Альянс
International HIV/AIDS Alliance in Ukraine

# SUMMARY OF THE ANALYTICAL REPORT

## «MONITORING THE BEHAVIOUR AND HIV-INFECTION PREVALENCE AMONG PEOPLE WHO INJECT DRUGS AS A COMPONENT OF HIV SECOND GENERATION SURVEILLANCE»

(according to the results of 2013 bio-behavioral survey)

Kyiv 2014

Альянс
Міжнародний Альянс з ВІЛ/СНІД в Україні

# SUMMARY
# OF THE ANALYTICAL REPORT

## MONITORING THE BEHAVIOUR AND HIV-INFECTION PREVALENCE AMONG PEOPLE WHO INJECT DRUGS AS A COMPONENT OF HIV SECOND GENERATION SURVEILLANCE (ACCORDING TO THE RESULTS OF 2013 BIO-BEHAVIORAL SURVEY)

Kyiv 2014

---

**Authors:** O. Balakirieva, PhD in Sociology, T. Bondar, PhD in Sociology,
I. Loktieva, Y. Sazonova, Y. Sereda, PhD in Sociology

# TABLE OF CONTENTS



Preparation of this report became possible with the technical support of the Project "Involve*ment of local organizations to the monitoring and evaluation development in the field of HIV/AIDS in Ukraine" (METIDA) implemented by the ICF "International HIV/AIDS Alliance in Ukraine" with the financial support of the Centres for Disease Control and Prevention (CDC) under the United States President's Emergency Plan for AIDS Relief (PEPFAR).*

*This publication was supported by the Partnership Agreement № U2GGH000840 with the Centres for Disease Control and Prevention (CDC). The contents of the given publication are the sole responsibility of the authors and do not necessarily reflect the official position of the Centres for Disease Control and Prevention (CDC).*

# LIST OF ABBREVIATIONS

**HIV** – human immunodeficiency virus

**CI** – confidence interval

**VCT (voluntary counseling and testing)** – medical and psychological counseling of a person on HIV/AIDS and related medical testing of the person for having antibodies to HIV which is conducted on a voluntary basis of the person

**NGOs** – non-governmental organizations

**SMT** – substitution maintenance therapy

**PWID** – people who inject drugs

**RDS** – respondent-driven sample

**OR** – odds ratio

# SURVEY METHODOLOGY

**Survey objective:** to study behavioural practices concerning injecting drugs, use of condoms, HIV testing, level of awareness about ways of HIV transmission and to identify correlation of these factors with the level of HIV and Hepatitis C prevalence among PWID.

**Survey design:** cross-sectional survey that includes individual interviews using face to face method and testing of respondents for HIV and Hepatitis C with the use of rapid tests. Survey respondents were recruited with the use of RDS method. It involves participation of 2 categories of respondents: PWID respondents, who were recruited according to specific characteristics (seeds) and those recruited by PWID respondents themselves (secondary). Seeds were selected according to the following criteria:

- representatives of age group under 25 years;
- presence of both male and female PWID among primary respondents;
- use of different types of drugs: opiates, stimulants and mixed use of narcotic drugs;
- residents of different areas of the surveyed city;
- there had to be both clients of the programme, and those who were not;
- HIV-negative status (as self-reported by PWID).

**Sample:** 9502 respondents in 29 cities of Ukraine.

**Period of survey field stage realization:** May-October 2013.

**Ethical grounds for the survey:** Survey protocol and questionnaires were examined by the Committee on Sociologist's Professional Ethics at the Sociological Association of Ukraine. Epidemiological component was examined by the Committee on Medical Ethics of the Institute of Epidemiology and Infectious Diseases named after L.V. Gromashevskiy of the Academy of Medical Sciences of Ukraine.

**Data analysis.** Data was processed using RDSAT (calculations for cities) and SPSS 17 (national calculations) software.

Significance of difference in percentage among different groups was proved by the statistical chi-square test. In order to determine factors of infecting with HIV and Hepatitis C, multilevel logistic regressions were calculated, which consider structure of the survey design: PWID clusters in the surveyed cities.

**Table 1.Realized sample aggregation**

| City | Realized sample |
|---|---|
| Bila Tserkva | 300 |
| Vasylkiv | 150 |
| Vinnytsia | 250 |
| Dnipropetrovsk | 501 |
| Donetsk | 500 |
| Zhytomyr | 350 |
| Zaporizhzhia | 30 |
| Ivano-Frankivsk | 299 |
| Kyiv | 499 |
| Kirovohrad | 250 |
| Luhansk | 300 |
| Lutsk | 350 |
| Lviv | 350 |
| Mykolaiv | 501 |
| Odesa | 400 |
| Poltava | 300 |
| Rivne | 300 |
| Sevastopol | 350 |
| Simferopol | 400 |
| Sumy | 350 |
| Ternopil | 250 |
| Uzhhorod | 200 |
| Fastiv | 150 |
| Kharkiv | 350 |
| Kherson | 300 |
| Khmelnytskyi | 300 |
| Cherkasy | 348 |
| Chernivtsi | 250 |
| Chernihiv | 300 |
| **Total** | **9502** |

# SOCIAL PROFILE OF PWID

- The population of PWID in gender context is mainly represented by men. Decrease in the percentage of women is observed as compared to the previous survey.
- The average age of PWID is 33 years. Relative proportion of PWID adolescents (14–19 years) is 2.5%.
- Most respondents (28%) are not officially married but live a with a sexual partner.
- Every fifth of the interviewed (19.2%) has children living together with him/her (among women – 37%, among men – 14%).
- Percentage of working PWID is 69%, but most of them have just odd jobs. Percentage of pupils/students remains the same as during the previous survey (3%).
- Most of the respondents (56%) have lived in their own dwellings within the previous 3 months, about one third has lived at their relatives/friends without paying the rent.

