

**State Institution "Center for Public Health of the
Ministry of Health of Ukraine"**

**State Institution "L.V. Gromashevsky Institute of
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HIV INFECTION IN UKRAINE

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LIST OF ABBREVIATIONS

ARV medication	antiretroviral medication
ARP	antiretroviral prevention
ART	antiretroviral therapy
ATO	antiterrorist operation
FDTB	first diagnosed tuberculosis
HBV	viral hepatitis B
HCV	viral hepatitis C
HIV	human immunodeficiency virus
MP	medical products
VL	viral load
WHO	World Health Organization
NGO	non-governmental organizations
MARPs	HIV infection most-at-risk populations
GF	The Global Fund to Fight AIDS, Tuberculosis and Malaria
SB	state budget
SPPS of Ukraine	The State Penitentiary and Probation Service of Ukraine
SI "CPH of the MoH of Ukraine"	State Institution "Center for Public Health of Ministry of Health of Ukraine"
ES	epidemiological surveillance
EU/EEA	The European Union and the European Economic Area
HCFs	healthcare facilities
OST	opioid substitution therapy
STIs	sexually transmitted infections
ELISA	enzyme immunodetection
CDL	clinical and diagnostic laboratory
COF	Community-owned facility
PWID	people who inject drugs
PLWH	people living with HIV

PH	pharmaceuticals
M&E	monitoring and evaluation
CH	city hospital
MS	medical supervision
DR-HIV	HIV resistance to antiretroviral medicines
AIDS Center	City AIDS Prevention and Control Centre
OI	opportunistic infections
SWs	sex workers
OBTS/BTS	Oblast Blood Transfusion Station / Blood Transfusion Station
Oblast AIDS Center	Oblast AIDS Prevention and Control Centre
PCR	polymerase chain reaction
PMTCT	prevention of mother-to-child transmission of HIV
HIV CT	HIV testing services
Anti-TB service	anti-TB service
y.m.	year of manufacture
RES	routine epidemiological surveillance
EPI	Early prevention indicators
Regional AIDS Center	Regional AIDS Prevention and Control Centre
SEM	seroepidemiological monitoring of HIV spread
AIDS	Acquired Immunodeficiency Syndrome
TB	tuberculosis
TMA	territorial medical association
CDH	central district hospital
IMTCT	frequency of mother-to-child transmission of HIV
MSM	men having sex with men
RT	rapid test
UNAIDS	Joint United Nations Program on HIV/AIDS
CD4	CD4 lymphocytes
ECDC	European Centre for Disease Prevention and Control
PEPFAR	The U.S. President's Emergency Plan for AIDS Relief

SECTION 1.

MONITORING THE IMPLEMENTATION OF THE DUBLIN DECLARATION ON PARTNERSHIP TO FIGHT HIV/AIDS IN 2016

Due to the emergency situation associated with the world's epidemic of HIV infection on February 23-24 2004 the countries of Europe and Central Asia (the Region) held a high-level conference in Dublin, Ireland "Overcoming barriers - a partnership to fight HIV/AIDS in Europe and Central Asia." As a result of the conference the Dublin Declaration on Partnership to fight HIV/AIDS (the Dublin Declaration) was adopted in an effort to promote the measures to prevent the spread of HIV and facilitate the treatment of HIV/ AIDS patients in the Region.

The principal provisions of the Dublin Declaration were as follows:

- *recognition of the need to combine efforts and collective action to combat the HIV epidemic;*
- *recognition that the respect and protection of human rights are the basis for preventing infecting with HIV and reducing the vulnerability of groups at risk;*
- *acknowledging that the prevention of HIV infection is the mainstay of the national, regional and international response to the epidemic;*
- *acknowledging that in Europe and Central Asia countries without urgent HIV/ AIDS response, the spread of HIV among the groups most vulnerable to HIV infection (PWID, SWs, MSM) will continue affecting the general population;*
- *recognition of the need for wider involvement of HIV positive people into measures aimed at overcoming the HIV epidemic,*
- *acknowledging that investing in research in order to improve treatment and prevention of HIV infection is key to the fight against HIV/AIDS.*

- *In 2007 the monitoring of the implementation of Dublin Declaration in Europe and Central Asia started, coordinated by the European Centre for Disease Prevention and Control (ECDC), which was specified in the reports of 2010, 2012 and 2014.*

The main conclusions following the monitoring of the Dublin Declaration in 2016 were presented at the technical meeting on January 30-31 2017 in Valletta (Malta), where key achievements in HIV testing services, epidemiological surveillance of HIV, HIV prevention and treatment among key population groups were covered according to data provided by 48 countries of Europe and Central Asia to ECDC and the WHO Regional Office for Europe.

The Dublin Declaration report for 2016 emphasizes that HIV remains a major public health problem in the EU and EEA countries.

As of 01.01.2016 it was estimated that in these countries resided 810 000 PLWH (0.2% of the adult population). Over the last decade there was only a slight decrease in the rate of new diagnoses – from 6.6 per 100 thousand people in 2006 to 6.3 per 100 thousand people in 2015, the level of registered incidence of HIV was higher among men (9.1 per 100 thousand people), than among women (2.6 per 100 thousand people).

HIV testing services in Europe

Despite the progress achieved, the coverage of by key population groups in Europe with HIV testing services remains low, a significant number of HIV-positive people are unaware of their HIV status.

12 (29%) of countries specified that there were omissions in HIV testing services among MSM, SWs – 10 (26%) among PWID – 7 (18%) countries, among prisoners – 6 (15%) countries. Besides, the countries specify that there are significant gaps in the provision of HIV testing services for transsexuals.

According to the data provided by 20 EU/EEA countries, 83% (range 57% – 98%) of persons of the estimated number of PLWH are identified and receive medical services, that is, only 17% of HIV-positive people are unaware of their HIV status. The percentage of people diagnosed with HIV-positive status for the first time, which were identified late (CD4 < 350 cells/mcl), was 47%, of them 28% of persons had the level of CD4 < 200 cells/mcl. The largest share of HIV-positive cases diagnosed in the late stage of the disease (over 50%), are registered in 9 countries: Austria, Estonia, Greece, Italy, Latvia, Lithuania, Romania, Slovenia, Sweden.

According to the data provided by non- EU/EEA countries 10, 62% (range 47% – 90%) of persons of the estimated number of PLWH are identified and getting medical

services, 38% of PLWH are unaware of their HIV status. The percentage of people diagnosed with HIV-positive status for the first time, which were identified late (CD4 < 350 cells/mcl), was 51%, of them 31% of persons had the level of CD4 < 200 cells/mcl. The largest share of HIV-positive cases diagnosed in the late stage of the disease (over 50%), is registered in 9 countries: Albania, Armenia, Georgia, Israel, Kyrgyzstan, Macedonia, Moldova, Tajikistan, Montenegro.

HIV infection among migrants in European countries

More than a third of all HIV cases in the EU/EEA countries can be attributed to migrants – 37% of all people diagnosed with HIV for the first time in their lives in 2016. However, the proportion of migrants with HIV is 51% in Malta, 52% in Belgium, 53% in France, 54% in Finland, 59% in Denmark, 60% in Norway, 65% in Ireland, 67% in Iceland, 71% in Luxembourg, and 75% in Sweden.

There is an increasing evidence that a significant proportion of migrants having HIV-positive status have arrived from the countries with high HIV prevalence, and migrants from other countries account for 22% of all new HIV cases. In 2016 most countries reported about significant gaps in coverage with HIV prevention services among migrants, 20 countries mentioning such omissions among migrants who did not have documents, including Ukraine (table 1).

Table 1. Countries which reported about gaps in coverage with HIV prevention services among migrants (2016)

Stratification of migrants	Number of countries	Countries
Migrants who came from the countries with high HIV prevalence	17	Austria, Belgium, Greece, Georgia, Ireland, Italy, Kazakhstan, Cyprus, Kyrgyzstan, Kosovo, Malta, Norway, Czech Republic, Hungary, Finland, France Sweden
Migrants without documents	20	Austria, Azerbaijan, Georgia, Greece, Ireland, Italy, Kazakhstan, Cyprus, Kosovo, Malta, the Netherlands, Germany, Norway, Poland, Czech Republic, Ukraine, Finland, France, Sweden, Switzerland

HIV infection among men having sex with men in European countries

Sexual contacts between men are the main route of HIV transmission in EU/ EEA countries – 42% of all new HIV infection cases in 2016. However, in 15 EU/ EEA countries – Austria, the UK, Greece, Ireland, Spain, Cyprus, the Netherlands, Germany, Malta, Poland, Slovakia, Slovenia, Croatia, Czech Republic and Hungary – over 50% of all new HIV infection cases can be attributed to MSM.

According to the data from 40 EU/ EEA countries, the prevalence level of HIV among MSM ranges from 0% to 60%. This figure exceeds 10% in nine countries – Belgium, Georgia, Spain, Malta, Romania, Slovakia, Hungary, France and Montenegro; ranges from 5% to 10% in nine countries – Greece, Ireland, Kyrgyzstan, Moldova, Germany, Portugal, Serbia, Switzerland and Ukraine.

More than a third (37%) of new instances of HIV infection among MSM is due to the late detection of HIV positive status, because of, first of all, low level of assessment of their own risk of infection by representatives of this target group, and the existing stigma and discrimination against MSM.

Today, in the healthcare facilities of two countries, France and Norway, the pre-exposure HIV prevention has become a standard of healthcare related to HIV. Pilot projects for the implementation of pre-exposure prevention among MSM are currently implemented in the United Kingdom, Belgium, Italy and the Netherlands, and soon planned in 14 more countries – Azerbaijan, Croatia, Denmark, Georgia, Greece, Ireland, Israel, Luxembourg, Malta, Romania, Portugal, Spain, Sweden and Ukraine.

Treatment, care and support for people living with HIV in European countries

After WHO and the European AIDS Clinical Society recommendations concerning the immediate start of ART for all HIV positive people were published in 2015, more and more EU/EEA countries report on the timely use of antiretroviral treatment, giving up the threshold quantity of CD4 lymphocytes to prescribe ART or introducing higher thresholds for CD4 levels to start ART. The number of countries which reported that the treatment started regardless of the number of CD4 lymphocytes, increased from 4 countries in 2014 to 28 countries in 2016 (**Table 2**).

