yes)	99.9(99.8-100)	279/280	98.8(97.8-99.8)	276/280	100	280/280	98.5(97.2-99.9)	275/280
One may be infected with HIV by using a shared bottle, spoon, boiling pan/ glass/ container, cotton/filter or water (yes)	98.3(96.7-99.9)	276/280	97(95.2-98.9)	271/280	100	280/280	99(98.1-99.9)	276/280
One may be infected with HIV by using solution from the shared container which was prepared without his/her presence (yes)	99.9(99.8-100)	279/280	98.4(97.3-99.5)	274/280	99.9(99.7-100)	279/280	99(98.1-99.9)	276/280
Drug users may protect themselves by switching to non-injection drugs (yes)	99.9(99.7-100)	278/280	98.1(96.6-99.7)	272/280	99.2(98.3-100)	277/280	99(98.1-99.9)	276/280

	GORI		TELAVI		KUTAISI		RUSTAVI	
Knowledge of HIV/AIDS	RDS population estimates, % (95% CI)	n/N	RDS population estimates, % (95% CI)	n/N	RDS population estimates, % (95% CI)	n/N	RDS population estimates, % (95% CI)	n/N
HIV/AIDS infected woman can transfer the virus to her fetus or baby (yes)	83.4(78.4-88.6)	221/280	68.8(62.8-74.9)	194/280	62.4(55.8-68.9)	185/280	72.7(66.6-78.9)	197/280
PWID correctly identifying ways of preventing and transmitting HIV (Answers 5 GAM indicator questions correctly) ³⁶	61(54.1-68.7)	141/280	32.6(26.5-38.7)	93/280	46.8(40-53.4)	121/280	32.1(25.4-38.9)	91/280
≤ 24 years old	63.6(42.4-85.1)	10/16	32.7(11.7-53.8)	8/25	33.2(0-78.7)	2/5	24.7(8-41.4)	5/25
≥ 25 years old	60.8(54.5-68.3)	131/264	32.6(26.2-39)	85/255	47.1(40-54.1)	119/275	32.9(25.9-39.8)	86/255
PWID correctly identifying ways of preventing and transmitting HIV (Answers 7 National indicator questions correctly) ³⁷	95.7(93.2-98.3)	261/280	89.6(84.7-94.4)	247/280	95.2(93.8-97.2)	260/280	88.4 (84.1-92.7)	247/280
≤ 24 years old	88.7(70.2-106.5)	15/16	73.7(52.8-93.4)	18/25	100	5/5	93.7(85.9 -101.4)	23/25
≥ 25 years old	96.3(94.4-98.3)	246/264	91(86.9-95.2)	229/255	95(92.3-97.2)	255/275	87.9(83.1-92.5)	224/255
Knows possibility of confidential HIV testing in his/her city								

³⁶ One may protect oneself from HIV/AIDS by having one uninfected and reliable sexual partner; Can reduce the HIV risk if one properly uses condoms during every sexual contact; A healthy looking person can be infected with HIV; No one can get HIV as a result of a mosquito bite; No one can get HIV by taking food or drink with an infected person.

³⁷ One may protect oneself from HIV/AIDS by having one uninfected and reliable sexual partner; Can reduce the HIV risk if one properly uses condoms during every sexual contact; A healthy looking person can be infected with HIV; One may be infected with HIV/AIDS by using a needle already used by someone else; One may be infected with HIV/AIDS by using bottle, spoon, boiling pan/glass, container, cotton/filter or water where might been touched needle already used by someone else; One may be infected with HIV/AIDS by taking solution from the shared container; Drug users may protect themselves from HIV/AIDS by switching to non-injection drugs.

	GORI		TELAVI		KUTAISI		RUSTAVI	
Knowledge of HIV/AIDS	RDS population estimates, % (95% CI)	n/N	RDS population estimates, % (95% CI)	n/N	RDS population estimates, % (95% CI)	n/N	RDS population estimates, % (95% CI)	n/N
Yes	86.7(82.2-91.3)	249/280	57.3(50.4-64)	187/280	70(63.3-76.7)	210/280	50.3(43.6-56.9)	168/280
No	13.3(8.7-17.8)	31/280	42.7(36-49.6)	93/280	30(23.3-36.7)	70/280	49.7(43.1-56.4)	168/280
Knows where HIV testing can be done								
Yes	86.2(81-91.4)	245/280	56.3(49.8-63)	166/280	58.9(51.4-66.4)	177/280	38.6(31.1-46)	116/280
No	13.8(8.6-19)	35/280	43.7(37-50.2)	114/280	41.1(33.6-48.6)	103/280	61.4(54-68.9)	116/280
Voluntary HIV testing								
During the last year	56.4(48.6-62.3)	163/280	27.6(21.8-33.4)	86/280	36.3(28.9-43.8)	105/280	19.6(13.2-26.1)	58/280
From one to two years period	7.7(4.3-11.2)	20/280	8.7(4.9-12.6)	27/280	6.1(3.2-8.9)	23/280	5.6(2.9-8.3)	20/280
Two years ago	17.8(12.5-23.1)	55/280	18.6(12.7-24.5)	54/280	21.4(14.9-27.9)	58/280	20.4(15.2-25.5)	49/280
Never been tested	18(11.9-24.1)	42/280	44.8(38.1-51.4)	112/280	36.2(29.2-43.2)	94/280	54.1(46.9-61.4)	152/280
Do not remember	0	0/280	0.4(0-1)	1/280	0	0/280	0.3(0-0.7)	1/280
HIV testing during the last year								
Received HIV test last year and know their results	56.5(48.3-64.6)	163/280	27.6(21.7-33.4)	86/280	36.3(28.1-44.5)	105/280	19.6(13.3-25.9)	58/280
≤ 24 years old	10.4(0-24.0)	2/16	0	0	60.8(6.9-112)	4/5	0	0
≥ 25 years old	60(54-68.1)	161/264	30(23.8-36.2)	86/255	35.8(28.4-43.3)	101/275	21.5(14.2-28.9)	58/255
Informing others of HIV positive status								
Informing sex partner on HIV positive status	93.1(89.1-97.1)	264/280	87.9(83.2-92.6)	255/280	92.3(88.7-95.8)	265/280	85.5(80.4-90.6)	247/280
Informing IDU partner on HIV positive status	93.3(89.3-97.2)	265/280	87.7(82.9-92.6)	255/280	92.5(88.6-96.3)	266/280	86.3(81.5-91.2)	251/280

Table 18: Drug treatment and HIV/AIDS prevention (Continued)

	GORI		TELAVI		KUTAISI		RUSTAVI	
Drug treatment and HIV/AIDS prevention	RDS population estimates, % (95% CI)	n/N	RDS population estimates, % (95% CI)	n/N	RDS population estimates, % (95% CI)	n/N	RDS population estimates, % (95% CI)	n/N
Drug treatment								
Currently under medical treatment	5(1.5-8.6)	11/280	2.3(0.2-4.4)	8/280	1.5(0-3.1)	4/280	1.7(0-3.4)	4/280
Used to take a medical treatment during last 12 months, but now isn't treating	2.3(0.3-4.3)	7/280	2.3(0.9-3.7)	6/280	3.6(1.5-5.7)	12/280	0.9(0-1.8)	4/280
Never been treated	72.9(66.5-79.5)	217/280	75.5(69.4-81.6)	220/280	81.1(76.4-85.7)	217/280	87.8(83.1-92.6)	241/280
Kind of medical treatment and assistance taken last 12 months								
Apply to a medical facility to get a special treatment because he/she is a drug user during last 12 months	7.3(3.2-11.5)	18/280	4.6(1.5-7.7)	14/280	5.7(2.4-7.7)	16/280	2.5(0.5-4.5)	8/280
≤ 24 years old	0	0	0	0	0	0	0	0
≥ 25 years old	7.9(3.7-12.1)	18/264	5(1.8-8.2)	14/255	5.2(2.5-7.8)	16/275	2.8(0.7-4.9)	8/255
Consultations at a health centers	0	0/18	0	0/14	0	0/16	0	0/8
Self-treatment groups	0	0/18	0	0/14	0	0/16	0	0/8
Detoxification with Methadone	0	0/18	12.8(13.2-13.2)	1/14	0	0/16	6.6(0)	1/8
Substitution with Methadone	80.5(66.3-94.7)	14/18	52.8(52.5-52.5)	8/14	42.1(14.5-70.2)	7/16	80.1(66.2-96.3)	5/8
Detoxification with other drugs	6.2(6.3-6.3)	1/18	12(11.9-11.9)	2/14	10.7(0-34.5)	1/16	0	0/8
Detoxification without drugs	0	0/18	7.9(7.2-8.7)	1/14	32.4(2.6-61.8)	4/16	0	0/8
Psycho-social rehabilitation center	0	0/18	14.5(11-18)	2/14	0	0/16	0	0/8
At home	0	0/18	0	0/14	1.7(0-3.3)	1/16	22.1(0-50.6)	2/8

	GORI		TELAVI		KUTAISI		RUSTAVI	
Drug treatment and HIV/AIDS prevention	RDS population estimates, % (95% CI)	n/N	RDS population estimates, % (95% CI)	n/N	RDS population estimates, % (95% CI)	n/N	RDS population estimates, % (95% CI)	n/N
Other	13.40-25.2)	3/18	12.8(13.2-13.2)	1/14	17.3(0-34.6)	4/16	6.6(0-15.7)	1/8
Survived "extreme need" with somebody else's help last 12 months	6.4(2.6-10.1)	15/280	4.6(1.4-7.8)	14/280	4.3(1.8-6.9)	12/280	2.2(0.4-4.1)	6/280
≤ 24 years old	0	0/16	0	0/25	0	0/5	0	0/25
≥ 25 years old	6.9(2.9-11)	15/264	5(1.5-8.5)	14/255	4.4(1.7-7.1)	12/275	2.4(0.3-4.5)	6/255
Survived "extreme need" without anybody's help last 12 months	18.1(13-23.2)	60/280	11.1(7.5-14.7)	43/280	21.5(15.8-27.2)	71/280	17.2(12.8-21.5)	60/280
PWID reached with prevention programs								
Aware about HIV testing possibilities and received sterile injecting equipment and condom last 12 months	21.1(15.5-26.7)	66/280	15(10.3-19.7)	50/280	10.7(6.8-15.2)	38/280	11.3(6.6-16)	31/280
≤ 24 years old	9.8(0.4-18.9)	3/16	1.3(0.7-3.4)	1/25	46.4(0-97.4)	2/5	0	0
≥ 25 years old	22.1(16.2-28)	63/264	16.2(11.4-21.1)	49/255	11.6(7.5-14.2)	36/275	12.4(7.4-17.4)	31/255
Program minimal coverage ²⁹	27.8(21.5-34)	86/280	20.4(14.9-25.9)	65/280	20.2(14-26.5)	64/280	13.9(8.9-18.9)	43/280
≤ 24 years old	25.2(5.5-45.2)	5/16	1.3(0.8-3.6)	1/25	47.9(0-95.2)	2/5	1.3(0-3.8)	1/25
≥ 25 years old	27.9(21.6-34.4)	81/264	22.1(16.6-27.5)	64/255	20.6(14.1-25.4)	62/275	15.1(9.7-20.6)	42/255
Program full coverage ³⁰	18.5(13.1-23.9)	57/280	11.7(7.8-15.6)	41/280	9.3(5-13.2)	27/280	10.1(5.6-14.6)	28/280
≤ 24 years old	9.5(0-19.8)	3/16	1.3(0.7-3.3)	1/25	25.1(0-71.3)	1/5	0	0
≥ 25 years old	19.3(13.1-25.5)	54/264	12.6(8.3-17.7)	40/155	8.6(4.9-12.5)	26/275	11.1(6.2-16)	28/255
Received sterile injecting equipment last 12 months	26.5(20.4-32.7)	83/280	20(14.6-25.5)	64/280	19.4(14.4-25.1)	61/280	33(26.4-39.6)	91/280