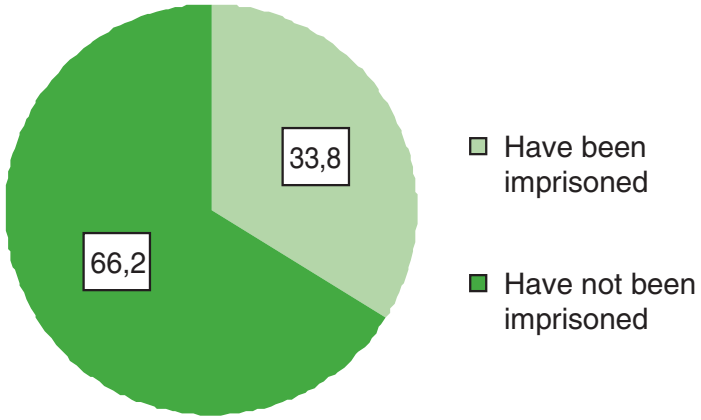



**Fig. 1. Distribution of PWID by the experience of being imprisoned, % (2013)**

**Table 2. Social and demographic characteristics of PWID, % (2013)**

| | | |
|---|---|---|
| **Gender** | Male | 76.4 |
| | Female | 23.6 |
| **Age** | 14–19 years | 2.5 |
| | 20–24 years | 10.9 |
| | 25–34 years | 44.0 |
| | 35+ years | 42.6 |
| | Average age | 33.4 y.o. |
| **Education** | Primary | 3.2 |
| | Basic secondary | 16.9 |
| | General secondary | 59.4 |
| | Undergraduate higher | 14.2 |
| | Higher | 6.3 |
| **Marital status** | Married or live with a man\woman | 14.2 |
| | Married but have other sexual partner/partners | 1.6 |
| | Not married officially but live with a sexual partner | 27.5 |
| | Married but don't live either with a man\woman, or with other sexual partner | 3.6 |
| | Not married, don't live with a sexual partner | 53.0 |
| **Children** | Yes, they live with me | 19.2 |
| | Yes, they don't live with me | 25,7 |
| | No | 55.2 |
| **Occupation** | Pupil | 0.0 |
| | Student of vocational school | 0.6 |
| | Student of technical college | 0.6 |
| | University student | 1.4 |
| | Have permanent job | 23.0 |
| | Have odd jobs | 46.1 |

# EXPERIENCE OF INJECTING DRUGS

- The majority of PWID starts using drugs with non-injecting drugs and gradually proceeds to injecting drugs. The average age when they start using drugs is 19 years for non-injectable and 20.4 years for injectable ones.
- Gradual aging of PWID population is observed in Ukraine: the average experience of drug use has increased from 12.5 to 13.6 years as compared to 2011. Almost 60% of the interviewed PWID have more than 10-year experience of injecting drugs.
- 6% of PWID reported having had overdose in the past 12 months.

**Table 3. Dynamics of drug scene by the main types of injecting drugs, depending on gender, age and experience of drug use (2011-2013), %**

| | 2011 | | | 2013 | | |
|---|---|---|---|---|---|---|
| | Opiates only | Stimulants only | Mixed use (opiates and stimulants) | Opiates only | Stimulants only | Mixed use (opiates and stimulants) |
| **Gender of the respondent** | *p<0,001* | | | *p<0,001* | | |
| Male | 63. | 15.6 | 20.0 | 65.1 | 11.1 | 23.0 |
| Female | 58.5 | 20.2 | 20.6 | 60.4 | 16.4 | 22.6 |
| **Age of the respondent** | *p<0.001* | | | *p<0.001* | | |
| 14–19 years | 38.8 | 36.0 | 24.4 | 42.1 | 32.8 | 24.7 |
| 20–24 years | 42.8 | 30.1 | 25.6 | 42.8 | 27.0 | 30.0 |
| 25–34 years | 61.4 | 16.8 | 20.8 | 61.6 | 11.4 | 26.2 |
| 35 years and above | 71.8 | 10.8 | 17.1 | 73.1 | 8.3 | 17.5 |
| **Experience of use** | *p<0.001* | | | *p<0.001* | | |
| Up to 3 years | 52.1 | 29.9 | 16.0 | 54.0 | 27.1 | 18.8 |
| 3–5 years | 56.9 | 20.8 | 21.6 | 58.5 | 20.4 | 21.0 |
| 6–10 years | 58.1 | 16.7 | 24.0 | 56.2 | 14.9 | 28.3 |
| 11 years and above | 69.5 | 9.9 | 20.4 | 68.8 | 7.8 | 22.3 |
| **Among all** | **62.3** | **16.9** | **20.2** | **64.0** | **12.3** | **22.9** |

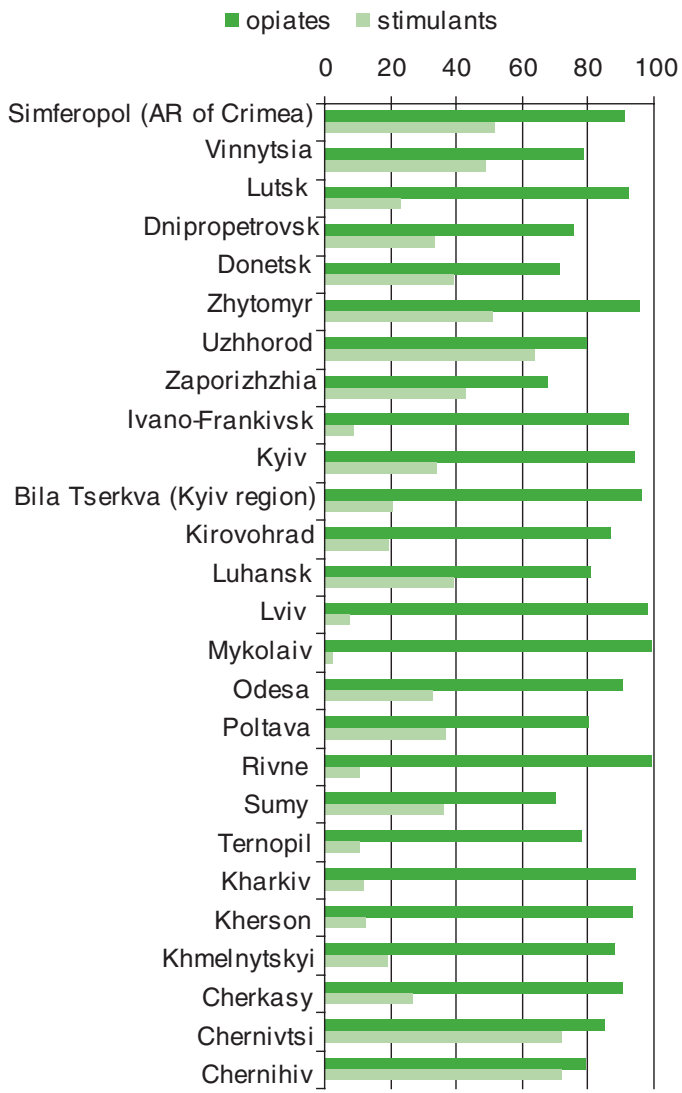



**Fig 2. Use of opiates and stimulants within the last 30 days in the surveyed cities (2013), %**

# EXPERIENCE OF INJECTING DRUGS

- 97% of PWID reported having used a sterile syringe/needle during the last drug injection. Only 6% reported having at least one case of sharing syringe/needle in the last 30 days.
- High rates of sterile needles/syringes use do not mean there were no risky practices. For example, there is quiet common practice of getting an injection with a syringe when a respondent didn't see how it was filled (55%). Almost half of PWID (48%) shared equipment for preparation/distribution of drugs.