Table 2. Countries reporting the criteria for starting ART depending on the immunological suppression degree(CD4)

Start of ART	2014	2016
Initiation of ART irrespective of the number of CD4 lymphocytes	4 countries - Austria, Italy, Romania, France	28 countries - Austria, the UK, Denmark, Greece, Georgia, Italy, Iceland, Spain, Cyprus, Malta, The Netherlands, Norway, Germany, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Turkey, Hungary, Finland, France, Croatia, Sweden, Montenegro, Estonia
Starting ART if CD4 < 500 cells/mcl	15 countries - Belgium, Bosnia and Herzegovina, Georgia, Israel, Iceland, Spain, Malta, The Netherlands, Slovenia, Turkey, Hungary, Finland, Sweden, Czech Republic, Estonia	11 countries - Belarus, Bosnia and Herzegovina, Bulgaria, Armenia, Israel, Kazakhstan, Kyrgyzstan, Luxembourg, Moldova, Uzbekistan, Ukraine.
Starting ART if CD4 < 350 cells/mcl	28 countries - Albania, Belarus, Bulgaria, the UK, Armenia, Greece, Denmark, Ireland, Kazakhstan, Kyrgyzstan, Kosovo, Cyprus, Lithuania, Luxembourg, Moldova, Germany, Norway, Portugal, Serbia, Slovenia, Tajikistan, Croatia, Hungary, Uzbekistan, Ukraine, Switzerland, Montenegro	8 countries - Albania, Azerbaijan, Ireland, Kosovo, Latvia, Lithuania, Tajikistan, Switzerland
Starting ART if CD4 < 200 cells/mcl	1 country - Lithuania	0 countries

Based on data from 28 EU/EEA countries and 13 countries outside the EU/ EEA, about 700 000 people living with HIV get treatment. During the years 2014-2016 the total number of people receiving ART in the EU/EEA increased by almost 20%, and in countries outside the EU/EEA - increased by almost 30%. Overall, considering the scale of treatment in Europe, the number of people undergoing antiretroviral treatment has more than doubled between 2009 and 2016.

Despite the progress in increasing the number of people getting treatment, almost every sixth person diagnosed with HIV in the EU/EEA and one of two persons in the countries that are not members of the EU/EEA still receive no treatment. Based on data from 25 EU/EEA countries, in 2016 83% (range 22% – 96%) of people from the total number of PLWH under medical surveillance receive ART. This means that 17% of people or nearly every sixth person who has been diagnosed with HIV positive status needs treatment.

In non-EU/EEA countries, the proportion of people diagnosed with HIV getting treatment is much lower. According to data from 15 non-EU/EEA countries, in 2016 only 50% (range 30-91%) of people diagnosed with HIV-positive status got treatment.

The criminalization related to HIV/AIDS remains a potential barrier for access to ART for several European countries (**Table 3**).

Table 3. Countries reporting criminalization is an obstacle to access to antiretroviral treatment

Criminalization area	Country
Criminalization of infecting with HIV	Finland, Georgia, Poland, Turkey, Ukraine
Criminalization of drug use	Georgia, Ireland, Turkey, Ukraine
Criminalization of sex business	Ukraine

SECTION 2.

OBLIGATIONS OF UKRAINE IN THE FRAMEWORK OF THE RESOLUTION OF THE THIRD NATIONAL RESEARCH AND PRACTICAL HIV/AIDS CONFERENCE "FOR EACH LIFE TOGETHER: FAST TRACK TO 90-90-90"

According to the UNAIDS Fast Track Strategy "Accelerating overcoming HIV Epidemic" aiming at ending the epidemic by 2030, as a threat to public health. In order to ensure a healthy life and well-being of all people, Ukraine needs to implement a series of parallel measures aimed at active detection of undiagnosed HIV infection, intensive antiretroviral therapy and efficient treatment. This will provide an opportunity for people living with HIV to live a full life, stop the HIV epidemic in the country, prevent new cases of HIV infecting and reduce mortality from AIDS-related illnesses.

To achieve the goals of the Fast Track Strategy by 2020, according to estimates as of the end of 2015, in Ukraine 214 000 PLWH have to be under medical surveillance, 192 000 - get treatment, 173 000 - have undetectable VL.

The Third National Research and Practical HIV/AIDS Conference in Ukraine "For Each Life Together: Fast Track to 90-90-90" which was held on November 21-23, 2016 in Kyiv, was dedicated to achievement of the goals set for the country.

This was a forum featuring national and international experts for the formation of Ukraine's policy concerning the on accelerating the overcoming of HIV/AIDS related challenges, in line with an international strategy at the stage of national reforms, European integration and resource reduction in a financial and military crisis.

The participants of the Third National Research and Practical HIV/AIDS Conference Participants of the Third National Scientific and Practical Conference on HIV/AIDS have acknowledged their commitment to the implementation of the HIV/AIDS

Political Declaration of the UN General Assembly in 2016, "On the Fast Track to Accelerate the Fight against HIV and to End the AIDS Epidemic by 2030," and in the resolution specified the following necessary steps:

In Leadership Area

- *to support and develop the state leadership in reforming the public health system in the area of HIV/AIDS control, in close cooperation with the professional and scientific community, international organizations, civil society, patient movement, business representatives and private foundations*
- *to adopt the goals of Fast Track strategies at the country level;*
- *to initiate an acceleration of the overcoming of HIV epidemic in large cities as a part of the Fast Track Cities Program by developing and strengthening the most effective approaches to the implementation of programs and resource use in HIV/AIDS area in Kyiv and 10 other Ukrainian cities;*
- *to provide by 2020 the coverage with HIV prevention services to 90% of people from vulnerable groups, including PWID, SWs and MSM, as outlined in the "Political Declaration on HIV/AIDS: On the Fast-Track to Accelerate the Fight against HIV and to End the AIDS Epidemic by 2030";*
- *to ensure the sustainable governmental financing of the efficient HIV/AIDS response measures concerning prevention, diagnosis, treatment, care and support to reduce dependence on sponsor financing;*
- *to regulate by law the governmental implementation of HIV/AIDS prevention programs directed primarily at key risk groups;*
- *ensure the sustainability of services and the efficiency of treatment of HIV by systematically reviewing the national regulatory legal framework in line with new scientific achievements, modern international standards and evidence-based medicine data: in the first place, the adoption of a comprehensive unified Clinical Protocol of Assistance to HIV/AIDS patients.*

In Strategic Solutions Area

- *to optimize the treatment of HIV on the basis of the evidence-based medicine. The result of the optimization process should be the continuous suppression of the virus, tolerability and safety of treatment, preventing the development of antiretroviral resistance, introduction of innovative approaches to treatment. The optimization should be based on principles of public health and the interests of patients;*

- *to apply the principle of expanding competition of generics in order to reduce prices for pharmaceuticals and medical products;*
- *to provide access to innovative pharmaceuticals taking into account the principle of cost-effectiveness;*
- *to take into account the international experience of providing ART to patients in conflict areas, in particular regarding the formation of adherence to treatment;*
- *to introduce HIV/AIDS prevention training for people in the conflict area and adjoining areas;*
- *to provide access to integrated viral hepatitis C treatment services using direct-acting antivirals, primarily among representatives of risk groups, patients with HIV/ HCV co-infection;*
- *to eliminate the mother-to-child HIV transmission in Ukraine and to validate it internationally;*
- *to ensure the implementation and adaptation of the national M&E system to the needs of forming and monitoring the cascade of services for PLWH (improvement of monitoring, unification of cascade formation methods, implementation of a medical information system)*
- *to promote the diversification and implementation of new models and approaches to the financing of OST services*
- *to promote the development and provision of gender-oriented medical and non-medical HIV services, develop private-public partnership and socially responsible business for the provision of appropriate services;*
- *to review the criteria for defining risk groups and formalize in legislation a new list of key risk groups taking into account the impact of the military conflict in the East of Ukraine*
- *to provide financing of social services at the regional level to implement the 90-90-90 strategy through the mechanism of social contract;*
- *to diversify the models of HIV services for different population groups;*
- *to develop and implement efficient HIV prevention programs among children and young people;*
- *to increase the provision of integrated services at the regional level (ART, OST, TB, etc.) in HCFs of all levels;*
- *to improve the regulatory framework concerning introducing self-testing and provision of HIV testing services by trained personnel without special medical education, including on community basis; to promote the recognition of community-based testing results by healthcare facilities at all levels*

- *to introduce health and social services for key community-based risk groups, taking into account the peculiarities of each group and conditions for ensuring their rights and freedoms, following the "peer-to-peer" principle and maximizing the number of services which can be obtained in one place;*
- *to form a working group including representatives of scientific institutions and regional healthcare facilities for the formation of a national strategy for the development of a system for medical care provision for the patients with socially significant diseases in under conditions of reforming the health care system of Ukraine;*
- *to facilitate the reform of the health care system of the State Penitentiary and Probation Service of Ukraine for providing the high quality medical services to prisoners in accordance with international standards, through the introduction of a patient-oriented model of medical care, equal access to comprehensive services by vulnerable groups and HIV-infected persons; within the framework of reforming of the penitentiary, judiciary and medical systems to ensure adequate participation of the inter-regional departments for criminal penalties and probation of the Ministry of Justice of Ukraine in the HIV/AIDS control through the establishment of a clearly defined coordination system between all government and non-government structures and organizations,*
- *to develop information support and advertising campaigns aimed at promoting regular testing for HIV and STIs based on the principles of commercial marketing, including making online advertising campaigns.*

In the Area of Capacity Building and Human Rights

- *to implement efficient tools for assessment of capacity, planning and development of human resource capacity and maintenance supplies of the direct providers of HIV services;*
- *to make continuous financial monitoring of the economic efficiency of implementing different models of HIV services provision;*
- *to incorporate the representatives of key risk groups (PWID, MSM, SWs, former prisoners, etc.) into the National Council on Combating TB and HIV/AIDS, as well as to as regional coordination mechanisms and local working groups;*
- *to reduce stigma and discrimination among healthcare workers towards key risk groups by conducting continuous information and education work on a gender-based approach to the provision of social services and its inclusion to the curriculum of pre- and postgraduate education of medical workers, social workers, psychologists and other professionals working in the HIV/AIDS area;*
- *to support initiatives aimed at reducing the level of stigma and discrimination towards the most criminalized risk groups and PLWH, the formation of a tolerant attitude to-*

wards them, ensuring their unimpeded access to prevention services and adherence to treatment, decriminalizing the storage of drugs for personal use (Part 1 of Article 309 of the Criminal Code of Ukraine), creating risk for another person to get HIV infection or other incurable infectious disease (Part 1 of Article 130 of the Criminal Code of Ukraine) and the cancellation of administrative liability for individual prostitution (Art. 181-1 of the Code of Administrative Offenses of Ukraine);

- *to facilitate the revision of the legal regulatory framework in order to change the threshold of criminal prosecution in accordance with the best European experience;*
- *to help eliminate legislative barriers to the adoption of children by HIV-positive people and the barriers for access to assisted reproductive technologies for HIV-positive people;*
- *to prioritize the implementation of innovative approaches and technologies, in particular the methods of implementation science and assessment, TEFT (Training Evaluation Framework and Tools), CLASS (Clinical Assessment for Systems Strengthening), information systems and other tools to create evidence base in the HIV/AIDS area;*
- *to integrate the model of continuous quality improvement in course of the provision of services by the state-owned healthcare facilities in partnership with NGOs;*
- *to improve systematically the research capacity at the national and regional levels by conducting research on evidence-based medicine basis and assessing the effectiveness of HIV / AIDS epidemic countermeasures*

SECTION 3.