	GORI		TELAVI		KUTAISI		RUSTAVI	
Drug treatment and HIV/AIDS prevention	RDS population estimates, % (95% CI)	n/N	RDS population estimates, % (95% CI)	n/N	RDS population estimates, % (95% CI)	n/N	RDS population estimates, % (95% CI)	n/N
≤ 24 years old	30.3(10-50.2)	6/16	19.7(2.4-36.4)	5/25	45.8(0-94.1)	2/5	48.6(27.7-69.8)	13/25
≥ 25 years old	26.2(19.3-33.1)	77/264	20.1(14.2-26.1)	59/255	19.5(13.3-24.5)	59/277	31.4(24.6-38.3)	78/255
Received condoms last 12 months	26.4(20.2-32.6)	79/280	16.9(11.9-21.9)	56/280	15.1(10.1-19.3)	48/280	32.2(26-38.5)	89/280
≤ 24 years old	22.4(4.4-41.1)	5/16	14.2(0.3-28.4)	4/25	45.6(0-98)	2/5	54.5(35-74)	14/25
≥ 25 years old	26.8(20.5-33)	74/264	17.1(12.2-22.1)	52/255	14.3(9.6-19.1)	46/275	30.1(23.2-36.9)	75/255
Received brochures/pamphlets/booklet on HIV/AIDS last 12 months	29.4(22.8-35.9)	89/280	18.4(13.3-23.4)	60/280	19.5(14-25.9)	63/280	34.3(27.6-40.9)	99/280
≤ 24 years old	37.9(16.5-59.5)	7/16	16.4(0.7-33.3)	4/25	25.1(0-65.6)	1/5	60.2(41.6-78.8)	16/25
≥ 25 years old	28.7(21.9-35.3)	82/264	18.5(12.9-24.2)	56/255	19.4(14.4-25.2)	62/275	31.7(24.7-38.7)	83/255
Received qualified information on HIV/AIDS last 12 months	25.7(19.4-31.9)	79/280	17.2(12.2-22.2)	53/280	17.1(11.4-23.2)	45/280	32.7(26.1-39.3)	92/280
≤ 24 years old	22.3(4.6-39.7)	5/16	16(0.9-32.5)	3/25	26.8(0-72.9)	1/5	56.6(37.7-75.5)	15/25
≥ 25 year old	25.9(19.5-32.3)	74/264	17.3(11.7-22.9)	50/255	17.9(11.1-23.6)	44/275	30.4(23.7-37.1)	77/255
Heard information about syringe exchange program	87.2(81.5-92.8)	256/280	36.5(30.1-42.9)	134/280	38.9(31.3-46.4)	119/280	45.3(37.2-53.3)	145/280
Received sterile syringes from the program during the last 12 months	24.3(18.2-30.5)	72/256	49.8(38-62.2)	60/134	46(35-56.9)	57/119	28.3(18.9-37.7)	41/145
Top two persons with major influence on continuing drug use								
No one	87.7(83.1-92.3)	252/280	86(81.5-90.7)	247/280	90.7(86.5-95.1)	253/280	84.2(79.4-88.9)	237/280
Needle partner	8.5(4.9-12.2)	20/280	11(6.6-15.3)	26/280	7.7(3.8-11.5)	23/280	10.5(6.8-14.3)	28/280
Top two persons with major influence on quitting drug use								
No one	45.4(38.6-52.1)	132/280	45.1(37.6-52.6)	129/280	35.7(29.4-42.2)	99/280	41.1(34.4-47.9)	111/280
Friend	22.7(16.5-28.9)	56/280	20.6(14.8-26.5)	54/280	23.4(16.9-29.8)	67/280	20.6(15-26.2)	59/280

Table 19: HIV and HCV prevalence (Continued)

	GORI		TELAVI		KUTAISI		RUSTAVI	
Biomarker	RDS population estimates, % (95% CI)	n/N	RDS population estimates, % (95% CI)	n/N	RDS population estimates, % (95% CI)	n/N	RDS population estimates, % (95% CI)	n/N
HIV								
HIV prevalence	3.4(0.8-5.9)	8/280	2(0.1-3.8)	6/280	3.3(1.2-6.1)	9/280	0.9(0-2.1)	2/280
≤ 24	0	0/16	1.9(0.4-4.3)	2/25	0	0/5	0	0/25
≥ 25	3.7(0.9-6.4)	8/264	2(0.1-3.9)	4/255	3.4(0.2-6)	9/275	1(0-2.4)	2/255
HCV								
HCV prevalence	66(58.8-73.3)	188/279	49(40.7-56.3)	139/280	65.2(58.5-72.4)	190/280	50.2(42-58.3)	150/280
≤ 24	0	0	0	0	0	0	0	0
≥ 25	71.1(64.7-77.6)	188/264	53.4(46-61.9)	139/255	66.1(59.6-73.3)	190/275	55(47.3-62.9)	150/255

Table 20: Opioid dependence (Continued)

	GORI		TELAVI		KUTAISI		RUSTAVI	
Drug using behavior	RDS population estimates, % (95% CI)	n/N	RDS population estimates, % (95% CI)	n/N	RDS population estimates, % (95% CI)	n/N	RDS population estimates, % (95% CI)	n/N
Injecting frequency of narcotic analgetics during last 12 months								
Narcotic analgetics injections	91.3(87.1-95.5)	256/280	99(98-100.1)	278/280	98.1(94.8-101)	278/280	85.6(80.7-90.6)	245/280
One month and more	17.9(12.4-23.3)	52/256	10.6(6.9-14.3)	34/278	15.5(11-19.8)	48/278	14.7(9.5-19.8)	41/245
More than one week and several times in the year	9.3(5.5-13.1)	27/256	4.6(1.9-7.2)	19/278	9.9(6.2-13.6)	41/278	6.9(4.2-9.6)	29/245
Injected drugs last 12 months (opioids)								
Codeine	0.7(0-1.8)	2/256	0	0/278	2.8(0.6-4.9)	7/278	0.5(0.1-1.0)	2/245
Heroin	75.9(69.2-82.6)	201/256	64.8 (58.2-71.5)	187/278	80.2(75.2-85.2)	226/278	88.5(83.4-93.6)	219/245
Opium	4.1(1.6-6.6)	16/256	10.9(6.7-15.1)	39/278	7.2(4.2-10.3)	29/278	8.9(4.5-13.2)	27/245

	GORI		TELAVI		KUTAISI		RUSTAVI	
Drug using behavior	RDS population estimates, % (95% CI)	n/N	RDS population estimates, % (95% CI)	n/N	RDS population estimates, % (95% CI)	n/N	RDS population estimates, % (95% CI)	n/N
Cocnar	9.3(4.7-13.9)	27/256	25(19.4-30.5)	76/278	6.3(3.4-9.1)	19/278	3.9(1.5-6.2)	13/245
Methadone	18.9(13.3-24.5)	57/256	11.7(6.8-16.5)	31/278	23(17.3-28.8)	72/278	11.1(6.6-15.6)	36/245
Buprenorphine (Subutex, Suboxon)	51.1(43.2-59)	139/256	74.4(68.4-81)	208/278	73.5(67.7-79.3)	210/278	44.9(37.2-52.5)	126/245
Morphine	18.3(13-23.5)	56/256	6.2(3.3-9.2)	18/278	13.2(8.8-17.7)	38/278	9.2(4.9-13.5)	23/245
Desomorphine	6.6(2.9-10.3)	19/256	6.2(2.9-9.4)	23/278	9.8(5.7-13.8)	33/278	12.2(7.8-16.5)	31/245
Tramadol	0.5(0-1.2)	1/256	0.1(0-0.2)	1/278	0	0/278	0	0/245
Other opioids	0.8(0-2.1)	2/256	0	0/278	0.2(0-0.4)	1/278	0.1(0.1-0.2)	1/245
Withdrawals caused by easing narcotic analgetics usage or dosage reduction								
I haven't stopped	15.1	8/79	14.2(0-29.7)	8/53	16.6(7.8-25.7)	10/89	10(1.4-18)	8/70
yes	82.4(72.4-92.1)	70/79	79.6(79.5-79.5)	43/53	81.3(72.2-90.2)	76/89	90(82-99)	62/70
no	2.5(1.6-3.4)	1/79	6.2(0-22.1)	2/53	2(0.1-4)	3/89	0	0/70
No response	0	0/79	0	0/53	0	0/89	0	0/70
Tolerance/substance taken in larger amount and for longer period than intended ³⁸								
Used more opioids to get the same high ³⁹	82.9(73.8-91.9)	71/79	73.5(59.2-86.2)	43/53	92.3(87.6-96.9)	82/89	88.9(82.2-96.2)	60/70
Use continuous despite knowledge of adverse consequences (e.g., failure to fulfill role obligation, use when physically hazardous) ³⁸								
The idea of missing a fix (or dose) ever made one anxious or worried ³⁹	85.8(77.4-93.8)	71/79	98.1(96.8-99.9)	50/53	96.7 (92.3-100.1)	87/89	93.0(83.8-102.1)	66/70
Characteristic withdrawal symptoms; substance taken to relieve withdrawa ³⁸								
In the morning someone ever used opioids to keep	92.6(85.2-99.8)	76/79	94.1(88.1-100.3)	49/53	95(90.9-99)	85/89	100	70/70

³⁸ DSM-IV= Diagnostic and statistical Manual of mental Disorders indicators

³⁹ RODS= Rapid Opioid Dependence Screen variables

	GORI		TELAVI		KUTAISI		RUSTAVI	
Drug using behavior	RDS population estimates, % (95% CI)	n/N	RDS population estimates, % (95% CI)	n/N	RDS population estimates, % (95% CI)	n/N	RDS population estimates, % (95% CI)	n/N
from feeling dope sick or ever feel dope sick ³⁹								
Clinical experience question (not associated with DSM-IV criteria for opioid dependence or opioid abuse ³⁸)								
Someone worried about use of opioids ³⁹	75.9(52.5-99.4)	59/79	65.1 (49.2-80.7)	37/53	77.3 (65.7-88.6)	69/89	63.8(50.5-76.2)	47/70
Persistent desire or repeated unsuccessful attempt to quit ³⁸								
One found difficult to stop or not use opioids ³⁹	83.7(79.9-87.1)	71/79	76.2(61.5-90.5)	44/53	90.2 (82-98.5)	80/89	84.1(73.1-94.3)	63/70
Much time/activity to obtain, use, recover ³⁸								
One ever needed to spend a lot of time/ energy on finding opioids or recovering from feeling high ³⁹	57.8(40.4-74.7)	51/79	66(52.5-78.8)	37/53	70(59.6-80.2)	68/89	78.1(66.4-89.1)	56/70
Important social, occupational, or recreational activities given up or reduced ³⁸								
One missed important things like family/friend activities, or other things because of opioids ³⁹	73(61.4-84)	63/79	73.8 (61.3-86)	41/53	88.9(81.3-96.4)	81/89	92.8(87.1-99.0)	63/70
OPIOID dependence (RODS score >3)								
yes	88.7(82.7-94.6)	6/79	82.5 (70-94.4)	6/53	95.3(91.7-99)	85/89	95.8(91.8-100.2)	66/70
≤ 24 years old	37.2(0-106)	1/2	100	3/3	100	1/1	80.4(37.9-127.5)	2/3
≥ 25 years old	90.7(84.8-96.6)	5/77	81.1(67.3-93.6)	44/50	95.3(91.5-99.1)	84/88	96.4(92.5-100.4)	64/67