**81% of PWID had risk of getting infected because of risky HIV practices of injecting drugs[1].**

**Table 4. Risky injecting behavior among PWID in dynamics, 2008/2009–2013, %**

| | 2008/9 (N=5709) | 2011 (N=9069) | 2013 (N=9502) |
|---|---|---|---|
| Use of a sterile syringe/needle during the last injection | 87.1 | 95.5 | 96.9 |
| There was a case of sharing syringe/needle in the last 30 days | 16.6 | 7.9 | 5.7 |
| Gave/lend their used needle to other PWID in the last 30 days | 18 | 13.4 | 10.3 |
| Got injection with a syringe when they didn't see how it was filled in the last 30 days | 58.5 | 57.5 | 55 |
| Filled their syringe from another already used syringe in the last 30 days | – | 24.0 | 27.7 |
| Used common equipment for preparation /distribution of drugs in the last 30 days | 65.4 | 63 | 48.1 |

[1] *Experience of at least one of such practices: sharing syringe\needle; getting injected with already filled in syringe; use of syringe that was filled with the already used syringe; use of syringe without knowing how it was filled; use of common equipment for preparation and distribution of narcotic drug.*

# SEXUAL BEHAVIOUR AND RISK OF GETTING HIV-IFECTION DURING SEXUAL INTERCOURSE

- 84% have started their sexual life before adulthood. Average age of the first sexual contact is 15.7 years.
- The overwhelming majority of PWID has only one regular partner and is not inclined to polygamous relationships. Over the past 90 days:
  - 76% of PWID have had sex with regular sexual partners;
  - 34% of PWID have had sex with casual partners;
  - 5% of male PWID have paid for sexual services, and 7% of female PWID have been paid for providing these services.
- 2.7% (276 persons) reported having group sex. 49.1% of those who experienced group sex reported using new condoms when changing sexual partners.
- 0.5% of male PWID (48 persons) have had sexual intercourses with male partners within the last year.

.

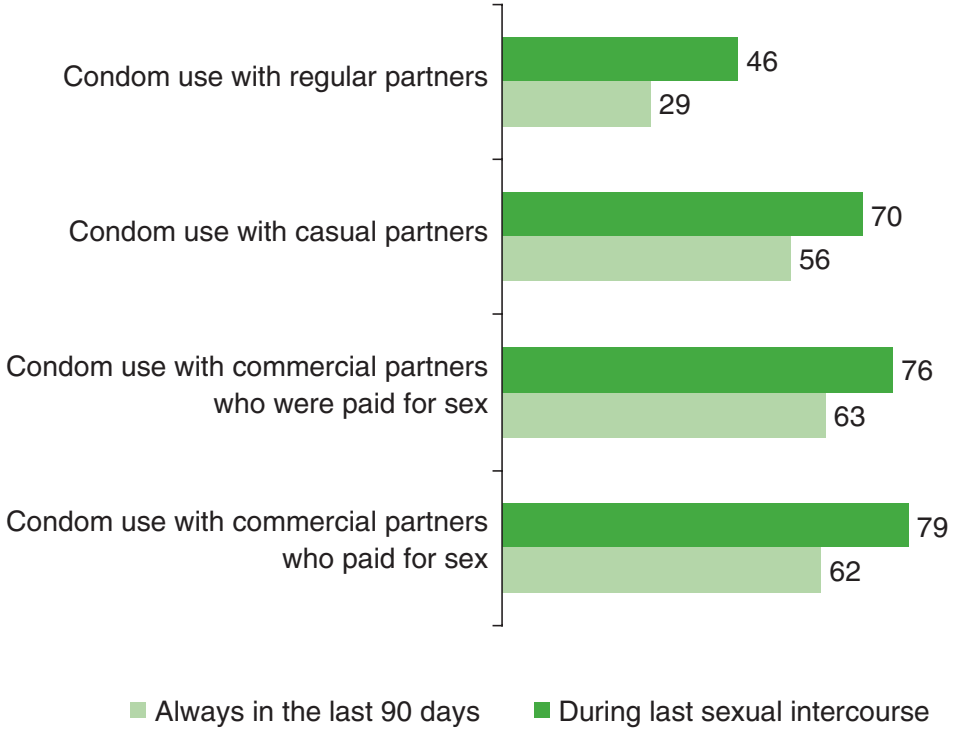



**Fig. 3. Use of condoms with different types of partners among PWID, during the last sexual intercourse and on a regular basis ("always in the last 90 days"), % (2013)**

# SEXUAL BEHAVIOUR AND RISK OF GETTING HIV-INFECTION DURING SEXUAL INTERCOURSE

**Table 5. Percentage of PWID who used condoms during the last sexual intercourse, %, in dynamics 2011–2013, %**

| City | 2011 | 2013 |
|---|---|---|
| Simferopol | 60.4 | 55.0 |
| Vinnytsia | 44.0 | 67.5 |
| Lutsk | 40.7 | 72.8 |
| Dnipropetrovsk | 28.4 | 39.1 |
| Donetsk | 40.7 | 55.8 |
| Zhytomyr | 25.1 | 21.0 |
| Uzhhorod | 20.9 | 41.2 |
| Zaporizhzhia | 30.9 | 26.8 |
| Ivano-Frankivsk | 45.5 | 63.4 |
| Bila Tserkva | – | 48.8 |
| Kyiv | 35.9 | 61.8 |
| Kirovohrad | 54.2 | 52.1 |
| Luhansk | 47.8 | 47.4 |
| Lviv | 33.5 | 63.9 |
| Mykolaiv | 43.8 | 63.2 |
| Odesa | 43.0 | 60.7 |
| Poltava | 48.7 | 48.0 |
| Rivne | 41.6 | 43.1 |
| Sumy | 61.8 | 69.7 |
| Ternopil | 42.5 | 45.1 |
| Kharkiv | 39.5 | 40.7 |
| Kherson | 43.5 | 64.0 |
| Khmelnytskyi | 39.1 | 47.1 |
| Cherkasy | 71.1 | 49.7 |
| Chernivsti | 59.0 | 73.1 |
| Chernigiv | 35.4 | 46.5 |
| Fastiv * | –* | 38.5 |
| Vasylkiv * | –* | 77.4 |
| Sevastopol * | –* | 37.8 |