HIV INFECTION IN THE CONTEXT OF SOCIALLY SIGNIFICANT INFECTIONS IN UKRAINE

Nowadays, socially significant diseases are viewed as one of the main threats to the health of the population, as well as a significant burden for the health sector and society as a whole.

Socially significant diseases (infectious and non-infectious) are illnesses that have not only medical but also social significance, are a threat to a large number of people and require social protection. The main features of socially significant diseases are the following:

- *the mass nature of the disease (high prevalence, including a significant proportion of the hidden component of the epidemic process);*
- *high rates of annual increase of patients number;*
- *limitations of normal functioning of a patient in the society;*
- *danger to other people (infectious diseases);*
- *affecting young people (of sexually active age);*
- *possibility of preventing and suppressing the development of the disease at its initial stage.*

The analysis of normative and methodological documents of Ukraine and other countries helped to establish that some infectious diseases are simultaneously included in the list of especially dangerous¹ ones, socially significant diseases and diseases that are dangerous to other people. According to the criteria for the International Classification of Diseases and Related Health Problems, 10th Edition (ICD -10, 1989), they include TB (ICD-10 Code A 15 – A 19); STIs (A 50 – A 64); a disease caused by HIV (B 20 – B 24); HBV (B 16, B 18.0, B 18.1); HCV (B 17.1, B 18.2).

¹ *The Law of Ukraine dated 06.04.2000 № 1645-III (1645-14) as amended on 01.06.2012 "On Protection of the Population against Infectious Diseases."*

In Ukraine, HIV infection, as a separate nosological form, has been registered since 1987. During the course of the HIV epidemic, evolutionary changes have occurred due to quantitative and qualitative parameters. During the period 1987-2016, 297,424 new cases of HIV infection, 92,897 AIDS cases and 41,710 deaths from AIDS-related illnesses were registered in the country. (Table 4).

Today, as in most countries of the world, the sexual transmission of HIV is increasingly gaining the epidemiological significance of Ukraine. Despite the relative reduction of proportion of parenteral way of HIV infection in the structure of transmission routes of the infectious agent, Ukraine (along with the Russian Federation, Uzbekistan and Belarus) is included into the list of Eastern Europe and Central Asia with the burden of the HIV epidemic among PWID². Activation of the sexual way of HIV transmission indicates the transition of the epidemic process from the PWID group through the "bridge groups" to the general population and is a predictor of the complication of the epidemic situation regarding HIV due to the joint influence of the parenteral and sexual ways of transmission of the pathogen on the course of the epidemic.

Table 4. Principal Statistical Data on HIV/AIDS in Ukraine¹
Citizens of Ukraine

Indicators	As of 01.01.2015	As of 01.01.2016	As of 01.01.2017
Cumulative number of officially registered cases of HIV infection, since 1987. ²	264 489	280 358	297 424
Cumulative number of cases of AIDS-related diseases since 1987	75 577	84 045	92 897
Cumulative number of deaths from AIDS-related diseases since 1987	35 425	38 457	41 710
Number of PLWH receiving medical supervision in health care institutions, total	131 268	120 921	127 620
3 of them:			
<i>HIV infected children aged 0-14 inclusive</i>	2 764	2 546	2 543
<i>HIV infected teenagers aged 15-17 inclusive</i>	390	380	471
Number of children born to HIV-infected women who receive medical surveillance in health care facilities, total ²	9 738	8 540	8 383

¹ HIV/AIDS surveillance in Europe 2014 /European Cent re for Disease Prevention and Control WHO, Regional Office for Europe. – Stockholm, 2015.

Indicators	As of 01.01.2015	As of 01.01.2016	As of 01.01.2017
of them:			
<i>HIV infection diagnosis confirmed</i>	3 036	2 857	3 058
<i>HIV infection diagnosis is at the confirmation stage</i>	6 702	5 683	5 325
Number of PLWH receiving ART	66 409	60 753	74 780
of them:			
<i>Number of people receiving ART in health care institutions of the State Committee of Internal Affairs of Ukraine</i>	2 004	1 995	2 243
	2014	2015	2016
Number of PLWH diagnosed with HIV infection for the first time in life, total ³	15 795	12 985	14 334
of them:			
<i>the number of persons aged 15-24 inclusive</i>	1 298	909	884
Number of PLWH diagnosed with AIDS for the first time in life, total	9 844	8 468	8 852
Number of deceased PLWH, total ²	5 893	4 990	5 305
of them:			
<i>the number of deaths from AIDS</i>	3 426	3 032	3 253

Foreign citizens

Indicators	As of 01.01.2015	As of 01.01.2016	As of 01.01.2017
Cumulative number of officially registered cases of HIV infection, since 1987. ²	542	565	599
Number of PLWH receiving medical supervision in health care institutions ²	137	155	172
	2014	2015	2016
Number of persons diagnosed with HIV infection for the first time in life ²	33	23	34

¹ without taking into account the data of the Autonomous Republic of Crimea since 2014 and the part of the ATO territory since 2015

² includes children born to HIV-infected women with undefined HIV status

³ excludes children born to HIV-infected women with undefined HIV status

The results of many studies have shown direct connection both in biological and behavioral aspects between STIs and HIV infection – the so-called “epidemiological synergism”. Apart from the epidemiological characteristics, STIs combine a number of moral and ethical issues that enhances their negative impact on demographic figures in Ukraine.

Over the years of independence Ukraine faced a decrease in the age of onset of sexual activity and at the same time increased the age of marriage, resulting in increased period of time during which young people are more prone to multiple sexual relationships. The change of sexual behavior, urbanization, and increasing migration are the factors contributing to the increase in the prevalence of certain STIs in Ukraine.

However, the study of the epidemiological trend of STIs incidence based on the analysis of official statistics of the SE “Centre of Medical Statistics of the Ministry of Health of Ukraine” showed that in Ukraine during 2001-2016 a decline in the incidence of syphilis by more than 10 times was observed (from 77.1 to 7.3 per 100 thousand people), the incidence of gonococcal infection and trichomoniasis decreased by almost 3 times (from 35.2 to 12.4 per 100 thousand people and from 329.1 to 115.4 per 100 thousand people, respectively).

It should be noted that the current system of epidemiological surveillance of STIs has a number of significant disadvantages. The received data does not fully display the prevalence of these infections – according to various estimates, only 30 to 40 percent of the actual number of disease cases is registered. There are also some barriers to collecting complete information that does not allow for an objective assessment of the incidence and prevalence of STIs, such as:

“shadow” STIs treatment in private health facilities that do not fully transfer information on STIs according to the current regulatory framework, which leads to a decrease in a significant number of registered cases;

certain STI patients practice self-treatment or do not get treatment at all, causing the development of advanced and complicated forms of the infection and affecting the completeness of registration of such cases;

There is no data on the results of research of the prevalence of gonorrhea, syphilis and other STIs among different population segments in the governmental accounting.

According to the recommendations of the WHO/UNAIDS, the patients with STIs symptoms may be the indicator group for the evaluation of HIV incidence among people practicing unprotected sex. A distinct consistency of the prevalence dynamics, high correlation ratios between figures prove the actual positive dynamics of reducing the incidence of these infections.

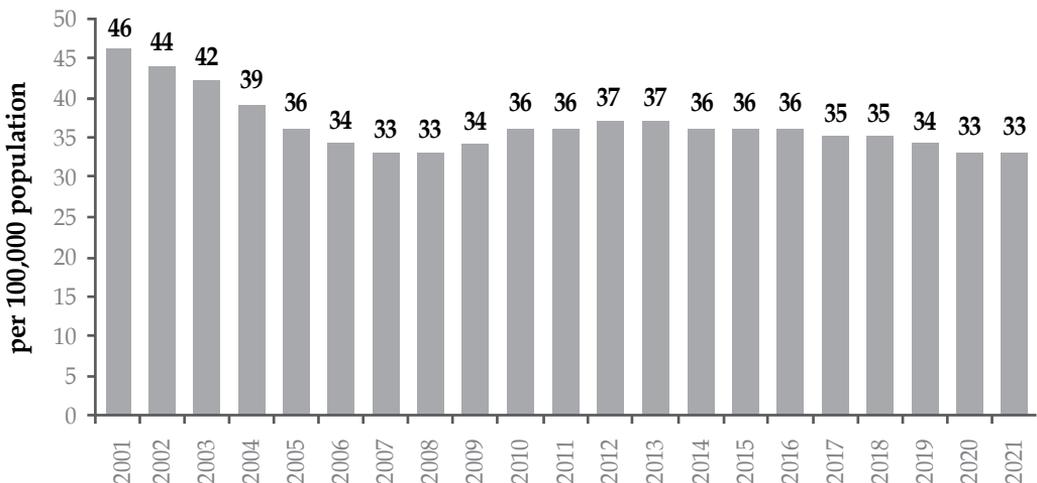
However, according to the data presented in Table 5, the epidemic process of HIV infection develops in different ways from the dynamics of the prevalence of syphilis, gonococcal infection and trichomoniasis.

Table 5. Correlation between the registered syphilis, gonorrhoea, trichomoniasis and HIV infection prevalence for the period 2001 – 2016 in Ukraine

Prevalence	Syphilis	Gonorrhoea	Trichomoniasis	HIV infection
Syphilis		+ 0,86	+ 0,94	- 0,95
Gonorrhoea	+ 0,86		+ 0,53	- 0,76
Trichomoniasis	+ 0,94	+ 0,93		- 0,80
HIV infection	- 0,95	- 0,76	- 0,80	

Since the registration of the incidence of HIV does not actually display new cases of HIV infection, it is advisable to analyze the relationship between the prevalence of syphilis, gonorrhoea, trichomoniasis and estimated incidence of HIV (using the Spectrum/EPP, version 5.5). In this case, for the period from 2001 to 2016, strong and medium correlations were established, namely: HIV infection ↔ syphilis: +0,76; HIV-infection ↔ gonorrhoea: +0,43; HIV-infection ↔ trichomoniasis: +0,57, which confirms the tendency to reduce the incidence of the analyzed infection and indicates a low probability of generalization of HIV epidemic process in the coming years in Ukraine as a whole (Fig. 1).