Table 21: Knowledge of Hep C and risk assessment (Continued)

	GORI		TELAVI		KUTAISI		RUSTAVI	
Knowledge of Hep C	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N	RDS_A population estimates, % (95% CI)	n/N
Hep C awareness								
Aware about Hep C state/elimination program (yes)	98.4(96.6-100.3)	277/280	97.7(95.8-99.6)	273/280	99.7(99.2-100.2)	279/280	97.1(95.3-98.9)	272/280
One can get Hep C by sharing meal with someone who is infected (no)	90.4(86.3-94.5)	257/280	79.1(73.1-84.8)	223/280	88.6(84.6-92.6)	242/280	82.5(77.1-87.8)	229/280
One can get Hep C via sexual contact with someone who is infected (yes)	65.6(58.7-72.6)	166/280	59.7(52.9-66.5)	163/280	56.6(50-63.1)	160/280	60.8(53.8-67.7)	169/280
One can get Hep C via handclasp with someone who is infected (no)	94.3(91-97.7)	269/280	89.4(84.2-94.5)	254/280	94.5(91.1-97.9)	265/280	97.1(95.3-98.9)	269/280
One can get Hep C via coughing or sneezing (no)	83.4(76.7-90)	244/280	76.3(69.5-83.1)	218/280	81.1(76-86.4)	230/280	83.9(79.1-88.6)	220/280
One can get Hep C by sharing others private hygiene items such as toothbrush, shaver, or other with someone who is infected (yes)	95.5(92.3-98.7)	268/280	88.1(83.6-92.7)	252/280	97.5(95.6-99.5)	274/280	86.1(80.5-91.6)	247/280

	GORI		TELAVI		KUTAISI		RUSTAVI	
Knowledge of Hep C	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N	RDS_A population estimates, % (95% CI)	n/N
One can get Hep C via sharing spoon, fork, glass, cup or other dishes with someone who is infected (no)	86.7(82.1-91.3)	252/280	78.1(71.7-84.5)	224/280	83.8(78.9-88.8)	235/280	83.4(78.4-88.4)	230/280
One may be infected with Hep C by using a needle/syringe already used by someone else (yes)	100	280/280	97.4(95.7-99.2)	272/280	99.9(99.8-100)	279/280	99.7(99.3-100.1)	279/280
One can get Hep C via touching handles in public spaces or use of public bathrooms (no)	90.6(86.5-94.6)	261/280	86.6(81.3-92.2)	249/280	93.1(88.9-97.4)	263/280	93.1(90.1-96.1)	258/280
Source of information about Hep C state/elimination program								
<i>Harm reduction program</i>	32.6(25.4-39.8)	101/277	4.7(2.5-7.1)	22/273	6.4(3.3-9.4)	22/279	8.4(5.1-11.6)	36/272
<i>TV</i>	53(46.1-59.9)	139/277	62.4(54.7-70)	154/273	57.3(50.4-64.1)	153/279	51.4(44.6-58.3)	135/272
<i>Friend</i>	66.2(60-72.4)	188/277	70.3(64.1-76.4)	201/273	76.7(71.2-82.2)	212/279	84.2(78.9-89.6)	224/272
One may reduce Hep C risk by								
Vaccination	94(91.3-96.7)	247/280	0.6(0-1.8)	1/280	0	0/280	91.3(88.1-94.5)	244/280
Proper condom use	29.3(22.8-35.8)	83/280	38.7(31.6-45.6)	91/280	42.7(36.4-49.1)	120/280	18.7(13.5-23.9)	64/280
Not sharing used needle/syringe	16.3(10.8-21.8)	46/280	82.3(77.4-87.1)	206/280	76(69.8-82.3)	228/280	10.9(6.9-14.9)	30/280
Not using a shared bottle, spoon, boiling pan/glass/container, cotton/filter or water	2.4(0-4.8)	4/280	18.8(13.8-23.8)	51/280	24.9(19.3-30.6)	75/280	0.5(0-1.2)	1/280

	GORI		TELAVI		KUTAISI		RUSTAVI	
Knowledge of Hep C	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N	RDS_A population estimates, % (95% CI)	n/N
Use of sterile medical equipment	49.5(42.8-56.2)	119/280	8.7(5.1-12.4)	28/280	33.3(26.5-40.1)	78/280	42.9(35.7-50.3)	112/280
Other (not using others private hygiene items)	40.6(33.9-47.4)	122/280	29(22.8-35)	85/280	31.7(25.3-38.3)	104/280	28.6(23.2-34)	90/280
Don't know	1.2(0.3-2.1)	12/280	6.5(3.8-9.1)	29/280	0.1(-0.1-0.3)	1/280	1(0.3-1.7)	9/280
No response	0	0/280	0.4(0-0.8)	2/280	0	0/280	0	0/280
Awareness about free of charge Hep C state/elimination program								
Yes	98.8(97.4-100.1)	275/277	97.5(95.6-99.5)	266/273	99.4(98.8-100)	277/279	97.8(96.3-99.3)	263/272
Knows where Hep C testing can be done								
Yes	88.2(83.3-93.1)	251/280	62.1(55-69.3)	184/280	83.5(77.8-89.3)	239/280	60.3(53.6-66.8)	170/280
No	11.8(6.9-16.7)	29/280	37.5(30.4-44.6)	95/280	16.5(10.7-22.2)	41/280	37.3(30.9-44)	103/280
Don't know	0	0/280	0.4(0-0.9)	1/280	0	0/280	2.4(0.6-4.2)	7/280
Voluntary Hep C testing								
During the last two years	73(66.4-79.6)	207/280	48.2(41.5-55)	141/280	66.9(59.8-74)	189/280	35.4(27.4-43.3)	106/280
From two to five years period	9.3(5.3-13.3)	29/280	9.1(5.4-12.9)	31/280	7.5(4.2-10.8)	26/280	10.6(6.7-14.5)	29/280
five years ago	3.1(0.7-5.5)	8/280	6(2.2-9.7)	13/280	7(3.1-10.9)	19/280	5.5(2.4-8.7)	14/280
Never been tested	14(8.7-19.3)	35/280	35.9(28.9-42.8)	93/280	18.6(12.6-24.7)	46/280	47.6(39.2-55.9)	128/280
Do not remember	0.6(0-1.5)	1/280	0.8(0-1.9)	2/280	0	0/280	0.9(0-2)	3/280
Reason of not testing								
Afraid of result	2.7(2.6-2.6)	1/35	13.5 (2.7-24.4)	12/93	20.2(5.4-35)	8/46	10.3(4.8-15.8)	14/128
Don't need it	36.8(19.8-54.3)	11/35	29(17.9-39.9)	27/93	41.8(23.8-59.8)	19/46	38.2(28.8-47.1)	57/128
Do not think about it	46.2(29.1-63.1)	16/35	39.4(29.1-49.9)	36/93	29.4(8.5-50.3)	12/46	35.3(26.6-44.7)	39/128
Hep C treatment								

	GORI		TELA VI		KUTA ISI		RUSTAVI	
Knowledge of Hep C	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N	RDS_A population estimates, % (95% CI)	n/N
During the last 2 years	19.3(13.8-24.9)	54/245	12.1(6.8-17.5)	23/187	12.5(7.3-17.7)	28/234	9.7(3.4-15.8)	18/152
From two to five years period	1.1(0.2-1.9)	2/245	0.9(0.7-1.2)	1/187	0.2(0-0.5)	1/234	0.1(0-0.2)	1/152
Five years ago	0.7(0-1.7)	1/245	0.1(0-0.2)	1/187	4.2(1.5-6.9)	12/234	2.4(0-5.6)	2/152
Never been treated	78.9(73.2-84.6)	188/245	86.8(81.5-92.2)	162/187	83.1(77.8-88.4)	193/234	87.7(81.2-94.4)	131/152
Reason of not treating								
I am not infected	40(31.5-48.7)	72/188	40(31.1-49)	63/162	34.3(25.8-42.8)	62/193	44.2(32.3-56.6)	52/131
Doctor did not suggest	4.8(1.2-8.4)	6/188	6.6(2.3-11.1)	8/162	3.9(1.1-6.7)	7/193	3.7(0-7.5)	5/131
Expensive	7.9(3.5-12.3)	16/188	14.6(8.5-20.6)	29/162	18(12.2-23.9)	39/139	16.8(9.8-24)	21/131
Because of side effects	2.6(0-5.7)	6/188	2.1(0-5.4)	2/162	4.5(1.4-7.5)	9/139	4.9(1-9.1)	5/131
I am in a waiting list	16.9(10-23.9)	27/188	0.7(0.2-11.9)	10/162	7.4(3.2-11.5)	13/139	13.1(5.9-20.3)	11/131
Completed treatment								
Yes	77.4(63.4-91.3)	45/57	83.7(72.3-94.6)	22/25	75.5(65.3-85.7)	30/41	53.7(9.9-95.2)	15/21
Currently on treatment	18(4.1-32.1)	9/57	16.3(5.4-27.7)	3/25	14.2(4.2-24.2)	4/41	38.2(0.8-77.4)	5/21
No, stopped treating	4.6(0-9.2)	3/57	0	0/25	10.4(5.1-15.4)	7/41	8.1(0-22.2)	1/21
Don't know	0	0/57	0	0/25	0	0/41	0	0/21
What was the reason to stop treatment								
Side effects	0	0/3	0	0	50.5(9.1-91.1)	4/7	100	1/1
Other	100	3/3	0	0	49.5(9-90.9)	3/7	0	0/1
Financial problems	22.9(0-49.6)	1/3	0	0	19.9(0-54.7)	1/3	0	0
Recovered from Hep C								
Yes	88.1(80.3-97.1)	32/45	73.9(52.9-93.7)	18/22	81.7(66.5-96.9)	25/30	77.8(45.3-107.2)	14/15
No	0	0/45	15(0-31.1)	2/22	18.3(3.1-33.5)	5/30	0	0/15
Don't know	11.9(2.9-19.7)	13/45	11.1(2.4-20.1)	2/22	0	0/30	22.2(0-54.7)	1/15
Hep C testing after recovery	66.4(51.3-81.6)	21/32	82.6(0-169.9)	11/18	70(55-84.8)	18/25	81.7(63.2-101.4)	11/14