** Survey was not implemented in these cities in 2011.*

**Reasons for not using condoms** significantly differ depending on the type of partner.

- In case of a *regular* partner it is mainly "conscious decision". Probable refusal to use condoms in such relationships is a certain indicator of trusting the partner.
- In case of a *casual* partner the dominant reason is absence of condom at hand.
- Refusal to use condom *during commercial* sex in most cases is motivated by the wish of the client.
- PWID who refused to use condoms when *paying for sex* insisted that condoms reduce sensitivity.

# USE OF PREVENTION SERVICES

- 35.7% are clients of NGOs. Percentage of NGOs' clients has slightly increased as compared to 2011 (29.3%).
- 44.6% of PWID are covered with prevention programmes. Slight improvement is observed as compared to 2011 (41.8%).
- In the last month 28.5% of PWID were buying condoms themselves, 70.8% were buying syringes and needles.

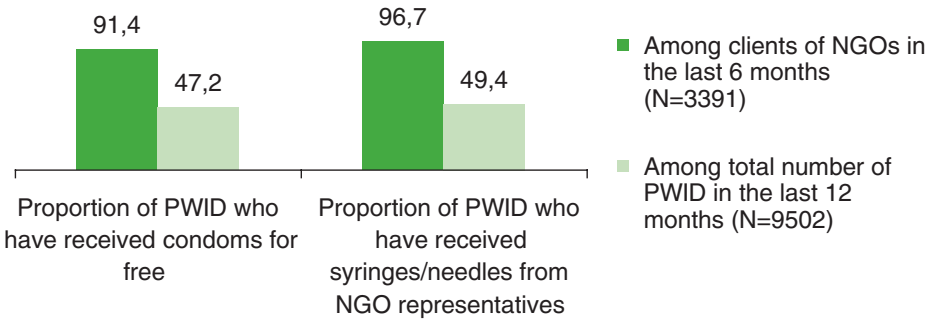



**Fig. 4. Practices of getting condoms and syringes/needles among all PWID and among PWID who are clients of NGOs in particular, % (2013)**

**PWID adolescents have the lowest percentage of coverage with prevention programmes (24%).**

**Table 6. Distribution of PWID by the status of being NGOs' client in the surveyed cities, %**

| City | 2011 | 2013 |
|---|---|---|
| Simferopol | 45.8 | 63.8 |
| Vinnytsia | 8.0 | 13.2 |
| Lutsk | 65.3 | 51.1 |
| Dnipropetrovsk | 4.7 | 30.9 |
| Donetsk | 27.1 | 31.0 |
| Zhytomyr | 34.9 | 12.3 |
| Uzhhorod | 5.3 | 8.5 |
| Zaporizhzhia | 30.5 | 10.9 |
| Ivano-Frankivsk | 34.8 | 44.3 |
| Bila Tserkva | 30.3 | 43.3 |
| Kyiv | 29.9 | 56.4 |
| Kirovohrad | 12.8 | 6.0 |
| Luhansk | 11.0 | 10.7 |
| Lviv | 4.4 | 16.9 |
| Mykolaiv | 17.9 | 19.6 |

| City | 2011 | 2013 |
|---|---|---|
| Odesa | 18.6 | 64.3 |
| Poltava | 25.9 | 46.7 |
| Rivne | 5.3 | 28.0 |
| Sumy | 69.9 | 46.3 |
| Ternopil | 28.9 | 28.0 |
| Kharkiv | 6.9 | 24.3 |
| Kherson | 33.3 | 18.7 |
| Khmelnytskyi | 18.9 | 38.3 |
| Cherkasy | 72.4 | 26.6 |
| Chernivsti | 62.1 | 96.4 |
| Chernihiv | 26.3 | 68.3 |
| Fastiv * | – | 20.0 |
| Vasylkiv * | – | 62.0 |
| Sevastopol * | – | 38.9 |

** Survey was not implemented in these cities in 2011*

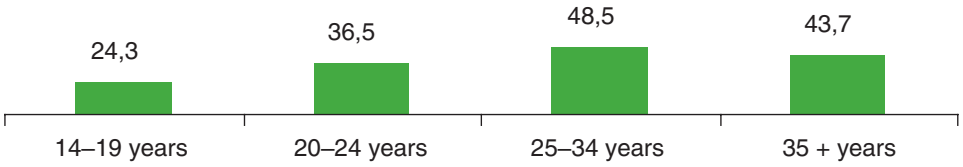



**Fig. 5. Proportion of PWID covered with prevention programmes by age, %**

# LEVEL OF AWARENESS ABOUT HIV

**61% of PWID correctly determine ways of HIV transmission.**

- The correctness of answers about HIV transmission ways is connected rather with the age, than the gender of the respondents. Particularly 43% of PWID aged 14–19 years correctly identified ways of HIV transmission, among those aged 25–34years – 64.5%, and among those above 35 years – 60.2%.

**Табл. 7. Proportion of PWID, who correctly determine ways of HIV transmission, %**

| City | 2011 | 2013 |
|---|---|---|
| Simferopol | 65.0 | 48.9 |
| Vinnytsya | 74.1 | 80.0 |
| Lutsk | 71.2 | 83.7 |
| Dnipropetrovsk | 76.8 | 53.7 |
| Donetsk | 70.8 | 62.0 |
| Zhytomyr | 50.0 | 49.7 |
| Uzhhorod | 54.0 | 36.5 |
| Zaporizhzhia | 49.1 | 57.1 |
| Ivano-Frankivsk | 67.8 | 63.7 |
| Bila Tserkva | 59.1 | 52.7 |
| Kyiv | 53.0 | 73.8 |
| Kirovograd | 60.5 | 66.4 |
| Luhansk | 65.3 | 40.7 |
| Lviv | 30.2 | 30.9 |
| Mykolaiv | 59.4 | 59.0 |

| City | 2011 | 2013 |
|---|---|---|
| Odesa | 42.7 | 57.0 |
| Poltava | 84.5 | 32.3 |
| Rivne | 85.4 | 76.3 |
| Sumy | 77.2 | 61.7 |
| Ternopil | 55.6 | 74.4 |
| Kharkiv | 52.2 | 80.9 |
| Kherson | 74.8 | 71.3 |
| Khmelnytskyi | 58.7 | 78.7 |
| Cherkasy | 85.9 | 62.9 |
| Chernivtsi | 82.9 | 89.2 |
| Chernihiv | 48.9 | 70.7 |
| Fastiv * | – | 30.7 |
| Vasylkiv * | – | 46.0 |
| Sevastopol * | – | 64.3 |

** Survey was not implemented in these cities in 2011.*

# APPLYING FOR VCT SERVICES

- 91.6% of PWID said they know where they can be tested for HIV, 94.2% consider HIV testing to be available for them.