Figure 1. Estimated incidence of HIV infection in Ukraine per 100,000 people in the forecast period until 2021 (including the data from the Autonomous Republic of Crimea and a part of the ATO territory)



Also, an indirect evidence of the trend towards reducing the incidence of STIs and HIV may be data on the reduction of the number of cases of syphilis detection among pregnant women in Ukraine – from 2138 in 2001 to 364 in 2016, because according to the current normative documents, the serological examination for syphilis of pregnant women is a standard laboratory test when registering a pregnant woman. The disease incidence number among this population category are quite objective.

On the other hand, it is difficult to predict the preservation of positive trends concerning the new cases of HIV infection in the future, because the current socio-economic situation in Ukraine may affect the mechanism of implementation of HIV transmission ways, and the parenteral way will again prevail and entail all associated negative consequences. In addition, the epidemic situation with STIs can also dramatically worsen. Taking into account the fact that the comprehensive screening and monitoring studies on the prevalence of STIs and their connection to the peculiarities of behavior are practically absent in Ukraine as well as the scope, quality and intensity of preventive interventions remain insufficient to significantly restrict the spread of HIV and STIs in common vulnerable groups, it is possible to expect an increase in the medical, social and economic burden of these infections.

Sufficient evidence base is accumulated worldwide to prove the existence of a certain relationship between hepatitis B and C and HIV.

The epidemic process involving these infections is primarily caused by the socio-economic factors, the spread of drug addiction, alcoholism, and the sex industry. According to WHO / UNAIDS recommendations, infection with hepatitis C virus is an intravenous drug use marker. Recently, viral hepatitis are considered among the principal causes of mortality of HIV-infected individuals – chronic hepatitis cause 45% of fatalities in HIV-infected patients in hospital conditions.

The spread of drug addiction and, above all, the injection method of drug use, is the main determinant of the spread of parenteral viral hepatitis, HIV and a number of other infectious diseases. Viral hepatitis in patients with drug addiction are usually represented by chronic forms of the infectious process.

In Ukraine, HBV has been registered since 1970, acute HCV – since 2003, chronic forms of infection – since 2009.

According to statistical data for 2011-2016 the following tendency regarding the incidence of parenteral HBV and HCV is observed:

- *the incidence of acute hepatitis B among the entire population of Ukraine during the last 6 years was characterized by further stabilization of the intensive indicators – from 4.8 per 100 thousand people in 2011 to 3.4 per 100 thousand people 2016;*
- *the gradual increase in the incidence of chronic hepatitis B – from 3,4 to 4,09 per 100 thousand people in 2011-2015, and the decline in this indicator in 2016 to 3.6 per 100 thousand people;*

- *over the recent 6 years, the incidence of acute hepatitis among the entire population of Ukraine was characterized by the stabilization of indicators – from 1.5 per 100 thousand people in 2011 to 1.3 per 100 thousand people in 2016;*
- *an increase in the incidence of chronic hepatitis C was happening rapidly over the entire country – from 10.9 to 13.7 per 100 thousand people, as well as in most regions. In the adult population, the rates were significantly higher than among children under 17 years.*

Over the recent years, the incidence rates of chronic hepatitis B and C in Ukraine do significantly differ from those in developed countries. The epidemic situation with HBV and HCV, despite the reduction of the incidence of acute forms of infection, recorded in recent years, is considered adverse. Patients with anicteric, subclinical forms of infection often remain unrecognized, which in turn leads to an increase in the number of complications, the formation of chronic infectious processes, extrahepatic pathological conditions, the whole range of adverse effects, etc. The official reporting in many cases also do not include the patients with various forms of chronic hepatitis B and C, and so-called carriers of pathogens, most of which have signs of chronic hepatitis with minimal or weak course of the inflammatory process. The pathogenetic and clinical and epidemiological peculiarities of HCV infection even more than in the case of HBV are contributing to misinterpretation of the actual level of HCV incidence and inadequate assessment of the actual epidemic situation.

The similarity of mechanisms, ways and factors for transmission of HIV infection of parenteral viral hepatitis, a number of STIs, common risks groups and groups of population vulnerable to infecting provide for the need to implement common approaches to the prevention and epidemiological control of these infections.

In recent years, Ukraine has been characterized by deepening of the negative trends in the economy and demographic situation, increasing differentiation of regions at the social and economic development level as a result of military actions in the East region of the country, which shall predictably promote the spread of socially significant diseases among the population. In such conditions, in particular, the established system of anti-epidemic and preventive measures does not function properly, the population faces difficulty in getting access to medical services; the capabilities and capacity of infectious hospitals are reduced.

WHO believes that the prevalence of infectious diseases is one of the most important components of the health index, and the efforts of health systems aimed at reducing the incidence and elimination of infections are considered an important component of maintaining the health of the nation. Consequently, the active introduction of measures to prevent the spread of socially significant infections is one of the principal criteria for assessing public health of the population. In order to solve the biosecurity problem of the country the efficient functioning of the systems for monitoring, control and forecast of the epidemic process of socially significant infections is needed, which requires adequate information support of preventive and anti-epidemic measures at the national level taking into account the regional peculiarities.

SECTION 4.

RESULTS OF SEROEPIDEMIOLOGICAL MONITORING OF THE SPREAD OF HIV AMONG VARIOUS POPULATION GROUPS

The extension of the HIV testing services is an obligatory component of public health and an integral part of human rights; it should be combined with the large-scale measures to ensure overall access to comprehensive science-based services for the prevention, treatment, care and support of patients having HIV infection.

In order to accelerate the overcoming of the HIV epidemic in Ukraine, HIV testing services should meet the needs of MARPs and vulnerable population groups and be conducted both within and outside the healthcare system with the involvement of a wide range of HIV testing services providers – health care workers, psychologists, social service providers, including representatives of NGOs and charitable organizations working in the area of counteracting HIV/AIDS, including PLWH groups who have been trained on the provision of HIV testing services.

In the context of ES concerning the HIV epidemic, HIV testing is recommended. Approaches to HIV testing services should be based on the principles of consent, confidentiality, counseling, credibility of results and unity with high-quality HIV-related services.

The existing SEM system is currently in the process of reviewing and amending the regulatory framework in accordance with WHO recommendations, because it does not allow assessing objectively the real prevalence of HIV in Ukraine in general as well as among certain population groups. In addition, SEM includes different approaches to the formation of the surveyed cohorts, which doesn't enable obtaining reliable data on the number of surveyed and identified individuals from high-risk groups.

Ukraine has already accumulated sufficient experience in countering the spread of the HIV epidemic, in particular in the HIV testing services. However, the main barriers to increasing access to such services are:

Limited capacity of medical institutions for testing (shortage of personnel, additional workload on available personnel).

Lack of unity the HIV provision system for the general population and persons who are the key HIV infected group, the lack of equality in the provision of services at the local level.

Insufficiency of the resource potential (budgetary, donor funds). Difficulties are expected due to the end of the GF financing in 2017.

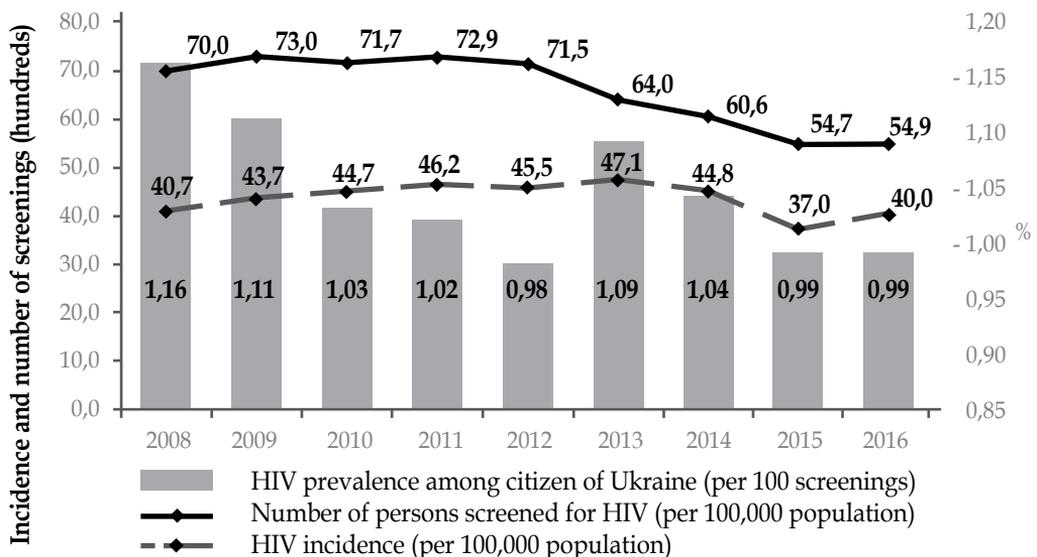
At the national level, there is no uniform system for measuring the scope and results of testing for HIV using RT, and there is not enough information on the total number of institutions using RT.

There is still a problem with state-owned healthcare facilities concerning the keeping of confidential information.

According to the Center Public Health statistics, in Ukraine over the past three years more than 2 million people are tested each year to determine the HIV status. Thus, in 2016, 2 343 383 Ukrainian citizens were examined for HIV (in 2015 – 2 344 741, and in 2014 – 2 608 063), among which the positive results of the examination have been verified for 23 174 people (2015 – 23 193, 2014 – 27 236).

The prevalence of HIV among Ukrainian citizens (code 100) is maintained at the level around 1% (in 2016-2015 – 0.99%, and in 2014 – 1.04%) (**Figure 2, Table 1** in the Annex).

Figure 2. *The prevalence of HIV (code 100) and the number of examinations for HIV infections (per 100 thousand people) in Ukraine (excluding the data from the Autonomous Republic of Crimea since 2014 and a part of the ATO territory since 2015).*



During 2014-2016, the majority of the examination codes indicate a slight variation in the prevalence of HIV. At the same time, as a result of increased testing coverage of MARPs individuals using RT and the inclusion of these results to the SEM, the prevalence of HIV among the groups of MARPs individuals in 2016 significantly decreased compared to the corresponding figures in 2014: PWID (code 102): 2014 – 3.1 %; 2015 – 1.7%, 2016 – 1.41%; persons who had homosexual contacts with persons with unknown HIV status (code 103): in 2014 – 2.8%; 2015 – 1.0%; 2016 – 1,09%; persons providing commercial sex services (code 105.2): 2014 – 0.2%, 2015 – 0.2%; 2016 – 0.14%. There was a significant increase in the prevalence of HIV among conscripts (code 106) from 0.11% in 2014 to 0.36% in 2016.

As in previous years, in 2016, the highest prevalence of HIV was detected among the examined individuals under codes 101 (persons having sexual contacts with HIV-infected people, 13.53%), 119 (persons who died, 11.67%), and code 112 (persons in detention centers, including investigative detention centers, 4.24%).