	GORI		TELAVI		KUTAISI		RUSTAVI	
Knowledge of Hep C	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N	RDS-A population estimates, % (95% CI)	n/N	RDS_A population estimates, % (95% CI)	n/N
Hep C reinfection after treatment	1.2(-0-20.4)	1/21	0	0/11	0	0/18	0	0/11
Where do you prefer to receive Hep C testing and treatment								
Specific medical facility in my city	77.7(71.8-83.5)	201/280	86.9(83.2-90.6)	226/280	96(93.4-98.7)	267/280	94.7(92.3-97.2)	252/280
Methadone program in my city	0	0/280	0.2(0-0.5)	1/280	0	0/280	0.2(0-0.4)	2/280
Harm reduction service center in my city	12.8(7.8-17.8)	38/280	0.9(0.2-1.6)	6/280	2.5(0.6-4.5)	9/280	0.8(0-1.8)	3/280
other service provider in my town	0	0/280	0.6(0-1.5)	1/280	0	0/280	0(0-0.1)	1/280
Other	9.5(5.5-13.6)	41/280	11.4(7.8-15.1)	46/280	1.4(0-3)	4/280	4.2(1.9-6.6)	22/280
It doesn't matter, if it is free	31.4(12.2-52.4)	7/41	15.5(0-42.6)	3/46	75.6(44.6-107.5)	2/4	0	0/22

Annex 3: RDS forms

Questionnaire identification number: _____

Coupon number: __/ __/__/__/__/__/__/__/__/__

Questions About Your Recruiter (Do not ask seeds)

Questions	Responses
How would you describe your relationship to the person who referred you to this study, that is, the person who gave you this coupon? (check all that apply)	<input type="checkbox"/> Drug Friend <input type="checkbox"/> Friend <input type="checkbox"/> Husband/wife <input type="checkbox"/> Sex partner <input type="checkbox"/> Parent (mother/father) <input type="checkbox"/> Sibling (brother/sister) <input type="checkbox"/> Offspring (daughter/son) <input type="checkbox"/> Neighbor <input type="checkbox"/> Person from the same district <input type="checkbox"/> Co-worker <input type="checkbox"/> Relative <input type="checkbox"/> Stranger <input type="checkbox"/> Other
How do you know the person who referred you to this study? (check all that apply)	<input type="checkbox"/> Person I have sex with often, my main sex partner <input type="checkbox"/> Person I have sex with occasionally <input type="checkbox"/> Person I use drugs with <input type="checkbox"/> Person I buy drugs with <input type="checkbox"/> Person I buy drugs from <input type="checkbox"/> Person I share needles with <input type="checkbox"/> Person I know through other drug user <input type="checkbox"/> Other
Not including the time you received your coupon, how many times have you seen your recruiter during the last four weeks?	_____
How old is your recruiter? (Probe:) What would be your best guess?	_____ years
About how long have you known your recruiter?	_____ years Or _____ months
How close are you to your recruiter?	<input type="checkbox"/> Very close <input type="checkbox"/> Somewhat close <input type="checkbox"/> Not very close
How often do you see your recruiter?	<input type="checkbox"/> Every day <input type="checkbox"/> Once a week <input type="checkbox"/> Once a month <input type="checkbox"/> Less than once a month

Client Checklist Form

To be filled out by authorized personnel

Date:												
Coupon number:	<div style="display: flex; justify-content: space-around;"> <div style="width: 20px; height: 20px; border: 1px solid black;"></div> <div style="width: 20px; height: 20px; border: 1px solid black;"></div> <div style="width: 20px; height: 20px; border: 1px solid black;"></div> <div style="width: 20px; height: 20px; border: 1px solid black;"></div> <div style="width: 20px; height: 20px; border: 1px solid black;"></div> <div style="width: 20px; height: 20px; border: 1px solid black;"></div> <div style="width: 20px; height: 20px; border: 1px solid black;"></div> <div style="width: 20px; height: 20px; border: 1px solid black;"></div> <div style="width: 20px; height: 20px; border: 1px solid black;"></div> <div style="width: 20px; height: 20px; border: 1px solid black;"></div> <div style="width: 20px; height: 20px; border: 1px solid black;"></div> <div style="width: 20px; height: 20px; border: 1px solid black;"></div> </div>											
Questionnaire number:	<div style="display: flex; justify-content: space-around;"> <div style="width: 20px; height: 20px; border: 1px solid black;"></div> <div style="width: 20px; height: 20px; border: 1px solid black;"></div> <div style="width: 20px; height: 20px; border: 1px solid black;"></div> <div style="width: 20px; height: 20px; border: 1px solid black;"></div> <div style="width: 20px; height: 20px; border: 1px solid black;"></div> <div style="width: 20px; height: 20px; border: 1px solid black;"></div> <div style="width: 20px; height: 20px; border: 1px solid black;"></div> <div style="width: 20px; height: 20px; border: 1px solid black;"></div> <div style="width: 20px; height: 20px; border: 1px solid black;"></div> <div style="width: 20px; height: 20px; border: 1px solid black;"></div> <div style="width: 20px; height: 20px; border: 1px solid black;"></div> <div style="width: 20px; height: 20px; border: 1px solid black;"></div> </div>											
Signature												
The participant can join the study.	<input type="checkbox"/> Yes	<input type="checkbox"/> No ¹										
Informed consent has been signed.	<input type="checkbox"/> Yes	<input type="checkbox"/> No ²										
The participant has completed the questionnaire.	<input type="checkbox"/> Yes	<input type="checkbox"/> No										
Counselor has completed the network size form.	<input type="checkbox"/> Yes	<input type="checkbox"/> No										
Counselor has counseled participant.	<input type="checkbox"/> Yes	<input type="checkbox"/> No										
Blood sample taken.	<input type="checkbox"/> Yes	<input type="checkbox"/> No										
Recruitment coupons released.	<input type="checkbox"/> Yes	<input type="checkbox"/> No										
Primary incentive paid.	<input type="checkbox"/> Yes	<input type="checkbox"/> No										
Secondary incentive paid.												
First	<input type="checkbox"/> Yes	<input type="checkbox"/> No										
Second	<input type="checkbox"/> Yes	<input type="checkbox"/> No										
Notes:												

1 – Please fill non eligibility criteria form

2 – Please fill refusal form

Form has been entered into Database ☒

Ineligibility Form

(To be completed by the screener)

Instructions: Please complete a row on this form for each person you contact who does NOT meet the inclusion criteria to participate in the study.

Ineligibility Codes				
1	2	3	4	5
Is not an PWID	Is an PWID, but has not injected drugs during the last month	Under 18 years	Not from the geographic area	Other, specify:

#	Coupon Number (Take away the coupon and write the number in this column)	Date	Reason for Non-Eligibility (Write the code in this column)	If Other, Specify	Signature of the Screener
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					

Refusal Form

To be completed by the screener.

Instructions: Please complete a row on this form for each person who meets the inclusion criteria but refuses to participate in the study.

Refusal Codes					
1	2	3	4	5	6
Didn't want to sign consent	Didn't want to answer questions	Fear of being identified	No time*	Did not want to give blood	Other, specify:

#	Coupon Number (Take away the coupon and write the number in this column)	Date	Reason for Refusal (Write the code in this column)	If Other, Specify	Signature of the Screener
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					

** Probe whether or not the person willing to come back in later time. If yes, hold his/her coupon, put it in an envelope, and try to make an appointment with him/her for the interview.*

Financial Reporting Form

Instructions: Coupon manager must complete this form each day for each seed. The date primary incentive was given (first column) is the same date the participant was interviewed.

Seed number: _____

Date: _____

Date primary incentive given	Coupon number	Quest. number	RDS coupons given	Date secondary incentive given*	Expirati on date (two weeks)	Running total for primary incentive	Running total for secondary incentive
		Total					

Coupon Tracking Form

Instructions: The coupon tracking form must be completed for each seed each day by the screener.

Seed number: _____

Serial number	Referral Coupon Numbers					
	Questionnaire number	Date	Coupon Number	Coupon 1	Coupon 2	Coupon 3
1.						
2.						
3.						
4.						
5.						
6.						
7.						
8.						
9.						
10.						
11.						
12.						
13.						
14.						
15.						
16.						
17.						
18.						
19.						
20.						

Coupon Rejecter Questionnaire

Questionnaire identification #: _____ Coupon #: _____

Instructions: Collect this information face-to-face from returning recruiters *each* time they come to collect their compensation.

Name of Interviewer: _____

Date of Interview: __ / __ / __ /

1. Is this the first time you have been here to collect compensation?

☐ Yes *If yes, continue.*

☐ No *If no, answer questions for the period of time between when the participant was last here and filled out this same questionnaire and now.*

2. How many coupons did you give out? _____ (*Between the last time you came here to receive compensation and now. If > zero, complete coupon rejecter questionnaire.*)

3. How many people refused to accept coupons? _____ (*If zero, do not complete the rest of this questionnaire. If > zero, continue.*)

Annex 4: Study questionnaire

Questionnaire Identification Number _____

Questionnaire is Coded as:

Questionnaire is Word Processed by:

Bio Behavioral Surveillance Study among People Who Inject Drugs in Georgia 2014-2015

City _____

Year _____

Partner Organization: _____ Bemoni _____

Introduction: "My name is..... Curatio International Foundation and Bemoni Public Union implement a joint project titled "Establishment of evidence based for HIV/AIDS National Program, by strengthening surveillance system", funded by the Global Fund. Did you take an interview over the last five weeks of this study?

Interviewer: If somebody has already taken an interview with the person you are talking, don't take another one. Tell him/her, that you cannot re-interview him/her. Thank the person and finish the conversation. If nobody has taken an interview with the person in question, continue.

Confidentiality and consent: "I am planning to ask you several questions that are hard to answer by some people. Your responses will be kept confidential. The questionnaire will not show your name and will never be referred to in connection with the information that you will share with us. You are not obliged to answer all my questions, and whenever you wish, you may refuse to answer my questions. You may finish the interview at any time per your desire. However, we would love to note that your answers would help us better understand what people think, say and do in view of certain types of behavior. We would highly appreciate your input to this study.

Interviewer's Code: _____

(Interviewer's signature certifying that the respondent has verbally agreed to the interview)

Respondent 1	
Date	<input type="text"/>
Interviewer	<input type="text"/>
Result	<input type="text"/>

Result Codes: 1. Completed; 2. Partially Completed; 3. Refusal; 4. other ____ (please specify)

Date and time of interview: /____/date/____/hour/____/minute/

Signature: _____

Q1. City:

1. Tbilisi
2. Gori
3. Telavi
4. Zugdidi
5. Batumi
6. Kutaisi
7. Rustavi

Q2. Respondent ID

Q3. How did you establish a contact with the respondent?

1. He is a patient/client of the counterpart organization
2. He has been picked out on a snowball basis
3. Other _____ (please specify)

Q4. Place of the interview: (Field of place of institution):

Q5. How many times have you participated in the same survey?

_____ times		<i>Continue</i>
None	77	Go to A1.
No response	99	

Q6. Did you find out the result of your HIV test?

Yes	1	Go to A1.
No	2	<i>Continue</i>
I haven't done the test	3	Go to A1.
No response	99	

Q7. Why not?

1. Forgot
2. Did not interest the results
3. I was afraid of the positive result
4. I could not manage to go back
5. From my point of view, the testing was not necessary at all (I was healthy – did not have any symptoms)
6. Other (please specify) _____
88. Don't know
99. No response

Section A. Respondent's Demographic Data**A1. Where do you live presently?**

1. City (please indicate) _____
 - 1.1 District of the city (please indicate) _____
 - 1.2 Village (please indicate) _____
99. No response

A2. How long have you been living in this place?