- **Table 8. Experience of being tested for HIV during lifetime, % (2013)**

| | | |
|---|---|---|
| **Among all** | | **73.5** |
| **Gender** | Male | 72.2 |
| | Female | 77.4 |
| | *p* | *<0.001* |
| **Age** | 14-19 years | 37.6 |
| | 20-24 years | 59,3 |
| | 25-34 years | 76.7 |
| | 35+ years | 75.8 |
| | *p* | *<0.001* |
| **Experience of injecting drugs** | Up to 2 years | 45.6 |
| | 3-5 years | 58.7 |
| | 6-10 years | 72.3 |
| | 11+ years | 80.7 |
| | *p* | *<0.001* |
| **Status of a client of a non-governmental organization** | Yes | 91.7 |
| | No | 63.3 |
| | *p* | *<0.001* |

- Respondents who have never been tested for HIV were asked to name reasons why they have not been tested. 44.5% of the interviewed PWID indicated that they are not willing to be tested, 27.5% reported that their sexual behaviour was safe and 25.4% said that their injection behaviour was safe.

**42.8% of all interviewed PWID have been tested for HIV and got test results in the last 12 months (in 2011 it was 35.7%).**

- **41.6% among male PWID**
- **46.8% among female PWID**

**Table 9. Proportion of PWID, who have been tested for HIV and got test results in the last 12 months, %**

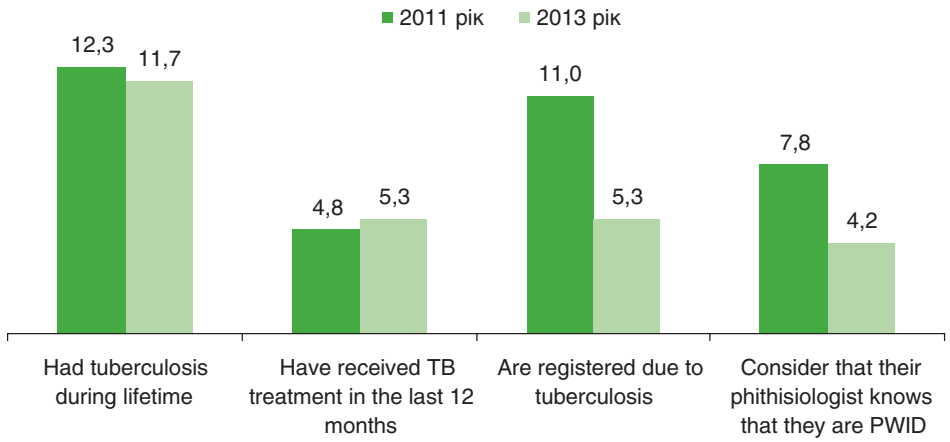
| City | 2011 | 2013 |
|---|---|---|
| Simferopol | 26.9 | 18.7 |
| Vinnytsia | 58.8 | 69.7 |
| Lutsk | 52.5 | 33.9 |
| Dnipropetrovsk | 16.5 | 34.7 |
| Donetsk | 36.3 | 24.3 |
| Zhytomyr | 26.3 | 45.4 |
| Uzhhorod | 11.6 | 25.5 |
| Zaporizhzhia | 26.6 | 15.3 |
| Ivano-Frankivsk | 66.1 | 49.8 |
| Bila Tserkva | 29.4 | 34.7 |
| Kyiv | 32.5 | 62.3 |
| Kirovohrad | 24.0 | 37.8 |
| Luhansk | 62.3 | 31 |
| Lviv | 8.7 | 42 |
| Mykolaiv | 43.1 | 39 |

| City | 2011 | 2013 |
|---|---|---|
| Odesa | 26.4 | 51.4 |
| Poltava | 44.8 | 33 |
| Rivne | 10.8 | 43.4 |
| Sumy | 69.9 | 18.6 |
| Ternopil | 38.9 | 18.6 |
| Kharkiv | 16.0 | 51.5 |
| Kherson | 38.4 | 36.6 |
| Khmelnytskyi | 42.0 | 42.7 |
| Cherkasy | 86.6 | 36.9 |
| Chernivtsi | 67.5 | 67.1 |
| Chernihiv | 26.4 | 64.5 |
| Fastiv * | –* | 24.7 |
| Vasylkiv * | –* | 28 |
| Sevastopol * | –* | 21.5 |

** Survey was not implemented in these cities in 2011.*

# PREVALENCE LEVEL OF HIV INFECTION AND OTHER SOCIALLY DANGEROUS DISEASES

- 15% of PWID reported having had Hepatitis B during their lifetime or at the time of the survey, other 7% didn't know whether they had such disease.
- 28% of PWID reported having had Hepatitis C during their lifetime, and 10% hesitated whether they had such disease.
- 12% of PWID had tuberculosis before or at the time of the survey.