In the structure of the positive results of testing for HIV in 2016, as in previous years, the largest share are the persons identified by the following codes (reasons) of the HIV antibody test:

- *code 113 – persons having diseases, symptoms and syndromes due to which HIV testing services are offered when applying for medical aid to healthcare facilities (27.2%);*
- *code 116 – persons examined on their own initiative (12.1%);*
- *code 102 – PWID (10.0%);*
- *code 101 – persons who had sexual (hetero-, homo-) contacts with HIV-infected people (7.2%);*
- *code 105 – persons with risky sexual behavior (6.4%).*

The analysis of the examination results using RT showed that over the last three years, persons from MARPs had the highest proportion among people who were examined to find antibodies to HIV by means of ST, and among persons in whom HIV-positive markers were detected according to the results of these examinations (Table 2 of the Annex).

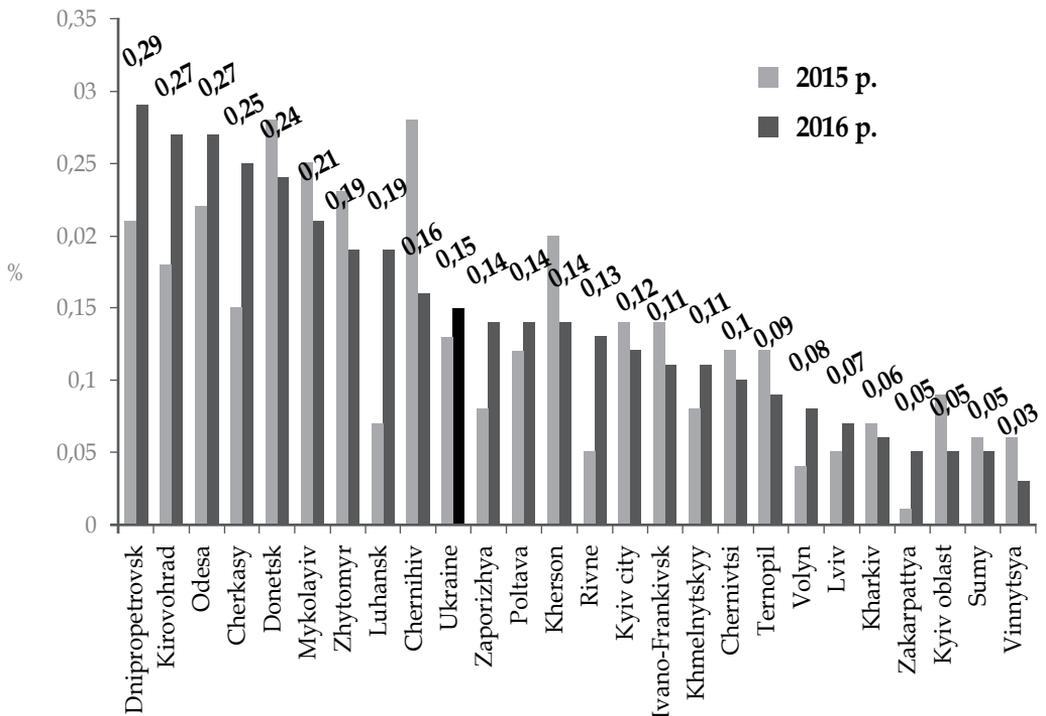
Among those examined for HIV, more than $\frac{1}{4}$ were annually donors (code 108) their proportion among the examined people remained virtually unchanged and amounted to 26.2% in 2016 (27.4% in 2014, and 26.3% in 2015). A slight increase in the share of HIV-positive results under code 108 is noted in the structure of all positive results: in 2014 – 2.4%, in 2015 – 2.3%, and in 2016 – 2.5%.

In 2016, the prevalence of HIV among primary donors of blood and its components (code 108.1) in Ukraine was 0.15% and exceeded the corresponding figures of previous years (2014 – 0.14%, 2015 – 0.13%): In 578 potential donors who received pre-test con-

sulting, HIV antibodies were found in a laboratory examination. The highest regional figures have been recorded over the last three years and exceeded the country's average in 2016 (0.15%) in the regions: Dnipropetrovsk (0.29%), Donetsk (0.24%), Zhytomyr (0.19%), Kirovohrad (0.27%), Mykolayiv (0.21%), Odessa (0.27%), Cherkasy (0.25%), Chernihiv (0.16%) oblasts (Figure 3, Table 3 of the Appendix).

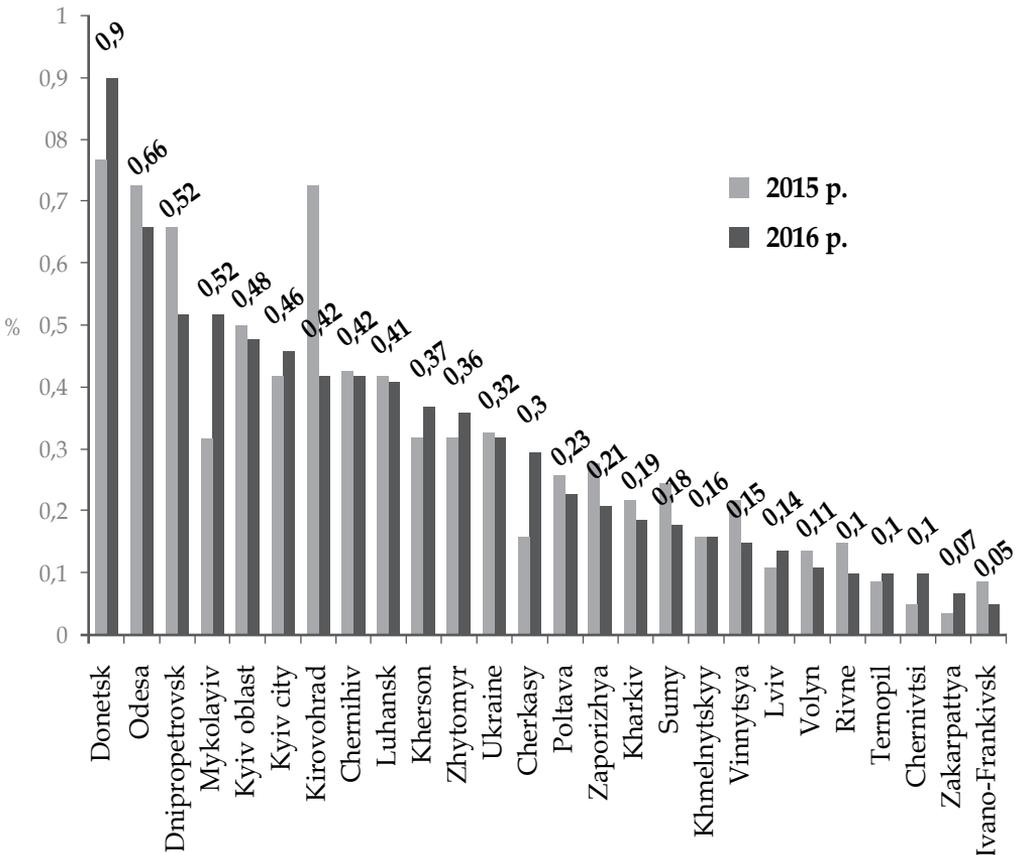
According to the SEM results, among new donors of blood and its components (code 108.2), in Ukraine in 2016 28 HIV-positive persons were found (during 2009-2015, 121, 125, 73, 31, 28, 16, and 21 such persons were found, respectively) .In addition, in 2016 a HIV infection case due to transfusion of erythrocyte concentrate from a permanent donor was registered, indicating a high relevance of measures to improve the system of selection of potential blood donors, in particular, to improve the quality of HIV infection counseling among donors and to prevent people with risky behavior concerning HIV infection from blood donation (Section 6).

Figure 3. Prevalence of HIV among primary donors (code 108.1) by regions of Ukraine in 2015 and 2016 (without taking into account the data from the Autonomous Republic of Crimea and a part of the ATO territory)



Over the recent years (2009 – 2016), Ukraine has witnessed a positive trend towards reducing the prevalence of HIV among pregnant women found according to the results of the first examination (code 109.1) – from 0.55% in 2009 to 0.32% in 2016. The high levels of this indicator exceeding the average indicator for Ukraine in 2016 are registered in Dnipropetrovsk (0.52%), Donetsk (0.9%), Kyiv (0.48%), Kirovograd (0.42%), Luhansk (0.41%), Mykolayiv (0.52%), Odessa (0.66%), Chernihiv (0.42%) oblasts and Kyiv (0.46%). In addition, 29 HIV positive pregnant women had HIV negative results of the first HIV testing and were identified in course of a re-examination under codes 109.2 and 109.3 (Figure 4, Table 4 of the Appendix).

Figure 4. Prevalence of HIV among pregnant women according to the results of the first examination (code 109.1) by regions of Ukraine in 2015 and 2016 (without taking into account the data from the Autonomous Republic of Crimea and a part of the ATO territory)



The HIV prevalence among pregnant women aged 15-24 (codes 109.1.1 + 109.1.2) keeps a downward trend of 0.32% in 2014, 0.27% in 2015 and 0.25% in 2016/ However, in 2016, in 11 regions the figures were high, they were the highest in Dnipropetrovsk (0.46%), Donetsk (0.47%), Kyiv (0.35%), Kirovograd (2.37%), Mykolayiv (0.57%), Odessa (0.57%), Kherson (0.36%), Chernihiv (0.42%) oblasts and Kyiv (0.36%). Using this indicator, the changes in the incidence of new HIV infections among young people can be estimated to some extent.

An important element in the work against the spread of the HIV/AIDS epidemic is providing free access to free HIV testing services, especially for MARPs. The share of people from MARPs examined for HIV (codes 101.2, 103 (persons having homosexual contacts), 102 (PWID), 104 (persons in whom STIs have been detected), 105.2 (SWs)) from the total number of the examined (excluding donors and pregnant women) has gradually increased over recent years, mainly due to the expanded testing using RT and the inclusion of these results in SEM. In 2016, the figure was 20.1% and was the highest in the last three years (11.3% in 2014, 17.4% in 2015). For different regions of the country, the figures in 2016 varied from 3.5% in Zakarpattya region to 35.3% in Kyiv (**Table 5, 6** of the Annex).