(Please write down only the number of years, e.g. 2 years and 5 months as 3 years)

_____ years

77. Always (since birth)
99. No response

A3. Are you an IDP or refugee?

1. Yes
2. No
99. No response

A4. Within the last 12 months have you left the city or the current place of residence for more than a month?

1. Yes
2. No
88. Don't know
99. No response

A5. How old are you?

/___/___/ years old

A6. Gender

1. Male
2. Female

A7. What is your nationality?

1. Georgian
2. Other (please indicate) _____
99. No response

A8. Level of Education completed?

1. None
2. Primary (1- 4 classes)
3. Secondary (school, technical school, vocational school)
4. Incomplete Higher
5. Higher
99. No response

A9. Employment

1. Pupil/student
2. Have a permanent job
3. Have a temporary job
4. Retired/disabled
5. Unemployed
99. No response

A9.1 How much is your monthly income?

1. Less than 100 GEL
2. 100-300 GEL
3. 300-500 GEL
4. 500-700 GEL
5. 700-1000 GEL
6. 1000 GEL and more
99. No response

A10. What is your marital status?

1. Married
2. Divorced/Separated for ever
3. Widow/widower
4. Has never been married
5. Other (please indicate)_____

A11. With whom do you live now?*(Interviewer: Do not read out the options loud; choose the option below relevant to the response)*

1. With a spouse
2. With a partner
3. Single
4. With parents/relatives
5. Other:_____ (Please indicate)
99. No response

A12.a Have you ever been imprisoned?

1. Yes
2. No
99. No response

A12. Penalty for drug usage: (Please read out the options and match the responses with the relevant options in the table below)

	Yes	How many times?	No	No response
1. Have you detained in administrative sentence because of your drug use during the last 12 months?	1		77	99
2. Have you imprisoned before trial because of your drug use during the last 12 months?	1		77	99
3. Have you imprisoned because of your drug use during the last 12 months? <i>(If "yes", continue, unless go to A13).</i>	1		77	99
3.1 After your release from prison last time, when did you take a drug injection?	____ Days ____ Months 88. Don't remember			99

A13. Within the last month how often have you consumed alcoholic beverages, such as beer, wine, vodka, other?

1. Every day
2. More than once a week
3. Once a week
4. Rarely
5. Never (don't read out loud)
6. Other (please indicate) _____
99. No response

Section B. Drug Usage History**B1. How old were you when you start using drugs? I only mean any kind of drugs used for non-medical purposes, including those to be swallowed, smoked and/or injected**

_____ years old (please indicate an exact age)

B2. How old were you when you took the first drug injection?

_____ years old (please indicate an exact age)

B3. How long ago realized that you are depending on injection drug? (Please indicate only a number of years, or months, or both)

____ years old

77. Don't think I'm depended on drug

99. No response

(Interviewer: If in the question B3 respondent indicated "5 years or less " or "Don't think I'm depended on drug " continue, unless go to B4)

B3.1. During the last 5 years have you received any of the following products and/or information with no money (several responses can be acceptable)

	Yes	No	Don't know	No response
1. Brochures/pamphlets/booklets on AIDS	1	2	88	99
2. Qualified information on AIDS	1	2	88	99
3. Condoms	1	2	88	99
4. Needle/syringe	1	2	88	99
5. Other (please specify)_____	1	2	88	99

B4. Within the last 6 months, when you inject drugs, do you inject repeatedly with many of the PWIDs, that is, you are a regular injecting group?

Yes	1	Continue
No, alone	2	Go to B5
No, with other PWIDs	3	
Don't know	88	
No response	99	

B4.1 How many PWIDs are members of your regular injecting group?

_____ (please indicate an exact number)

B5. Which drugs have you used within the last month and which one did you inject?

(Do not read out the options loud; choose the option below relevant to the response; several responses can be acceptable)

	Consumed Last Month		Injected Last Month	
	Yes	No	Yes	No
1. CNS depressants				
1.1 Barbiturates (_____)	1	2	1	2
1.2 Tranquilizes (_____)	1	2	1	2
1.2.1 Zopiclone	1	2	1	2
1.2.2 Zaleplon	1	2	1	2
1.2.3 Diazepam	1	2	1	2
1.2.4 Nitrazepam	1	2	1	2
1.2.5 Reladorm	1	2	1	2
1.3 Inhalants (_____)	1	2	1	2
1.4 Antihistamines (_____)	1	2	1	2
1.5 Other depressants (_____)	1	2	1	2

1.5.1 Baclofen	1	2	1	2
1.5.2 Gabapentin	1	2	1	2
1.5.3 Pregabalin	1	2	1	2
2. Narcotic analgesics				
2.1 Codeine				
2.2 Heroin	1	2	1	2
2.3 Opium	1	2	1	2
2.4 Poppy	1	2	1	2
2.5 Methadone	1	2	1	2
2.6 Subutex	1	2	1	2
2.7 Morphine	1	2	1	2
2.8 Dezomorphine ("Crocodile")	1	2	1	2
2.9 Tramadol	1	2	1	2
2.10 Other Opiates (_____)	1	2	1	2
3. CNS stimulates				
3.1 Cocaine	1	2	1	2
3.2 Amphetamine	1	2	1	2
3.3 Ecstasies				
3.4 Metamphetamine (Vint)	1	2	1	2
3.5 Methcathinone (Jeff)	1	2	1	2
3.6 Other stimulates (_____)	1	2	1	2
4. Hallucinates				
4.1 LSD	1	2	1	2
4.2 Hemp (marijuana, hashish, anasha)	1	2	1	2
4.3 Cyclodol		2	1	2
5. Combination (please specify) _____	1	2	1	2
6. Other (please specify) _____	1	2	1	2
7. New psychoactive products				
7.1 Bio	1	2	1	2
7.2 Bio -LSD	1	2	1	2
7.3 Cristal, shower salt	1	2	1	2
8. Other psychoactive products				
8.1 Tropicamide	1	2	1	2
8.2 Magitus	1	2	1	2
Don't know/don't remember	88		88	
No response	99		99	

(Interviewer: If in the question **B5** respondent mentioned usage of some drugs from "section B" continues, unless **go to B6**)

B5.1 You mentioned, that you have injected _____ (Indicate drugs from section B). During the last 12 months have you been injecting this drug with a continuous manner, every day?

Yes, for a month and over	1	Continue
Yes, everyday in a week and frequently in a year	2	
No	3	
Don't remember	88	Go to B6
No response	99	

B5.2 Did you feel bad (cold turkey symptoms) when you tried to stop drug usage or decreased dosage.

1. I have never stopped injecting drugs
2. Yes
3. No
88. Don't know
99. No response

B6. When did you inject drugs last?

1. _____ days ago (Interviewer: If the answer is "Today" please specify 0)
88. Don't remember
99. Refused to answer (**go to B8**)

B7. How many times did you take drugs that day?

1. _____
88. Don't remember
99. Refused to answer

B8. Which drug did you inject at last?

1. _____
88. Don't remember
99. Refused to answer

B9. (If you did not take the last shot today or yesterday) Can you tell me why didn't you take drugs today or yesterday? (Please read out the options below and match them with the responses) **Maybe you had several reasons; if it is so, please indicate all. After the answer, please ask once more Besides these reasons, were there any other reasons?** *(Several responses are acceptable)*

1. Had no money
2. Had no desire
3. Couldn't get drugs
4. I'm receiving treatment
5. Other (please indicate) _____
6. Injected today or yesterday
99. No response (don't read out)

B10. Within the last month how often did you inject drugs?

1. Once a month
2. Several times a month
3. Once a week
4. 2-3 times a week
5. 4-6 times a week
6. Once a day
7. Several times a day
8. Have not injected (*don't read out*)
88. Don't know
99. No response

Section C. Needle Sharing Behavior

C1.1 Have you ever used a needle/syringe that was used by somebody else before?

- 1. Yes
- 2. No
- 88. Don't know
- 99. No response

C1.2 Have you ever used a needle/syringe that was used by yourself before?

- 1. Yes
- 2. No
- 88. Don't know
- 99. No response

C2.1 At last, when you injected drugs, have you ever used needle/syringe that was used by anybody?

- 1. Yes
- 2. No
- 88. Don't know
- 99. No response

C2.2 At last, when you injected drugs, have you ever used needle/syringe that was used by you?

- 1. Yes
- 2. No
- 88. Don't know
- 99. No response

(Interviewer: If C2.1 and C2.2 is "No", go to C2.4)

C2.3 When you last injected the drugs, did you use a needle/syringe that was left at a place of gathering by somebody else (e.g. Where the drugs were prepared, the dedicated flat, or elsewhere)?

- 1. Yes
- 2. No
- 88. Don't know
- 99. No response

C2.4 If many people were there, how do you think, how many people used the shared needle?

- 1. _____ (please specify the number)
- 77. I was alone
- 88. Don't know
- 99. No response

C3.1 In the case of injection before the last usage, did you use a needle/syringe that had been used by anybody else before?

- 1. Yes
- 2. No
- 88. Don't know
- 99. No response

C3.2 In the case if injection before the last usage, did you use a needle/syringe that had been used by you before?

- 1. Yes
- 2. No
- 88. Don't know

99. No response

(Interviewer: If C3.1 and C3.2 is "No", go to C3.4)

C3.3 Did you then use a needle/syringe that was left at the place of gathering by somebody else, or by you (of drug preparing, or some other place)?

1. Yes

2. No

88. Don't know

99. No response

C3.4 If several people were there at that time, how do you think, how many people could have used the shared needle/syringe?

1. ____ (please specify the number)

77. I was alone

88. Don't know

99. No response

C4. During the last month when you injected the drug how often did it with the needle/syringe, which was used by somebody else?

1. Always

2. Almost always

3. Sometimes

4. Once

5. Never

88. Don't know

99. No response

C5. During the last month when you injected the drug how often did it with the same needle, which was used by you?

1. Always

2. Almost always

3. Sometimes

4. Once

5. Never

88. Don't know

99. No response

(Interviewer: If C4 and C5 answers are "Never" – go to C9)

C6. How many times did you clean needle/syringe that had been used by you or by others last month?

Always	1	Continue
Almost always	2	
Sometimes	3	
Once	4	
Never	5	Go to C7
Don't know	88	
No response	99	

C6.1. If you cleaned the needle/syringe, how did you do it? (several responses are acceptable)

	Yes	No	Don't know	No response
1. With water (boiled, not-boiled, hot)	1	2	88	99
2. With disinfection solution	1	2	88	99
3. Boil the needle/syringe	1	2	88	99
4. Another method (please specify)_____	1	2	88	99

C7. During the last month, did you use a needle/syringe that had been used by any of the following people? (several responses are available)

	Yes	No	Don't know	No Response
1. Your usual partner in sex (girlfriend)	1	2	88	99
2. Partner in sex whom you didn't know before	1	2	88	99
3. Someone from the drug-addict community (drug-related friend)	1	2	88	99
4. Drug trafficker	1	2	88	99
5. Stranger	1	2	88	99
6. Friend	1	2	88	99
7. Other (please specify):_____	1	2	88	99

C8. During the last month with how many different drug user partners did you share a needle/syringe? (Count all those people with whom you shared a needle/syringe)

1. _____ (Number of Partners)

88. Don't know

99. No response

C9. During the last month how many times did you give the used needle/syringe to others?