** Questions regarding receiving of tuberculosis treatment within the last 12 months were asked only in 2013*

**Fig. 6. Dynamics of tuberculosis among PWID according to self-declaration among all the respondents, % (2011–2013)***

**Table 10. Proportion of PWID who had or have hepatitis, hepatitis C and tuberculosis according to self-declaration, % (2013 year)**

| City | Hepat-itis B | Hepa-titis C | Tuberc-ulosis |
|---|---|---|---|
| Simferopol | 18.7 | 8.8 | 22.3 |
| Vinnytsia | 21.6 | 40.2 | 7.9 |
| Lutsk | 12.1 | 23.5 | 7.8 |
| Dnipropetrovsk | 19.9 | 23.1 | 29.3 |
| Donetsk | 26.5 | 18.6 | 8.8 |
| Zhytomyr | 5.0 | 21.8 | 5.2 |
| Uzhhorod | 0.9 | 15.7 | 1.0 |
| Zaporizhzhia | 6.9 | 10.9 | 6.2 |
| Ivano-Frankivsk | 18.6 | 17.3 | 8.7 |
| Bila Tserkva | 30.1 | 60.1 | 8.7 |
| Kyiv | 7.8 | 9.1 | 6.1 |
| Kirovohrad | 7.7 | 30.4 | 1.3 |
| Luhansk | 12.0 | 14.4 | 9.8 |
| Lviv | 23.5 | 29.4 | 16.8 |
| Mykolaiv | 19.1 | 48.5 | 18.1 |
| Odesa | 4.9 | 16.7 | 8.0 |

| City | Hepat-itis B | Hepat-itis C | Tuberc-ulosis |
|---|---|---|---|
| Poltava | 9.3 | 21.8 | 12.9 |
| Rivne | 4.1 | 20.7 | 4.0 |
| Sumy | 4.3 | 32.5 | 24.0 |
| Ternopil | 18.4 | 25.3 | 14.6 |
| Kharkiv | 26.5 | 34.9 | 20.8 |
| Kherson | 14.6 | 20.0 | 11.8 |
| Khmennytskyi | 9.5 | 26.8 | 11.5 |
| Cherkasy | 4.1 | 39.6 | 3.0 |
| Chernivtsi | 5.5 | 49.1 | 12.4 |
| Chernihiv | 10.9 | 21.7 | 8.2 |
| Vasylkiv | 6.8 | 43.2 | 3.7 |
| Sevastopol | 9.3 | 18.2 | 15.4 |
| Fastiv | 24.3 | 32.0 | 6.8 |

# PREVALENCE LEVEL OF HIV INFECTION AND OTHER SOCIALLY DANGEROUS DISEASES

**According to the results of the linked survey[3], in 2013 the HIV-infection prevalence among PWID made up 19,7%.**

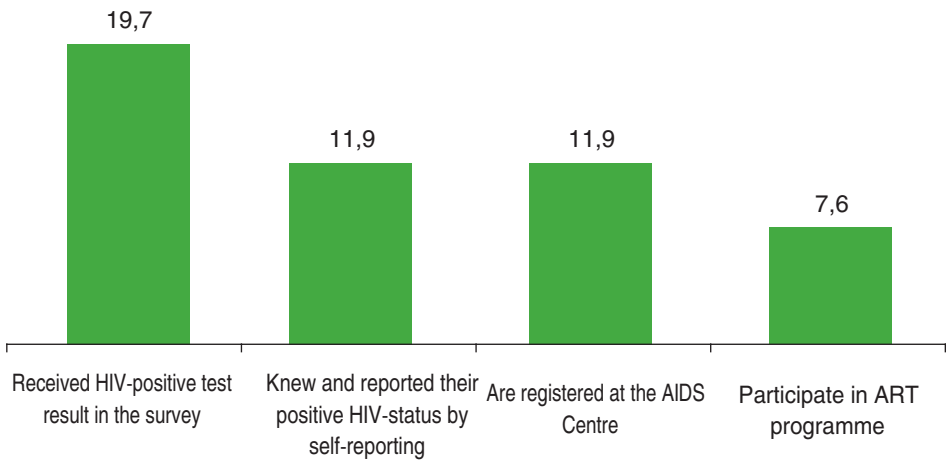



**Fig. 7. HIV prevalence and its coverage by AIDS centers, %**

- 4,9% of PWID had negative HIV-status according to the results of previous tests, but got positive status according to testing within the survey. This percentage partially shows new cases of infection, however it does not correspond to number of new cases as not all PWID were tested before the survey or agreed to report test results.

**Table 11. HIV-infection prevalence among PWID per surveyed city, % (2008-2013)**

| City | 2008/ 2009 | 2011 | 2013 |
|---|---|---|---|
| Simferopol | 23.5 | 22.6 | 22.5 |
| Vinnytsia | 4 | 13 | 12.7 |
| Lutsk | 26.7 | 18 | 20.3 |
| Dnipropetrovsk | 22.1 | 33.4 | 31.2 |
| Donetsk | 33.2 | 20.9 | 26.5 |
| Zhytomyr | 25.3 | 19 | 18.9 |
| Uzhhorod | 3 | 1.3 | 1.8 |
| Zaporizhzhia | 10.7 | 5.8 | 2.2 |
| Ivano-Frankivsk | 29.6 | 16.9 | 17 |
| Kyiv | 22.1 | 25.8 | 14.9 |
| Kirovohrad | 13.2 | 9 | 9.2 |
| Luhansk | 6.7 | 2.4 | 3.2 |
| Lviv | 2 | 27.6 | 23.5 |
| Mykolaiv | 56.4 | 40.2 | 31.8 |
| Odesa | 36.8 | 32 | 30.2 |

| City | 2008/ 2009 | 2011 | 2013 |
|---|---|---|---|
| Poltava | 23.7 | 22.8 | 2.6 |
| Rivne | 22.4 | 9.2 | 19.8 |
| Sumy | 9.3 | 4.2 | 5.1 |
| Ternopil | 6.2 | 17.2 | 18 |
| Kharkiv | 10.6 | 8.4 | 10.3 |
| Kherson | 26.7 | 28.4 | 22.6 |
| Khmennytskyi | 26.8 | 33.7 | 28.2 |
| Cherkasy | 11.1 | 26.2 | 19.8 |
| Chernivtsi | 6.2 | 3 | 2.2 |
| Chernihiv | 27.2 | 33.1 | 18.6 |
| Bila Tserkva | – | 27.7 | 19.7 |
| Vasylkiv | – | – | 5.7 |
| Sevastopol | – | – | 16.3 |
| Fastiv | – | – | 21.7 |

*[3] Linked survey – is a combination of survey among risk group representatives with their testing, that allows to verify the status which is declared by the respondent, to get information when respondents are ignorant of their status or in case of respondents' refusal to declare the results of previous testing and to make more detailed analysis of the factors of infection.*

# PREVALENCE LEVEL OF HIV INFECTION I AND OTHER SOCIALLY DANGEROUS DISEASES

**According to the results of the linked research[4], in 2013 Hepatitis C prevalence among PWID made up 54,9%.**

- At least 31% of all interviewed PWID or 56,6% of all infected with hepatitis C got to know about their test results for the first time according to the test results (new cases of infection). Such evaluation is approximate as we are not aware of people who knew that they were infected with hepatitis C but decided not to report it or stated the status that was not consistent with the reality.