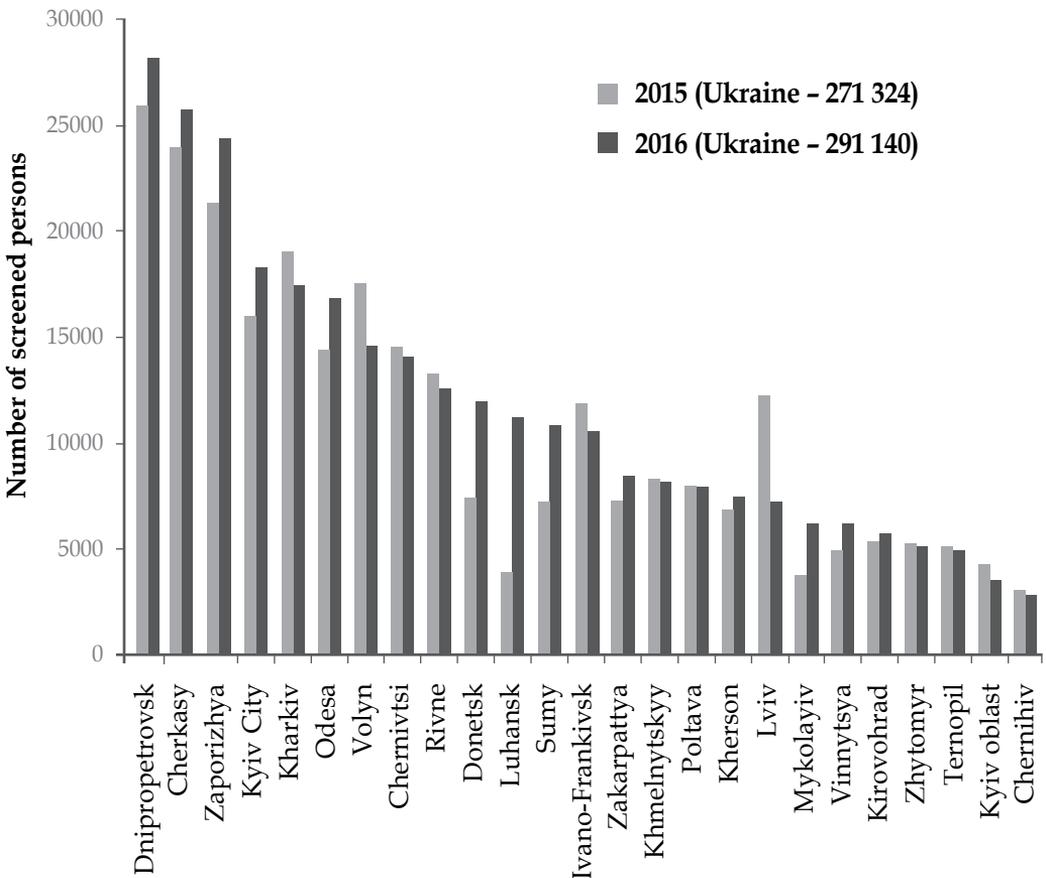
The lowest proportion of examined persons from the MARPs of the total number of examined people was registered in Vinnytsya (11.7%), Volyn (5.2%), Zhytomyr (14.8%), Zakarpattya (3.5%), Ivano-Frankivsk (5.5%), Kirovohrad (7.2%), Luhansk 10.5%), Poltava (12.8%), Rivne (9%), Ternopil (13.6%), Chernivtsi (11.6%), and Chernihiv (15.6%) oblasts, which may be a manifestation of limited accessibility to HIV testing for people from MARPs from certain region and draws attention to the need to strengthen the coordinating role of regional AIDS centers for this work area. At the same time, in some regions with a high proportion of the examined people it is necessary to provide control over the inclusion of the number of subjects examined, but not testing in the SEM.

The prevalence of HIV among people who had sex with HIV infected people (code 101) in 2016 amounted to 13.5% and increased by 3.2%, compared to the figure of 2014 (13.1%). Regional figures in 13 regions exceeded the country's average figure. Significant growth of corresponding regional indicators for the last three years has been registered in Kirovohrad (37.2%), Odesa (27.8%), Zakarpattya (27.0%), Ternopil (20.4%), Zhytomyr (18.2%), Chernihiv (18.1%), Chernivtsi (17.5%), Vinnytsya (16.3%), Mykolayiv (14.7%), and Ivano-Frankivsk (13.8%) oblasts, indicating the importance of active involvement of persons who had sex with HIV-infected persons to HIV testing services and to intensify work on the primary prevention of HIV infection among the general population.

In 2016, the number of people who applied for medical care and were examined for HIV in the presence of clinical indications (code 113), amounted to 291,141 examined people compared to 271,324 people in 2015. The increase in the number of persons examined by code 113 in 2016, as compared to 2015, in Dnipropetrovsk, Donetsk, Za-

karpattya, Zaporizhya, Luhansk, Mykolaiv, Odesa, Sumy, Cherkasy oblasts and Kyiv. However, in Volyn, Kyiv, Ivano-Frankivsk, Lviv, and Kharkiv oblasts has decreased the number of such people, which requires the activation of the HIV testing services on the initiative of health care workers in healthcare facilities at all levels of medical care provision (Figure 5).

Figure 5. HIV examination of people having diseases, symptoms and syndromes which imply HIV testing services when applying for health care in health care institutions (code 113) in regions of Ukraine in 2015 – 2016 (without taking into account the data from the Autonomous Republic of Crimea and a part of the ATO territory)



Due to the reforming of the healthcare system and the strategy Fast Track "90-90-90", diversification and implementation of new and efficient models and approaches to the HIV testing services with the use of the potential of different types of healthcare facilities providing primary, secondary (specialized) and tertiary (highly specialized) medical care, with active involvement of NGOs is relevant for Ukraine.

In this context, the main directions for expanding access to HIV testing services in Ukraine are:

1. *Making amendments to the legislative framework concerning the HIV testing services in order to harmonize regulatory acts with the EU legislation, taking into account current international recommendations.*
2. *Creating a unified national HIV testing strategy in Ukraine taking into account the epidemiological situation and the needs for the examination of different population groups.*
3. *Expansion of the HIV testing services at the primary level of medical care provision (family doctors) with the proactive involvement of NGOs, and the community of key groups.*
4. *Ensuring wide involvement of the population in the HIV testing services on the initiative of healthcare workers.*
5. *Ensuring the continuity of the provision of HIV testing services – from the stage of involvement/ accessing such services to the stage of enrolment of people with positive test results under medical supervision.*
6. *Review of national testing algorithm efficient for diagnosis of HIV infection, taking into account the epidemiological context and the possibility of reducing the waiting time for the results of the examination.*
7. *Implementation of a thorough comprehensive system of external and internal quality assessment of diagnostic research for HIV infection, quality control of test systems and donor safety.*
8. *Creation of an efficient system of redirecting and optimizing the moving of HIV-positive persons between various organizations of the state and non-governmental sectors, which will help to shorten the length of the procedure for involving people with HIV-positive status, with risky behavior into obtaining medical and non-medical services.*
9. *Provision of sustainable financing of state programs of the provision of HIV testing services, treatment, care and support to PLWH, by increasing the contribution of local budgets to regional HIV/AIDS programs.*
10. *Popularization of HIV testing services through mass media, including television, outdoor advertising, the internet and electronic social networks, etc.*
11. *Strengthening the M&E system of HIV testing services for making managerial decisions.*

SECTION 5.

CURRENT TRENDS IN DEVELOPMENT OF HIV EPIDEMIC IN UKRAINE

According to the current normative base and the existing ES system in Ukraine, diagnosing and registration of HIV infection occurs based on the results of a confirmatory examination on the presence of antibodies to HIV, the obtained data from the epidemiological history and an objective examination of a person who contacted the WHO for diagnosis. However, the ES system in the country today needs revision and amendment in the current legislation of Ukraine in accordance with international recommendations of WHO and the CDC, taking into account adaptation to the context of the HIV epidemic and defining the definition of the HIV infection case for ES as "a person with a first time in life positive result of the confirmatory testing for HIV infection (by the time of starting medical supervision)."

For the period 1987 – 2016 in Ukraine **503 413** positive results of the HIV examination were received according to the SEM, officially, there were **297 424** cases of HIV infection among Ukrainian citizens, including **92 897** cases of AIDS, and **41 710** deaths from diseases caused by AIDS. Among all detected and registered HIV positive persons over the entire period of monitoring more than half (55%) of all detected and registered HIV positive persons have been detected and officially registered (almost 60%) over the last nine years (2008-2016) (**Table 4**).

According to medical records, as of 01.01.2017, under the supervision of the WHO there were **132 945** HIV-infected citizens of Ukraine (an indicator of 313.3 per 100 thousand people), including **38 730** AIDS patients (an indicator of 91.3 per 100 thousand people.).

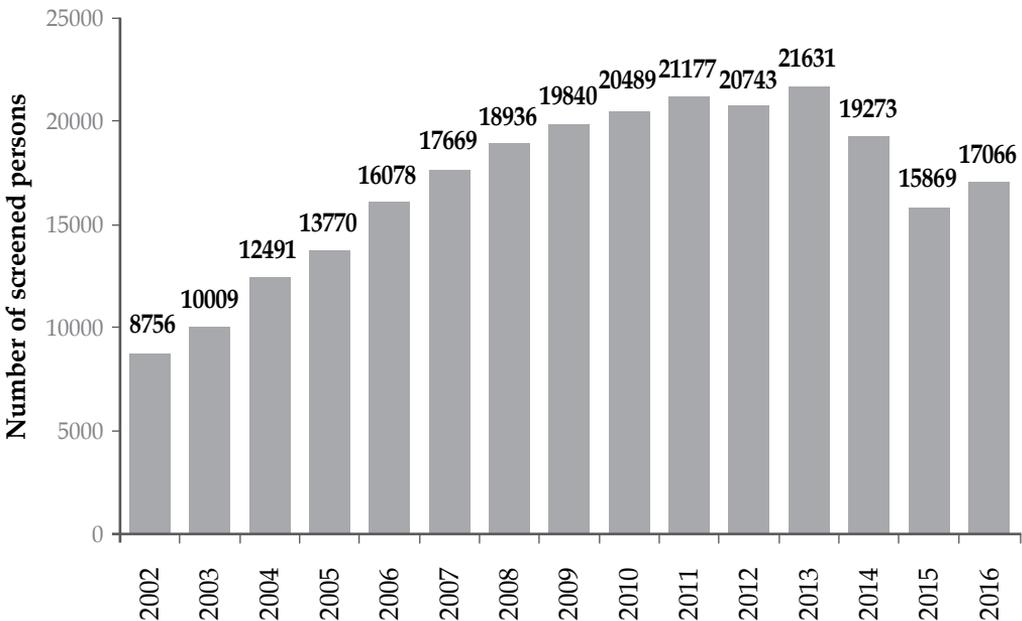
The southern regions of Ukraine, Dnipropetrovsk, Kyiv, Chernihiv, Donetsk oblasts and Kyiv are the territories with high HIV prevalence, and western regions – with a low level. More than half of all HIV-infected people who are officially under SE live in the territories of Dnipropetrovsk, Donetsk, Odessa oblasts and in Kyiv (**Table 19** of the Annex).