Always	1	<i>Continue</i>
Almost always	2	
Sometimes	3	
Once	4	
Never	5	Go to C11
Don't know	88	
No response	99	

C10. When you gave an used needle/syringe to others for using, did you or they, whom did you give, clean them before usage?

Always	1	<i>Continue</i>
Almost always	2	
Sometimes	3	
Once	4	
Never	5	Go to C11
Don't know	88	
No response	99	

C10.1. If you or they, whom did you give, cleaned the needle/syringe, how did you do that?
(several responses are acceptable)

	Yes	No	Don't know	No response
1. With water (boiled, not-boiled, hot)	1	2	88	99
2. With disinfection solution	1	2	88	99
3. Boil the needle/syringe	1	2	88	99
4. Another method (please specify)_____	1	2	88	99

C11. When you last threw away the used needle, how did you do that? *(Do not read out the options. Match the responses to the options below. If the respondent's answer is different from the below presented options, take note of the full answer).*

1. Threw the needle into the garbage bin without a cap
2. Broke the needle and threw into the garbage bin
3. Threw the needle into the garbage bin with a cap
4. Put into a bottle/can/boiling pan and left there
5. Throw on the ground
6. Burnt it in a stove
7. Other (please specify) _____
99. No response

C12. During the last month how often have you used new and unused needle/syringe?
(Compare C4 answers)

1. Always
2. Almost always
3. Sometimes
4. Never
88. Don't know
99. No response

C13. Can you actually get new and unused needles and syringes whenever you need them?

Yes	1	<i>Continue</i>
No	2	Go to C15
Don't know	88	
No response	99	

C14. Where do you get/buy new needles/syringes? (several responses are available)

	Yes	No
1. Drugstore	1	2
2. Shop	1	2
3. Hospital	1	2
4. Family/Relatives	1	2
5. Partner in sex	1	2
6. Friends	1	2
7. Other injection drug user	1	2
8. Drug trafficker	1	2
9. Syringe exchange programs	1	2
10. Other (please specify) _____	1	2

C15. During the last month how many times have you used a syringe that had already been filled with drugs without your presence?

1. Always
2. Almost always
3. Sometimes
4. Once
5. Never
88. Don't know
99. No response

C16. During the last week how many times did you take drugs after it had been filled with a solution from a syringe that had been used by somebody else? *(Interviewer: Whether it was filled from the "front" or the "back", Please explain to the respondent the filling technique from the front and the back ends. Make sure he understands what the question is about.)*

1. Always
2. Almost always
3. Sometimes
4. Once
5. Never
88. Don't know
99. No response

C17. During the last month when you injected drugs, how many times did you use a shared syringe with left drug in it *(portion used by somebody else, remaining left to you)?*

1. Always
2. Almost always
3. Sometimes
4. Once
5. Never
88. Don't know
99. No response

C18. During the last month when you injected drugs, how many times did you use shared bottle, spoon, boiling pan/glass/container, cotton/filter or water?

1. Always
2. Almost always
3. Sometimes
4. Once
5. Never
88. Don't know
99. No response

C19. During the last month how many times did you take solution from the shared container?

1. Always
2. Almost always
3. Sometimes
4. Once
5. Never
88. Don't know
99. No response

(Interviewer: match the C15 – C19 responses to C20)

C20. Please recall the last instance of taking drugs and tell me:

	Yes	No	Don't know	No response
1. Did you use a syringe after it was already filled by somebody else?	1	2	88	99
2. Did you use a syringe after it was filled by somebody else from his/her used syringe?	1	2	88	99
3. Did you inject drug it was left by somebody in the needle?	1	2	88	99
4. Did you use a shared bottle, spoon, boiling pan/glass, container, cotton/filter or water?	1	2	88	99
5. Did you take solution from the shared container?	1	2	88	99

C21. Over the last year have you injected drugs in another country/city/town?

C21.a Over the last year have you injected drugs in another country/city? If the answer is "No", Go to C22				C21.b which drug have you injected?			C21.c when you injected that drug, did you used needle/syringe that was used by anyone else?			
Yes s 1	No 2	Don't know 88	No response 99	Please specify	DK	NR	Yes	No	DK	NR
1.1 Other cities of Georgia (please specify) _____					88	99	1	2	88	99
1.2 _____					88	99	1	2	88	99
1.3 _____					88	99	1	2	88	99
1.4 _____					88	99	1	2	88	99
1.5 _____					88	99	1	2	88	99
2.1 In other countries (please specify) _____					88	99	1	2	88	99
2.2 _____					88	99	1	2	88	99
2.3 _____					88	99	1	2	88	99
2.4 _____					88	99	1	2	88	99
2.5 _____					88	99	1	2	88	99

C22. Did you experience overdoses in the last year?

Yes	1	Go to C23
No	2	
Don't remember	88	
No response	99	

C22.1 What kind of help did you get? (Several responses are acceptable)

1. Emergency aid
2. Hospital treatment
3. Other _____ (please specify)

C23. Did you try to stop drug use without medical help during the last 12 months?

1. Yes
2. No
3. Had no overdoses
88. Don't know
99. No response

C24. Have you ever got special treatment because you are a drug user?

Yes	1	<i>Continue</i>
No	2	Go to 0
Don't know	88	<i>Continue</i>
No response	99	

C25. Have you applied to a medical facility, specialized center to get a treatment or specialized assistance because you are a drug user during last 12 months?

Yes	1	<i>Continue</i>
No	2	Go to C30
Don't know	88	<i>Continue</i>
No response	99	

C26. Have you currently got any medical treatment, or have you ever taken specialized treatment because you are a drug user?

Currently taking a medical treatment (Match to B9)	1	<i>Continue</i>
Used to take a medical treatment during last 12 months, but now I'm not taking	2	
No	3	Go to 0
No response	99	

C27. What kind of medical treatment or specialized assistance have you taken over 12 months? (Do not read out the options. Ask also this: "What other treatments have you taken? Several responses are acceptable)

	Yes	No
1. Consultations	1	2
2. Self-treatment groups	1	2
3. Detoxification with Methadone	1	2
4. Substitution with Methadone	1	2
5. Detoxification with other drugs	1	2
6. Detoxification without drugs	1	2
7. Psycho-social rehabilitation center	1	2
8. At home	1	2
9. Other (please write down) _____	1	2
88. Don't know	88	
99. No response	99	

C28. Can you tell me in which country/city did you take medical treatment?

1. Tbilisi
2. Batumi
3. Other city of Georgia (please indicate) _____
4. Foreign country
99. No response

C29. Did you want to get another treatment or specialized assistance, but couldn't get it?

Yes (I'd desire, but couldn't get it) detoxification	1	<i>Continue</i>
Yes (I'd desire, but couldn't get it) substitution with Methadone	3	
No	2	Go to D1
Don't know	88	
No response	99	

C30. Why you did not get treatment or specialized assistance during last 12 months? (*do not read out, more than one response is possible, match responses to given options*)

1. Have no desire
2. It is very expensive/ did not have enough money
3. Because of location
4. I applied, but wasn't enough place
5. I applied, but conditions were unsatisfactory
6. Couldn't find good specialist/doctor
7. Other (please specify)_____
88. Don't know
99. No response

Section D. Sexual Life Record (*For male*)

D1. How old were you when you had the first sexual contact?

_____ years old (please indicate the exact age)

77. Never had it (**go to G1**)
88. Don't know
99. No response

D2. Have you had sex with a female partner during the last year?

Yes	1	<i>Continue</i>
No	2	Go to D4
No response	99	

D3. In total with how many female sexual partners have you had sex over the last 12 months?

_____ (please specify the exact number)

88. Don't know
99. No response

D3.1 How many of those were "regular sexual partners"? (*i.e. spouse or live-in partner, or sex partner you do not live with, but have regular sexual contact. Regular sexual contact means contact that lasts more than one year, or less than one year with an intention to continue it*)

_____ (number)

88. Don't know
99. No response

D3.2 How many of your female sexual partners were "paid" ones? (*i.e. those ones with who you had a sexual contact in exchange for money or drugs*)

_____ (number)

88. Don't know
99. No response

D3.3 How many of those sexual partners were “occasional” ones? (*i.e. those who are not regular partners and never have paid money in exchange for sex*)

_____ (number)

88. Don't know

99. No response

D3.4 Which one was your last sexual partner?

1. Regular

2. Paid

3. Occasional

88. Don't know

99. No response

D3.5 Did you use condom during last sexual contact?

1. Yes

2. No

88. Don't know

99. No response

D4. We talked about your female partners. Have you ever had a male sexual partner?

Yes	1	<i>Continue</i>
No	2	Go to E1
No response	99	

D4.1 Have you had male partners during the last 12 months?

1. Yes

2. No

88. Don't know

99. No response

D4.2 When you had sex with your male partner last time, did you use a condom?

1. Yes

2. No

88. Don't know

99. No response

Number and Types of Partners (For male)

The following questions I will ask you about your regular sexual partner. i.e. spouse or live-in partner, or sex partner, you do not live with, but have regular sexual contact. Regular sexual contact means contact that lasts more than one year, or less than one year with an intention to continue it

E1. Have you had sex with your regular sexual partner over the last 12 months?

(Circle the response to the question D3.1)

Yes	1	<i>Continue</i>
No	2	Go to E2

E1.1 How many times did you have sex with your regular sexual partner over the last month?

_____ times

88. Don't know

99. No response

E1.2 When you had last sexual contact with your regular sexual partner did you use a condom?

Yes	1	<i>Continue</i>
No	2	Go to E1.4
Don't know	88	Go to E1.5
No response	99	

E1.3 Who offered to use condoms at that time, you or your regular sexual partner's?

1. I did
2. Partner
3. Both
88. Don't know
99. Refused to answer

(Go to E1.5)

E1.4 Why didn't you and your regular sexual partner use a condom at that time? *(Don't read out the options. Match the response up to the options below. Several responses are acceptable)*

	Yes	No	Don't know	No response
1. Was not available/Did not have it	1	2	88	99
2. Too expensive	1	2	88	99
3. Partner refused	1	2	88	99
4. Don't like it	1	2	88	99
5. Use other contraceptives	1	2	88	99
6. Didn't think necessary	1	2	88	99
7. Didn't think of it	1	2	88	99
8. Other <i>(please indicate)</i> _____	1	2	88	99

E1.5 How often have you used condoms with your regular sexual partner within the last year?

1. Always
2. Almost always
3. Sometimes
4. Never
88. Don't know
99. Refused to answer

E1.6 Does your regular sexual partner inject drugs?

1. Yes
2. No
88. Don't know
99. No response

*The following questions I will ask you about your **paid-for a sexual partner**. A paid-for sexual partner is someone who you has sexual contact in exchange for money or drugs.*

E2. Did you have a paid-for sexual female partner over the last 12 months? *(Circle response to D3.2)*

Yes	1	<i>Continue</i>
No	2	Go to E3

E2.1.1 Please recall all your paid-for sexual partners from whom you get money or drugs in exchange for sex. How many of those did you have over the last month?

_____ (exact number)

88. Don't know

99. No response

E2.1.2 Please recall all the paid-for sexual partners to whom you paid money or drugs in exchange for sex over the last month. How many of those did you have in total?

_____ (exact number)

88. Don't know

99. No response

(Interviewer: If there are no numbers in E2.1.1 and E2.1.2 go to 0)

E2.2 Please recall your last paid-for female sexual partner? How many times did you have sex with her over the last month?