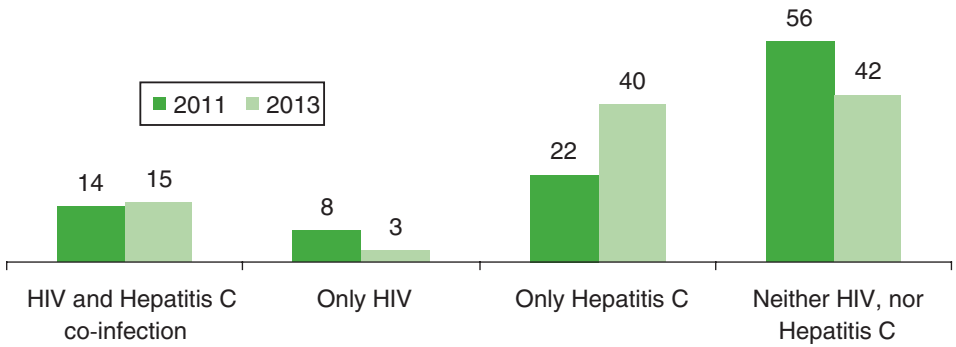



**Fig. 8. Intersection of PWID groups, infected with HIV and hepatitis C among all PWID, dynamics within 2011–2013, %**

**Table 12. Hepatitis C prevalence among PWID per surveyed city, % (2011–2013)**

| City | 2011 | 2013 |
|---|---|---|
| Simferopol | 27.8 | 62.5 |
| Vinnytsia | 50.3 | 83.1 |
| Lutsk | 24.6 | 26.6 |
| Dnipropetrovsk | 45.6 | 65.5 |
| Donetsk | 43.7 | 55.2 |
| Zhytomyr | 33.6 | 26.1 |
| Uzhhorod | 2.8 | 30.9 |
| Zaporizhzhia | 53.1 | 57.7 |
| Ivano-Frankivsk | 39.4 | 59.8 |
| Kyiv | 58.6 | 77.7 |
| Kirovohrad | 6.8 | 52.7 |
| Luhansk | 38.1 | 63.8 |
| Lviv | 37.3 | 58.1 |
| Mykolaiv | 34.9 | 65.8 |
| Odesa | 47.5 | 63.3 |

| City | 2011 | 2013 |
|---|---|---|
| Poltava | 7.1 | 48.2 |
| Rivne | 2.7 | 46.0 |
| Sumy | 37.2 | 41.7 |
| Ternopil | 32.7 | 64.3 |
| Kharkiv | 4.7 | 23.7 |
| Kherson | 51.4 | 52.5 |
| Khmennytskyi | 32.2 | 36.6 |
| Cherkasy | 45.4 | 53.4 |
| Chernivtsi | 20.6 | 48.4 |
| Chernihiv | 67.7 | 70.9 |
| Bila Tserkva | 46.4 | 59.0 |
| Vasylkiv | – | 66. |
| Sevastopol | – | 47.7 |
| Fastiv | – | 55.5 |

# FACTORS THAT ARE ASSOCIATED WITH HIV-INFECTION

According to the results of multilevel logistic regression analysis, statistically significant factors of HIV presence are female sex, older age and drug use experience, sexual risk (not regular use of condom), such injection risks as injection getting/buying in the pre-filled syringe and use of syringe by filling it with drugs with the help of already used syringe personally or by someone else as well as imprisonment experience.

- Men's odds to get positive HIV test results are 44% lower as compared to women, if to monitor risky practices and drug use experience.
- Odds of 14–19-year-old and 20–24-year-old PWID to get HIV positive test results do not differ, but odds of 25–34-year-old PWID to get HIV infection are 2.69 times higher than the odds of 20–24-year-old PWID (95% CI [1.99, 3.64]), taking into consideration other factors. If to compare 35+-year-old PWID with 20–24-year-old PWID, OR regarding HIV increases up to 3.84 out of 95% CI [2.83; 5.22].
- If to compare PWID with short injecting drug use experience (up to 2 years) and those with rather long drug use experience, the latter have almost three times higher odds to get positive HIV test, monitoring by the rest variables (OR 2,80 out of 95% CI [1,77; 4,43]).
- Odds to get HIV positive test results are 1,23 higher among PWID, who have got/bought injection in the pre-filled syringe, not being aware of how the syringe was filled, or have used syringe, filled in personally or by someone else with the help of already used syringe as compared to PWID that have not experienced such practices.
- Irregular condom use during sexual intercourses with regular, casual and commercial partners during the last 90 days increases the odds to get HIV positive test results up to 17%, if to compare with PWID who have experienced such practice and the remaining PWID, monitoring by other factors.
- PWID, who were imprisoned have on average twice higher odds to get HIV positive test results (OR 1,96 out of 95% confidence interval [1,52; 2,52]) as compared to PWID who did not have such an experience, taking in consideration the factors of sex, age, experience and risky practices.

## Regional differences

- In 11 cities sharing equipment as risk factor doesn't have statistical significance, in two cities (Lviv and Khmelnytskyy) it is the risk factor, and in 16 cities PWID with such practices have less odds of HIV infection. Obviously, this is the consequence of different practices of drug preparation in particular cities.
- In Luhansk, Lutsk, Poltava, Kharkiv and Chernivtsi the experience of being imprisoned is not connected to HIV infection, if to monitor by other factors. In other cities, OR varies from 1.40 in Sevastopol (with 95% CI [1.09, 1.80]) up to 7.16 in Lviv (with 95% CI [5.57, 9.20]). This factor is more important in Rivne, Kirovohrad, Cherkasy, Donetsk, Odessa, Bila Tserkva and Ivano-Frankivsk, where PWID with imprisonment experience have 3-– times higher odds to get HIV positive test results.

# FACTORS ASSOCIATED WITH HEPATITIS C

According to the results of multilevel logistic regression analysis, statistically significant factors of hepatitis C are female sex, older age and drug use experience, sexual risk (not regular use of condom), such risks as common equipment or material use to distribute or prepare drugs, as well as imprisonement experience.