In 2016, an increase in the number of HIV-infected persons who were first supervised was registered in the country – 17 066 compared to 15 869 in 2015, the incidence rate for HIV was 40.0 per 100 thousand people and exceeded the previous year figure by 8.0% (37.0 per 100 thousand people.). The number of officially registered cases and the incidence rate did not exceed the corresponding data for 2014 (19 273 cases, 44.8 per 100 thousand people), when data from the entire ATO territory was included (Fig. 6, Table 7 of the Annex).

The increase in the number of first HIV infected persons by more than a thousand patients was due to the involvement of people with established positive HIV test results in previous years and active involvement of the Donetsk and Luhansk AIDS RCs.

Significant rates of increase in the HIV infection incidence were registered in Donetsk, Zakarpattia, Zaporizhya, Kyiv, Luhansk, Mykolayiv, Ternopil, Kharkiv, Kherson oblast and Kyiv. In 10 oblasts of the country, the incidence rate has decreased.

Figure 6. Dynamics of officially registered new cases of HIV infection among Ukrainian citizens by years for the period of 2002 – 2016 (without taking into account the data from the Autonomous Republic of Crimea since 2014 and a part of the ATO territory since 2015.)



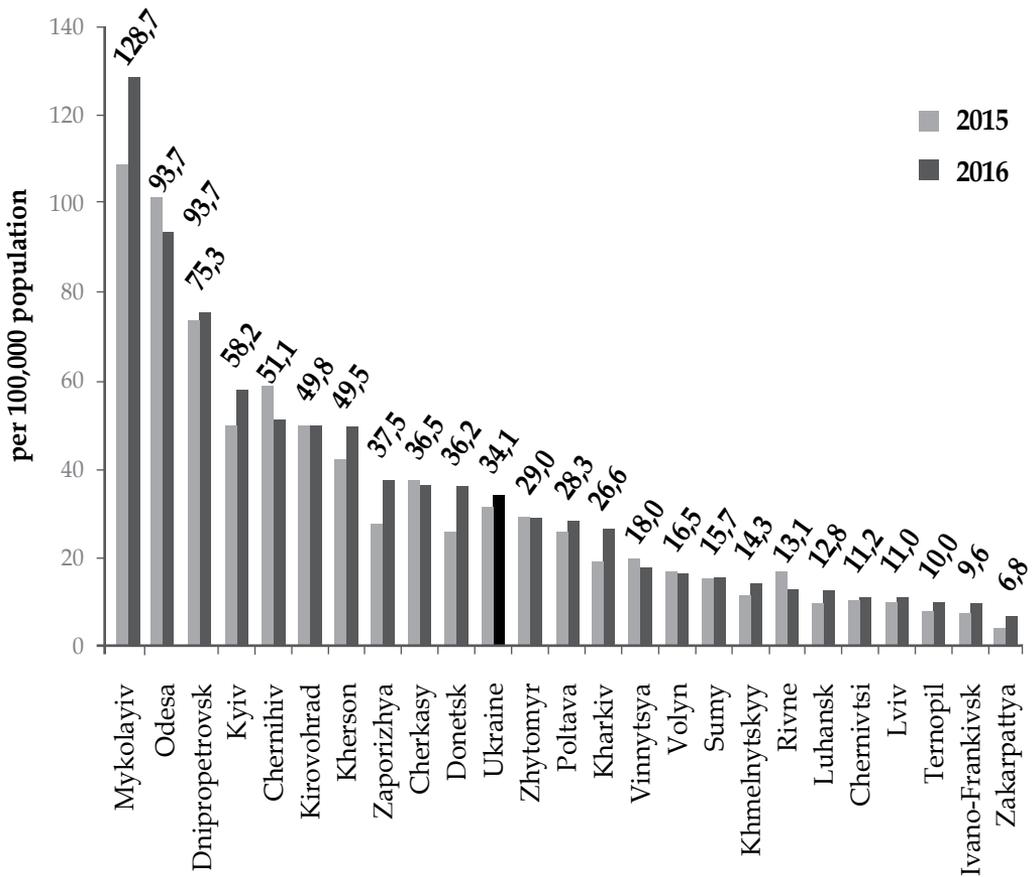
Among the first registered HIV infected persons in 2014 – 2016, the share of men dominated and gradually increased from 55.9% in 2014 to 57.5% in 2016, the share of women dropped from 44.1% in 2014 to 42.5% in 2016. The city residents had the disease more often (more than 70%). In 2016 there was a certain increase of the share of villagers among the first registered HIV-infected persons as compared to 2014 (Table 6).

Table 6. Distribution by sex and place of residence of the first registered HIV infected persons in Ukraine

Years	men		women		city		village	
	Abs. no.	%						
2014	10 765	55,9	8 508	44,1	14 563	75,6	4 710	24,4
2015	9 023	56,9	6 846	43,1	11 652	73,4	4 217	26,6
2016	9 808	57,5	7 258	42,5	12 573	73,7	4 493	26,3

The incidence of HIV infection among the villagers in 2016 amounted to 34.1 per 100 thousand of rural population and increased compared to the figure of 2015 (31.8). In particular, the corresponding figures have increased in Dnipropetrovsk, Donetsk, Zaporizhya, Kyiv, Mykolayiv, Kharkiv, Kherson oblasts. The highest rates of HIV infection among villagers were found in Mykolaiv (128.7 per 100 thousand village residents), Odessa (93.7), Dnipropetrovsk (75.3), Kyiv (58.2), Chernihiv (51.1), Kirovohrad (49.8), Kherson (49.5) oblasts, and the lowest ones – in the western regions of the country (Fig. 7).

Figure 7. *The incidence of HIV infection of the villagers by regions of Ukraine in 2015-2016 (per 100 thousand village residents)(without taking into account the data from a part of the ATO territory)*



In 2016 MS in healthcare facilities of AIDS service was assumed over 2855 children aged 0-18, including children with uncertain HIV status, 70 new cases of AIDS were registered in children, 64 of them died from HIV-related illnesses. As of 01.01.2017, there were 8 339 children aged 0-18, including children with uncertain HIV status, including 821 AIDS patients (**Table 20** of the Annex).

The predominant majority of registered children are the children born to HIV-infected women. As of 01.01.2017, there were 3,058 HIV-infected children born to HIV-positive women, diagnosed with a confirmed diagnosis, including 845 children with AIDS; for 5,325 children, the diagnosis was at the stage of confirmation; due to the absence of HIV infection, 2,585 children were deregistered (**Table 21** in the Annex).

During the 2014-2016, the persons aged 25-49 prevailed in the age structure of the first registered HIV-infected persons (67-68%).

The analysis of the sex and age structure of persons with the first time in life established diagnosis of HIV infection aged 15 years and older in the period from 2009 to 2016 has been conducted. It was established that since 2009 there has been a tendency of increase of the share of HIV-infected persons over the age of 30 years among first registered HIV-infected persons of both sexes: among men – from 71.9% in 2009 to 85.2% in 2016, among women – from 51.4% to 74.3%, respectively (Figure 8, 9).

Figure 8. Age structure of the first registered HIV infected men aged 15 and older in Ukraine (without taking into account the data from the Autonomous Republic of Crimea since 2014 and a part of the ATO territory since 2015.)

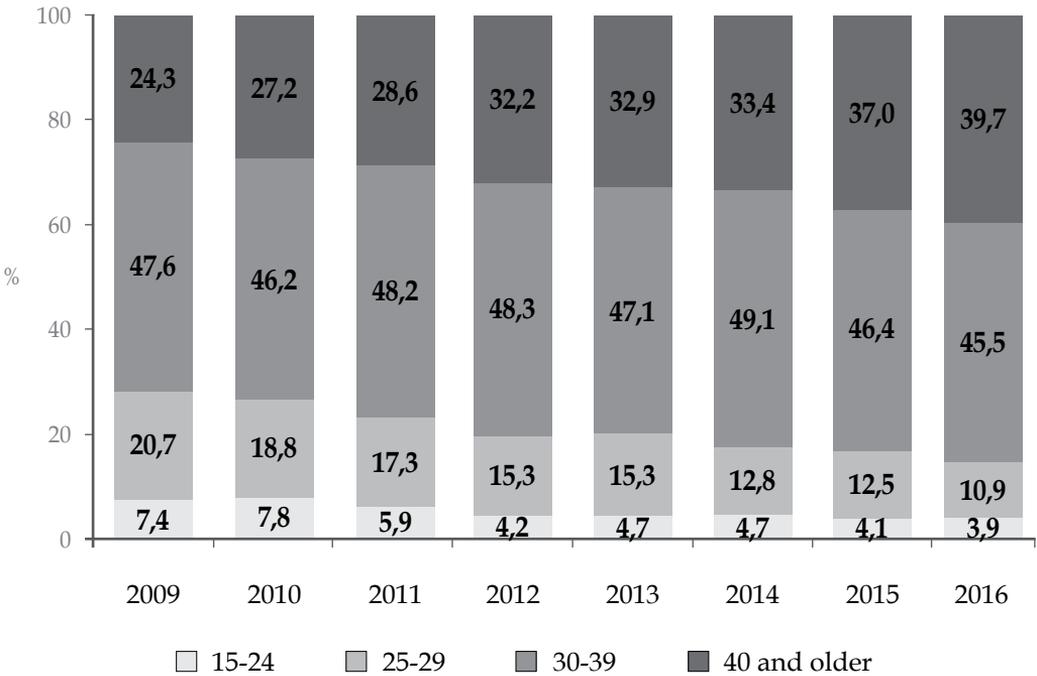
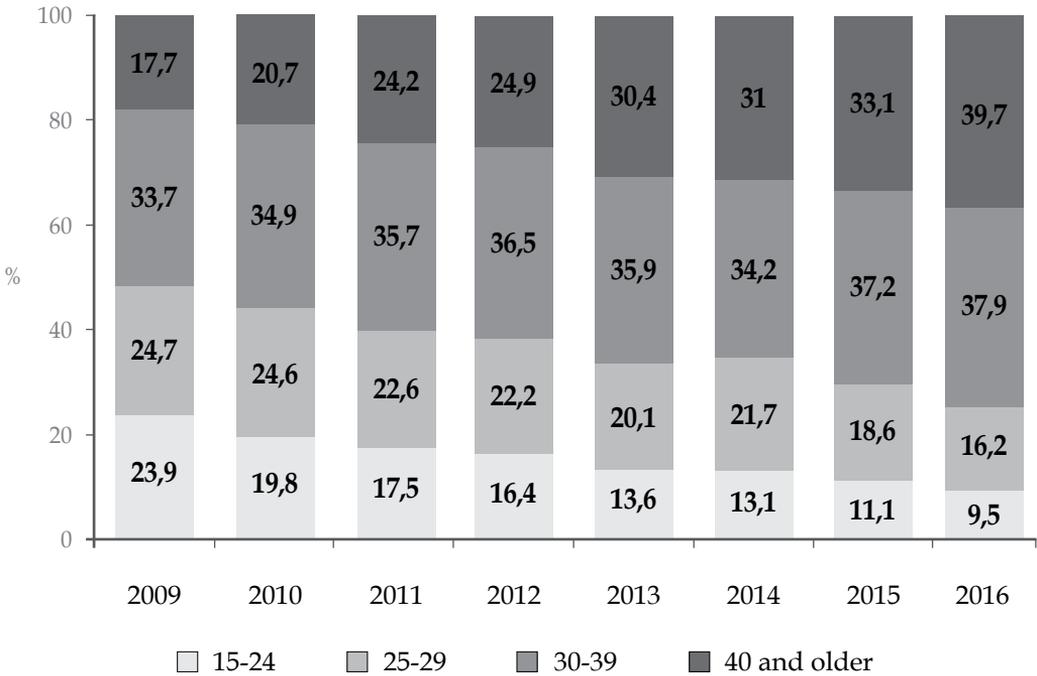