_____ times

88. Don't know

99. No response

E2.3 Last time when you had sex with your paid-for sexual partner, did you use a condom?

Yes	1	<i>Continue</i>
No	2	Go to E2.5
Don't know	88	Go to 0
No response	99	

E2.4 Whose initiative was to use condoms at that time (yours or your paid-for sexual partner's)?

1. Mine

2. Partner's

3. Mutual

88. Don't know

99. Refused to answer

(Go to 0)

E2.5 Why didn't you and your paid-for sexual partner use condoms at that time? (Don't read out the options. Several responses can be accepted)

	Yes	No	Don't know	NR
Was not available/Did not have it	1	2	88	99
Too expensive	1	2	88	99
Partner refused	1	2	88	99
Don't like it	1	2	88	99
Use other contraceptives	1	2	88	99
Didn't think necessary	1	2	88	99
Didn't think of it	1	2	88	99
Other (please indicate) _____	1	2	88	99

E2.6 Last year how often did you use condoms with your paid-for sexual partners?

- 1. Always
- 2. Almost always
- 3. Sometimes
- 4. Never
- 88. Don't know
- 99. No response

E2.7 Does your paid-for sexual partner inject drugs?

- 1. Yes
- 2. No
- 88. Don't know
- 99. No response

The following questions I will ask you about your occasional sexual partners. An occasional sexual partner is someone whom you are not married to, never lived together, and have never paid money or exchanged drugs for sex.

E3. Did you have a sexual contact with an occasional sexual partner over the last 12 months?
(Circle the response to **D3.3**)

Yes	1	<i>Continue</i>
No	2	Go to E4

E3.1. Please recall your very last occasional sexual partner. How many times did you have sexual contacts with her within the last month?

_____ times

- 88. Don't know
- 99. No response

E3.2. Last time when you had a sexual contact with your occasional sexual partner, did you use condoms?

Yes	1	<i>Continue</i>
No	2	Go to 1
Don't know	88	Go to 0
No response	99	

E3.3. Whose initiative was then to use condoms?

- 1. Mine
- 2. Partner's
- 3. Mutual
- 88. Don't know
- 99. Refused to answer

(Go to 0)

E3.4. Why didn't you and your occasional sexual partner use condoms then? (Don't read out the options. Several responses can be accepted.)

	Yes	No	Don't know	No response
1. Was not available/Did not have it	1	2	88	99
2. Too expensive	1	2	88	99

3.Partner refused	1	2	88	99
4.Don't like it	1	2	88	99
5.Partner uses other contraceptives	1	2	88	99
6.Didn't think necessary	1	2	88	99
7.Didn't think of it	1	2	88	99
8. Other (please indicate) _____	1	2	88	99

E3.5.How often have you used condoms with your occasional sexual partner over the last year?

1. Always
2. Almost always
3. Sometimes
4. Never
88. Don't know
99. No response

E3.6.Do you know whether your occasional sexual partner inject drugs?

1. Yes
2. No
88. Don't know
99. No response

E4. Have you had anal sex with any sexual partners?

Yes	1	<i>Continue</i>
No	2	Go to E5
Don't know	88	
No response	99	

E4.1. Have you used condom then?

1. Yes
2. No
88. Don't know
99. No response

E5. During the last month have you had any problem with obtaining condom?

Yes	1	<i>Continue</i>
No	2	Go to G1
Don't know	88	
No response	99	

E5.1. If yes, what was the reason?

_____ (please specify)

Section D. Sexual Life Record (For Female)

D1. How old were you when you had the first sexual contact?

_____ years old (please indicate the exact age)

77. Never had it (**go to G1**)
88. Don't know
99. No response

D2. Have you had sex with a female partner during the last year?

Yes	1	<i>Continue</i>
No	2	<i>Go to E1</i>
No response	99	

D3. In total with how many male sexual partners have you had sex over the last 12 months?

_____ (please specify the exact number)

88. Don't know

99. No response

D3.1 How many of those were “regular sexual partners” (i.e. spouse or permanent sexual partner)?

_____ (number)

88. Don't know

99. No response

D3.2 How many of your male sexual partners were “paid” ones? (i.e. those ones with whom you had a sexual contact in exchange for money or drugs)

_____ (number)

88. Don't know

99. No response

D3.3 How many of those sexual partners were “occasional” ones? (i.e. those ones that you are not married to, never have lived together, and never have paid money in exchange for sex)

_____ (number)

88. Don't know

99. No response

D3.4 Which one was your last sexual partner?

1. Regular

2. Paid

3. Occasional

88. Don't know

99. No response

D3.5 Did you use condom during last sexual contact?

1. Yes

2. No

88. Don't know

99. No response

Number and Types of Partners (For Female)

The following questions I will ask you about your regular sexual partner. A regular sexual partner is someone who is your spouse or who you consider your permanent sexual partner.

E1. Have you had sex with your regular sexual partner over the last 12 months?

(Circle the response for the question D3.1)

Yes	1	<i>Continue</i>
No	2	<i>Go to 0</i>

E1.1 How many times did you have sex with your regular sexual partner over the last month?

_____times

88. Don't know

99. No response

E1.2 When you had last sexual contact with your regular sexual partner did you use a condom?

Yes	1	<i>Continue</i>
No	2	<i>Go to 1</i>
Don't know	88	<i>Go to E1.5</i>
No response	99	

E1.3 Who offered to use condoms at that time, you or your regular sexual partner's?

1. I did

2. Partner

3. Both

88. Don't know

99. Refused to answer

(Go to E1.5)

E1.4 Why didn't you and your regular sexual partner use a condom at that time? (Don't read out the options. Match the response up to the options below. Several responses are acceptable)

	Yes	No	Don't know	No response
1. Was not available/Did not have it	1	2	88	99
2. Too expensive	1	2	88	99
3. Partner refused	1	2	88	99
4. Don't like it	1	2	88	99
5. Use other contraceptives	1	2	88	99
6. Didn't think necessary	1	2	88	99
7. Didn't think of it	1	2	88	99
8. Other (please indicate) _____	1	2	88	99

E1.5 How often have you used condoms with your regular sexual partner within the last year?

1. Always

2. Almost always

3. Sometimes

4. Never

88. Don't know

99. No response

E1.6 Does your regular sexual partner inject drugs?

1. Yes

2. No

88. Don't know

99. No response

The following questions I will ask you about your **paid-for a sexual partner**. A paid-for sexual partner is someone who you have sexual contact in exchange for money or drugs.

E2. Did you have a paid-for sexual partner over the last 12 months? *(Circle response to D3.2)*

Yes	1	<i>Continue</i>
No	2	<i>Go to E3</i>
Don't know	88	
No response	99	

E2.1.1 Please recall all your paid-for sexual partners from whom you get money or drugs in exchange for sex. How many of those did you have over the last month?

_____ (exact number)

88. Don't know

99. No response

E2.1.2 Please recall all the paid-for sexual partners to whom you paid money or drugs in exchange for sex over the last month. How many of those did you have in total?

_____ (exact number)

88. Don't know

99. No response

(Interviewer: If E2.1.1 and E2.1.2 isn't number go to E2.3)

E2.2 Please recall your last paid-for sexual male partner? How many times did you have sex with her over the last month?

_____ times

88. Don't know

99. No response

E2.3 Last time when you had sex with your paid-for sexual male partner, did you use a condom?

Yes	1	<i>Continue</i>
No	2	<i>Go to 1</i>
Don't know	88	<i>Go to E2.6</i>
No response	99	

E2.4 Whose initiative was to use condoms at that time (yours or your paid-for sexual partner's)?

1. Mine

2. Partner's

3. Mutual

88. Don't know

99. Refused to answer

(Go to E2.6)

E2.5 Why didn't you and your paid-for sexual partner use condoms at that time? *(Don't read out the options. Several responses can be accepted)*

	Yes	No	Don't know	No response
1. Was not available/Did not have it	1	2	88	99
2. Too expensive	1	2	88	99
3. Partner refused	1	2	88	99
4. Don't like it	1	2	88	99

5. Use other contraceptives	1	2	88	99
6. Didn't think necessary	1	2	88	99
7. Didn't think of it	1	2	88	99
8. Other (please indicate) _____	1	2	88	99

E2.6 Last year how often did you use condoms with your paid-for sexual partners?

1. Always
2. Almost always
3. Sometimes
4. Never
88. Don't know
99. No response

E2.7 Does your paid-for sexual partner(s) inject drugs?

1. Yes
2. No
88. Don't know
99. No response

The following questions I will ask you about your occasional sexual partners. An occasional sexual partner is someone whom you are not married to, never lived together, and have never paid money or exchanged drugs for sex.

E3. Did you have a sexual contact with an occasional sexual partner over the last 12 months?

(Circle the response to D3.3)

Yes	1	<i>Continue</i>
No	2	<i>Go to E4</i>

E3.1 Please recall your very last occasional sexual partner. How many times did you have sexual contacts with her within the last month?

_____ times

88. Don't know
99. No response

E3.2 Last time when you had a sexual contact with your occasional sexual partner, did you use condoms?

	1	<i>Continue</i>
No	2	<i>Go to E3.4</i>
Don't know	88	<i>Go to 0</i>
No response	99	

E3.3 Whose initiative was then to use condoms?

1. Mine
2. Partner's
3. Mutual
88. Don't know
99. Refused to answer

(Go to 0)

E3.4. Why didn't you and your occasional sexual partner use condoms then? (*Don't read out the options. Several responses are available*)

	Yes	No	Don't know	No response
1. Was not available/Did not have it	1	2	88	99
2. Too expensive	1	2	88	99
3. Partner refused	1	2	88	99
4. Don't like it	1	2	88	99
5. Partner uses other contraceptives	1	2	88	99
6. Didn't think necessary	1	2	88	99
7. Didn't think of it	1	2	88	99
8. Other (please indicate) _____	1	2	88	99

E3.5. How often have you used condoms with your occasional sexual partner over the last year?

1. Always
2. Almost always
3. Sometimes
4. Never
88. Don't know
99. No response

E3.6. Do you know whether your occasional sexual partner inject drugs?

1. Yes
2. No
88. Don't know
99. No response

E4. Have you had anal sex with any sexual partners?

Yes	1	<i>Continue</i>
No	2	Go to E5
Don't know	88	
No response	99	

E4.1. Have you used condom then?

1. Yes
2. No
88. Don't know
99. No response

E5. During the last month have you had any problem with obtaining condom?

Yes	1	<i>Continue</i>
No	2	Go to G1
Don't know	88	
No response	99	

E5.1. If yes, what was reason?

_____ (*please specify*)

Sedction G. Sexually Transmitted Diseases

G1. Have you heard of diseases that are transmitted sexually?

- 1. Yes
- 2. No
- 99. No response

G2. Have you observed genital release or burning pain while urinating during the last 12 months?

- 1. Yes
- 2. No
- 88. Don't know
- 99. No response

G3. Have you observed genital ulcer/rash over the last 12 months?

- 1. Yes
- 2. No
- 88. Don't know
- 99. No response

(Interviewer: If G2 or G3 answer is "Yes" – Continue, in other case go to H1)

G4. Whom did you apply for medical treatment? (multiple answers are possible)

	Yes	No	Don't know	NR
1. STD Institution	1	2	88	99
2. Private doctor	1	2	88	99
3. Drugstore	1	2	88	99
4. Self-treatment	1	2	88	99
5. Nobody	1	2	88	99
6. Other (please specify)	1	2	88	99

Section H. Knowledge, Opinion and Attitude

H1. Have you heard about HIV?