- Men's odds to get hepatitis C positive test results are 26% lower as compared to those of women if to monitor according to risky practices and experience of drug use.
- Odds of 14–19-year-old and 20–24-year-old PWID to get positive test result for hepatitis C do not differ; odds of 25–34 year-old PWID, as well as 35+ year-old PWID to get hepatitis C infection are twice higher than odds of 20-24 year-olds, taking into consideration other factors.
- On average in the country PWID with slight injecting drug use experience (up to 2 years) have triple less odds to get positive test for hepatitis C as compared to PWID with rather long–term experience.
- The practice of sharing equipment and materials for distribution and preparation of narcotic drug is the risk factor for hepatitis C. OR for this factor is 1,16 out of 95% CI [1,05; 1,29]: people who used common equipment or materials for distribution and narcotic drug preparation have twice higher odds to get infected with hepatitis C.
- Irregular condom use during sexual intercourses with regular, casual and commercial partners during the last 90 days increases odds to get hepatitis C up to 11, if to compare with PWID who have experienced such practice and the remaining PWID, if to monitor by other factors.
- PWID, who were imprisoned have on average twice higher odds to get HIV positive test results (OR 2,37 out of 95% confidence interval [2,00; 2,80]) as compared to PWID who did not have such experience, taking in consideration the factors of sex, age, experience and risky practices.

## Regional differences

- OR regarding injecting drug experience varies from 1,48 in Lviv (95% CI [1,03; 2,12]) to 6,58 in Donetsk (95% CI [4,59; 9,44]). Differences in odds for hepatitis C infection in respect of drug use experience are rather critical in Chernivtsi, Poltava, Zaporizhzhya and Dnipropetrovsk, where OR exceeds 4,00. In Rivne, Kirovograd, Luhansk and Kiev the link between the experience and odds to get hepatitis C is not observed, if to monitor by the remaining factors.
- OR for the "imprisonment experience" factor varies from 1,49 in Kyiv (out of 95% CI [1,26; 1,77]) up to 4,26 in Sumy (out of 95% CI [3,60; 5,03]). Among the cities where OR of hepatitis C infection within the context of imprisonment experience exceeds 3,00, – Donets, Poltava, Chernivtsi, Cherkasy, Lviv and Sumy.

# DISCUSSION OF RESULTS AND SURVEY LIMITATIONS

,

## Discussion of results

- Taking into consideration high level of AIDS centers coverage, including ART, and rather high level of HIV awareness, the problem is currently not in the unavailability of preventive services or low awareness of the infection, but in the lack of motivation to maintain their own health: prevalence of risky practices and lack of culture to undergo systematic testing among PWID.
- Notification about disease from PWID survey is the minimum assessment rather than reflection of the real level of infection, and also in comparison with the data of tests may reflect the awareness about the diagnosis and prevalence of behavior aimed at looking for and obtaining of medical care. Thus, the test results reflected twice higher level of infection with hepatitis C, if to compare to the results of the linked rsurvey and self-reporting.
- With regard to the assessment of the level of awareness about HIV, it should be understood that this indicator is directly related to the coverage with prevention programmes. Thus, cities where less than half of PWID correctly defined the ways of transmission and prevention of HIV (for example, Uzhhorod, Poltava, Luhansk) – are the cities where a relatively low percentage of respondents were clients of NGOs or used the services of such organizations.

## Survey limitation

- Cross-sectional survey design allows us to estimate key behavioral indicators among PWID for the certain period of time, but sets limits for the researchers to identify factors and causation. All data on the risky or safe behavior with regards to HIV were obtained through PWID self-reporting during the survey, which may result in receiving socially expected answers from respondents. Therefore, the data on the sterile injecting equipment use as well as condom use may be slightly overestimated.
- The size of the implemented samples in the surveyed cities is not sufficient to assure representativeness of the data at the regional level. Therefore, the representativeness of the obtained results may be applicable only regarding the data at the national level. Regional data cannot be considered as representative, but it can be interpreted as descriptive and such that characterize the behavior models and other indicators for a certain percentage of PWID in one or another surveyed city.

# RECOMMENDATIONS

**1) Focusing on working with adolescents and youth**

It is necessary to adapt HIV services for juvenile PWID, improving access to a comprehensive package of prevention, socialization and rehabilitation services, including those that satisfy the basic needs for hygiene, safety, nutrition and solve social, legal and other problems. The widespread introduction of interventions aimed at preventing young people from involvement into injecting drugs use by PWID themselves is of great importance.

**2) Enhancing of preventive interventions among PWID at detention facilities**

Subject to absence of syringe exchange programmes and SMT at detention facilities it is important to regularly provide prisoners with disinfectants to sterilize equipment for injection. Disinfectants should be easily accessible to prisoners in various locations of colonies/prisons, along with the information and educational materials regarding their use.

**3) Considering gender aspect in preventive interventions among PWID**

Female PWID more often need specific prevention programs that will include, along with the traditional methods of work, the element of psychological help and motivation to initiate condom and sterile injecting equipment use, especially with the regular sexual partner.

**4) Enhancing of prevention, diagnosis and treatment of viral hepatitis and tuberculosis**

Spread of free testing for hepatitis C and tuberculosis among PWID, the development of prevention programs that increase the level of awareness about viral hepatitis and tuberculosis both among PWID and service providers as well as search for ways to ensure free treatment of diseases for the most vulnerable PWID (adolescents, prisoners, etc.) are of great importance.

**5) Improvement of existing syringe exchange programmes by low dead space syringes distribution (LDSS)**

The amount of blood that remains in the LDSS after pushing the piston and washing the syringe is 100 times less than in the ordinary syringe. This reduces the risk of HIV / hepatitis C transmission in case of sharing syringes.

**6) Spread of experience exchange programs and systematic trainings among PWID direct service providers**

Taking into consideration that non-governmental organizations providing services for PWID, are actually the key sources of HIV/hepatitis C awareness spread, the personnel of such organizations should have access to trainings regarding current case management methods, successful motivation practices to reduce risky behavior and to undergo testing.

**7) Improving the behavior and HIV/hepatitis C spread monitoring system through the analysis of new cases of infection, in addition to the prevalence**

It is reasonable to extend the biological component of the survey aimed at special procedures conduction in order to evaluate new HIV cases, the distinction between acute and chronic hepatitis. In this context, the method of genetic material research of the virus on the basis of dried blood spots (DBS) is relevant. The cost of DBS collection is less than of the whole blood collection, and the actual cost of the testing process in the laboratory remains unchanged.