- 1. Yes
- 2. No
- 88. Don't know
- 99. No response

H2. Have you heard about AIDS?

- 1. Yes
- 2. No
- 88. Don't know
- 99. No response

(Please explain that HIV is a human immunodeficiency virus, which causes AIDS)

(Interviewer: If H1 and H2 there is "No" go to 0)

H3. Do you know any person around you who has been infected, ill with, or has died of AIDS?

Yes	1	Continue
No	2	Go to H5

Don't know	88	
No response	99	

H4. Do you have a close relative or friend who has been infected, ill with, or has died of AIDS?

1. Yes, a close relative
2. Yes, a close friend
3. No
4. Other (please indicate) _____
88. Don't know
99. No response

H5. How high is your risk of getting HIV infection?

1. High risk
2. Medium risk
3. Low risk
4. There is no risk
88. Don't know
99. No response

H6. Please give me your opinion regarding the following: (mark the relevant answer)

Assertions	Yes	No	DK	NR
1. Do you believe that one may protect oneself from HIV/AIDS by having one uninfected and reliable sexual partner?	1	2	88	99
2. Can one reduce the HIV risk if one properly uses condoms during every sexual contact?	1	2	88	99
3. Do you think that healthy looking person can be infected with HIV?	1	2	88	99
4. Can one get HIV as a result of a mosquito's bite?	1	2	88	99
5. Do you believe that one can get HIV/AIDS by taking food or drink of an infected person?	1	2	88	99
6. Do you believe that one may be infected with HIV/AIDS by using a needle already used by someone else?	1	2	88	99
7. Do you believe that one may be infected with HIV/AIDS by using a bottle, spoon, boiling pan/glass, container, cotton/filter or water previously touched by a needle/syringe used by someone else?	1	2	88	99
8. Do you believe that one may be infected with HIV/AIDS by taking solution from the shared container?	1	2	88	99
9. Do you believe that drug users may protect themselves from HIV/AIDS by switching to non-injection drugs?	1	2	88	99
10. Do you believe that an HIV/AIDS-infected pregnant woman can transfer virus to her fetus?	1	2	88	99

H7. Is it possible in your neighborhood/town that one take confidential HIV/AIDS test to see if one is infected? "Confidential" means that nobody will know about the test results without one's permission

1. Yes
2. No

88. Don't know
99. No response

H8. If you wish to take an HIV test, do you know where to apply?

Yes	1	<i>Continue</i>
No	2	<i>Go to H9</i>
No response	99	

H8.1. If you wish to take an HIV test for free, do you know where to apply?

1. Yes
2. No
88. Don't know
99. No response

H9. I don't want to know about the test results, but have you ever taken an HIV test?

Yes	1	<i>Continue</i>
No	2	<i>Go to H10.1</i>
No response	99	<i>Go to H13</i>

H10. When did you take the last HIV test?

During the last year	1	<i>Go to H11</i>
About 1-2 year period	2	
2 years ago	3	
Don't know	88	<i>Continue</i>
No response	99	
		<i>Go to H13</i>

H10.1. Please indicate the reason why don't you take an HIV test during last 12 months?

1. I was afraid of the positive result
2. I don't think it's necessary
3. I don't know the place where to go
4. I wonder that someone could get information about my test result
5. They will understand that I am a drug user
6. I am afraid of the police could get information about my behavior
7. I did not have money
8. I did not think about it
9. Other (please specify) _____
99. No response

H11. Was it your initiative to take the HIV/AIDS test or it was needed for the certificate?

	Yes	No	No response
1. My initiative	1	2	99
2. Certificate	1	2	99
3. Other _____	1	2	99

H12. Don't tell me the test result, but do you know it?

1. Yes
2. No
99. No response

H13. If you are infected with HIV will you inform your spouse/sex partner?

1. Yes
2. No

88. Don't know
99. No response

H14. If you are infected with HIV will you inform your IDU partners?

Yes	1	Go to H14.2
No	2	<i>Continue</i>
Don't know	88	Go to H14.2
No response	99	

H14.1. Why you will not inform your IDU partners about your infection? You might have several reasons, please list all of them.

H14.2. Would you take an HIV test if it is free and would be held in a government facility?

Yes	1	Go to I1
No	2	<i>Continue</i>
Don't know	88	Go to I1
No response	99	

H14.3. If you wouldn't why?

1. I am afraid of the positive test result
2. I don't think it's necessary
3. I wonder that someone could get information about my test result
4. They will understand that I am a drug user
5. I wonder that the police could get information about my behavior
6. Other (please specify) _____
99. No response

Section I. Use of prevention programs

(I1 Question for those respondents who answered positively to Q H1 and/or H2)

I1. Out of the below listed information sources which one was used by you as a source of information about AIDS? (Several answers are acceptable)

	Yes	No
1. Radio	1	2
2. TV	1	2
3. Magazines/Journals	1	2
4. Booklets, Posters	1	2
5. Healthcare system staff	1	2
6. Schools/Teachers	1	2
7. Friends/Relatives	1	2
8. NGO representatives/Social Workers	1	2
9. Billboards/Street Advertising	1	2
10. Internet	1	2
11. Other (please specify) _____	1	2

Interviewer: Check the responses of B3.1 question, if the one response is "yes", go to I2

12.A. Have you ever given anything of the following items and/or information in Georgia?

(Multiple answers are available)

	Yes	No	DK	NR
1. Brochures/pamphlets/booklets on AIDS	1	2	88	99
2. Qualified information on AIDS	1	2	88	99
3. Condoms	1	2	88	99
4. Needle/syringe	1	2	88	99
5. Other (please specify)_____	1	2	88	99

12. Did you receive anything of the following items and/or information in Georgia? *(Multiple answers are available)*

	Yes	No	DK	NR
1. Brochures/pamphlets/booklets on AIDS	1	2	88	99
2. Qualified information on AIDS	1	2	88	99
3. Condoms	1	2	88	99
4. Needle/syringe	1	2	88	99
5. Other (please specify)_____	1	2	88	99

14. Have you heard/seen or read any information about the syringe exchange program over the last year?

Yes	1	<i>Continue</i>
No	2	
Don't know	88	
No response	99	

14.1. Did you get a sterile needle/syringe from this program during the 12 months?

- 1. Yes
- 2. No
- 88. Don't know
- 99. No response

15. Have you heard any information about methadone or suboxon substitution therapy program?

- 1. Yes
- 2. No
- 88. Don't know
- 99. No response

Section J. Social Impact

J1. Please recall where do you normally inject drugs? *(Don't read out, several answers are acceptable)*

- 1. Street
- 2. Flat
- 3. Car
- 4. Main entrance
- 5. Nonliving space (garage, basement, garret, lift, abandoned home)
- 6. Open space (Forest, Field, Sea coast)
- 7. Where I buy drugs
- 8. Everywhere its possible
- 9. Other (please specify)_____

		d. The study topic is interesting/ useful for me e. I had plenty of free time f. Other (indicate) _____
--	--	--

Interviewer, thank the respondent for cooperation and say goodbye.

Q9. During the interview the respondent was:

- | | |
|----------------|---------------------------------|
| 1. Interested | 4. Calm |
| 2. Indifferent | 5. Excited |
| 3. Irritated | 6. Under the influence of drugs |

Time when interview was concluded / _____/

The questionnaire is kept till completion of the project.

Q10. Quality control on the interview was carried out by

_____ Position

_____ Organization

Quality control group member has used (completed) quality control card

Signature_____

References

- Curatio International Foundation, Methodological Guideline on Behavioral Surveillance Surveys among most at risk populations of HIV in Georgia, 2010 (Georgian Version)
- Curatio International Foundation, Bio-Behavioral Surveillance survey among People Who Inject Drugs in seven cities of Georgia, in 2015
- Dershem L, Tabatadze M, Sirbiladze T, Tavzarashvili L, Todadze K, Tsagareli T. Characteristics, High-Risk Behaviors and Knowledge of STI/HIV/AIDS, and Prevalence of HIV, Syphilis and Hepatitis Among Injecting Drug Users in Tbilisi, Georgia: 2002 - 2006. Washington D.C: USAID; 2007.
http://pdf.usaid.gov/pdf_docs/PNADK404.pdf
- Dershem L, Tabatadze M, Sirbiladze T, Tavzarashvili L, Todadze K, Tsagareli T. Characteristics, High-Risk Behaviors and Knowledge of STI/HIV/AIDS, and Prevalence of HIV, Syphilis and Hepatitis Among Injecting Drug Users in Batumi, Georgia: 2004 - 2006. Washington, D.C: USAID; 2007.
http://pdf.usaid.gov/pdf_docs/Pnadm406.pdf
- ECUO, ECOM, EHRN, ENPUD, EWNA, ITPCru, SWAN, Eastern Europe and Central Asia: Let's not lose track, 2017
- Infectious Diseases, AIDS & Clinical Immunology Research Center, HIV/AIDS epidemiology in Georgia, 2017, http://aidscenter.ge/epidsituation_eng.html. Accessed November 2017
- Johnston LG, Chen YH, Silva-Santisteban A, Raymond HF. An Empirical Examination of Respondent Driven Sampling Design Effects Among HIV Risk Groups from Studies Conducted Around the World. AIDS Behav. 2013 Jul;17(6):2202-10. doi: 10.1007/s10461-012-0394-8.
- Kostnapfel, T., Svab, I. and Rotar, D. P. (2011), 'A qualitative exploration of travel-related risk behaviours of injection drug users from two Slovene regions', Harm Reduction Journal 8, p. 8.
- Mark S. Handcock, Ian E. Fellows, Krista J. Gile (2014) RDS Analyst: Software for the Analysis of Respondent-Driven Sampling Data, Version 0.42, URL <http://hpmrg.org>
- Rachlis B, Brouwer KC, Mills EJ, Hayes M, Kerr T, Hogg RS. Migration and Transmission of Bloodborne Infections Among Injection Drug Users: Understanding the Epidemiologic Bridge. Drug Alcohol Depend. 2007; 90:107–119.
- Salganic M. J, Heckathorn D.D, Sampling and Estimation in Hidden Populations Using Respondent-Driven Sampling, Sociological Methodology, Vol. 34. (2004), pp. 193-239
- UNAIDS, Fact sheet - Latest statistics on the status of the AIDS epidemic, 2016
- UNAIDS, UNAIDS Data 2017. Report
- UNAIDS, HIV and AIDS estimates. Country factsheets (2016), Georgia.
<http://www.unaids.org/en/regionscountries/countries/georgia/>. Accessed November 2017
- UNHCR, GLIA, World Bank. Manual for Conducting HIV Behavioral Surveillance Surveys among Displaced Populations and their Surrounding Communities. 2008
- WHO, Fact sheet – HIV/AIDS, updated July, 2017.
<http://www.who.int/mediacentre/factsheets/fs360/en/>. Accessed November 2017
- Wickersham JA, Azar MM, Cannon CM, Altice FL, Springer SA. Validation of a Brief Measure of Opioid Dependence: The Rapid Opioid Dependence Screen (RODS). Journal of correctional health care : the official journal of the National Commission on Correctional Health Care. 2015;21(1):12-26. doi:10.1177/1078345814557513.