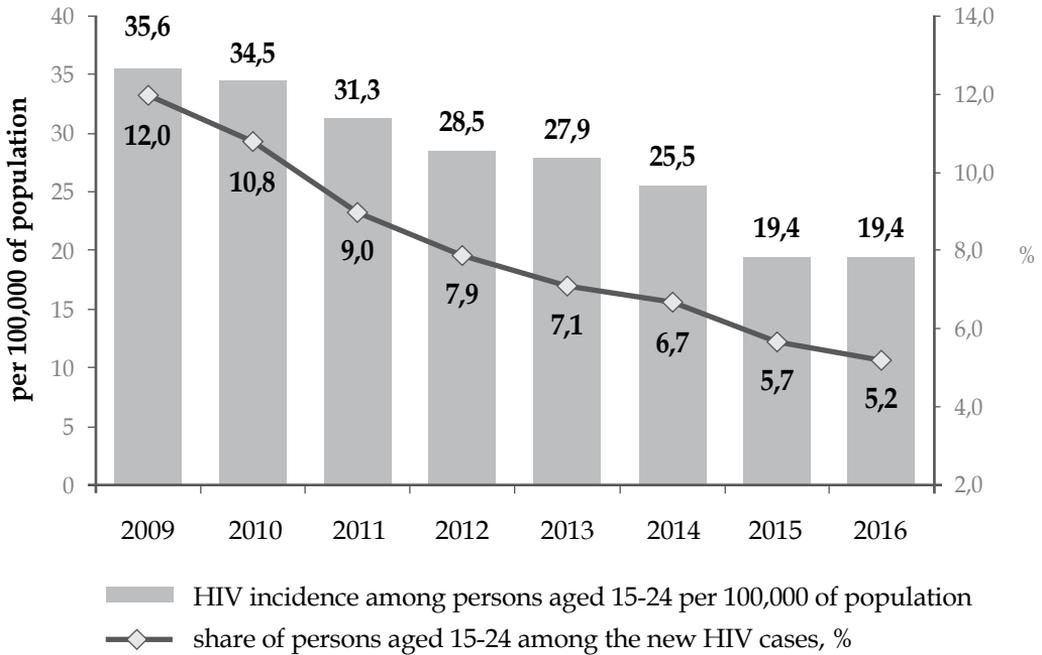
Figure 9. Age structure of the first registered HIV infected women aged 15 and older in Ukraine (without taking into account the data from the Autonomous Republic of Crimea since 2014 and a part of the ATO territory since 2015.)



There is observed a stable tendency toward the decrease of the share of people aged 15-24 among the first registered HIV-infected persons: men – from 7.4% in 2009 to 3.9% in 2016, women – from 23.9% to 9, 5%, respectively. According to the data of 2016, the proportion of women of this age group remains significantly higher among all first registered women (about 10%), compared with men (about 4%), which indicates an earlier HIV infection among women.

Taking into account the recommendations of UNAIDS and WHO, the tendency of HIV prevalence among people aged 15-24 can be used to estimate roughly the changes in the number of new cases of infection. There is a stable trend of decrease of both the share of young people of this age group among all the first registered cases of HIV infection (from 12.0% in 2009 to 5.2% in 2016) and the rate of HIV incidence among the population of the corresponding age group (from 35.5 per 100 thousand people aged 15-24 in 2009 to 19.4 in 2016) (Fig. 10).

Figure 10. *Proportion of people aged 15-24 among new HIV infection cases and incidence of HIV infection among this age group (without taking into account the data from the Autonomous Republic of Crimea since 2014 and a part of the ATO territory since 2015.)(the 2015 figure was recalculated taking into account the changes in the population number of this age group)*



In 2016 the proportion of people in the age group of 15-24 among the people first in their life diagnosed with HIV infection was the lowest in Sumy oblast (3.0%), and the highest in Ivano-Frankivsk (8.6%) and certain western regions (Table 9 of the Annex).

The highest levels of HIV infection among the population aged 15-24 in 2016 were registered in Zhytomyr (24.4 per 100 thousand people aged 15-24), Dnipropetrovsk (34.9), Kyiv (27.6), Kirovohrad (32.3), Mykolayiv (41.7), Odesa (41.1), Kherson (25.5), Cherkasy (24.3) oblasts and Kyiv (32.5).

According to REN, among the principal indicators of epidemic monitoring are analyzed the figures of timeliness of registration and regular MS. It should be noted that the rate of coverage of HIV-positive persons with medical record is conditional because the data of registration of persons for the first time in life diagnosed with HIV during the year include data on HIV-infected persons regardless of the date of HIV-positive status verification according to laboratory test data.

Despite a steady increase in the figure of the HIV-positive population rate of coverage with medical record in healthcare facilities of AIDS service from 54.5% in 2009 to 73.6% in 2016, yet about a quarter of HIV-positive people identified according to the data of laboratory tests were not involved in MS. The lowest levels of coverage of HIV-positive persons with medical record in 2016 were established in Vinnytsya (71%), Donetsk (70.5%), Zhytomyr (71%), Ivano-Frankivsk (68.3%), Kirovohrad (68.7%), Odesa (64.5%), Khmelnytskyi (64.9%), Chernivtsi oblast (66.4%), and Kyiv (51.4%) (**Table 13** of the Annex).

During 2005-2016, among all the first registered HIV-infected individuals there was a tendency of increase of both the number of patients upon whom MS was assumed with the diagnosis of III-IV clinical stages of HIV infection (from 4 387 in 2005 to 7 961 in 2016) (until 2013, including the data from the Autonomous Republic of Crimea, until 2014 including data from the entire territory of the ATO), and their share among all the first registered HIV-infected persons (from 31.9% in 2005 to 46.6% in 2016).

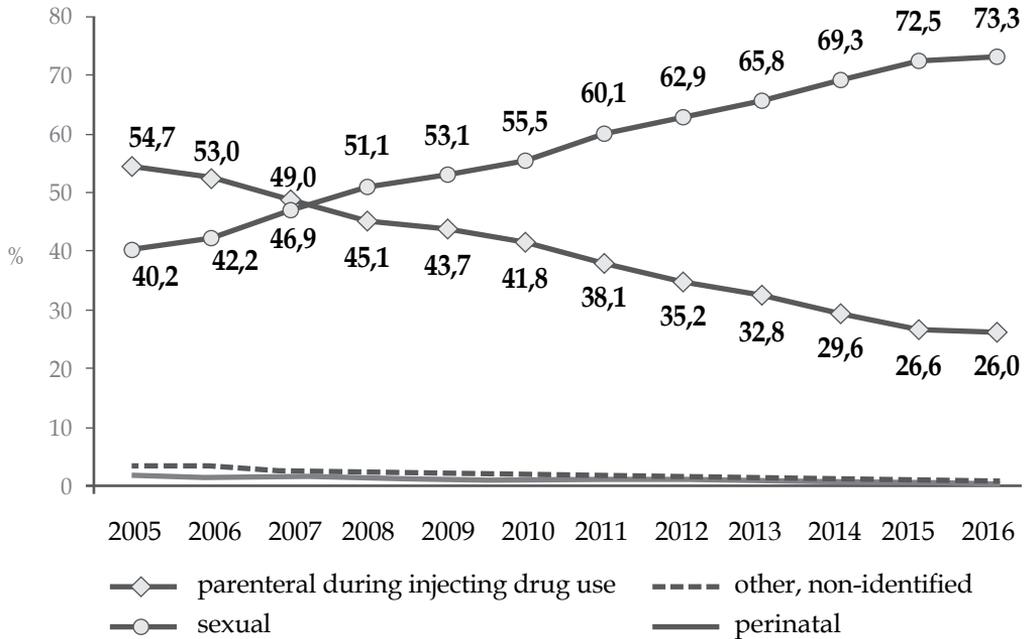
The figure of the active MS group steadily increased from 2011, when it was first calculated and amounted to 71.6%, and in 2016 it was 79.8%, in the regions of the country ranged from 96.3% in the Kharkiv oblast to 69% in the Lviv oblast. The smallest proportion of persons who have undergone a medical examination at least once in a reporting year among HIV-infected persons under MS is registered in Dnipropetrovsk (76.7%), Donetsk (77.4%), Lviv (69%), Mykolayiv (74%), Poltava (74.6%), Kherson oblast (72.1%). Among the persons who passed the medical examination at least once in the reported year, men were 53.6%, women – 46, 4%; city residents accounted for 79.2% and village residents – 20.8%, which generally repeats the corresponding structure of persons who were under MS at the end of the reporting year.

Ways of HIV infection transmission

Since 2008 when a change of the prevailing ways of HIV infectious agent transmission from artificial parenteral way when using injection drugs to sexual transmission occurred in Ukraine, mainly in heterosexual contacts, the latter continues to gain ever higher epidemic significance. In the structure of HIV transmission ways (taking into account the CRPD indicator), the proportion of the sexual way of HIV transmission has steadily increased and in 2016 it reached a value of 73.3% (**Fig. 11**, **Table 10** of the Annex).

The highest growth rates of sexual transmission are registered in Vinnytsia, Dnipropetrovsk, Kirovohrad, Mykolayiv, Poltava, Rivne, Ternopil, Kherson, Khmelnytsky, and Chernihiv oblast.

Figure 11. Structure of HIV transmission ways for the first time registered cases of HIV infection, taking into account the levels of mother-to-child transmission of HIV in Ukraine, % (without taking into account the data from the Autonomous Republic of Crimea since 2014 and a part of the ATO territory since 2015.)

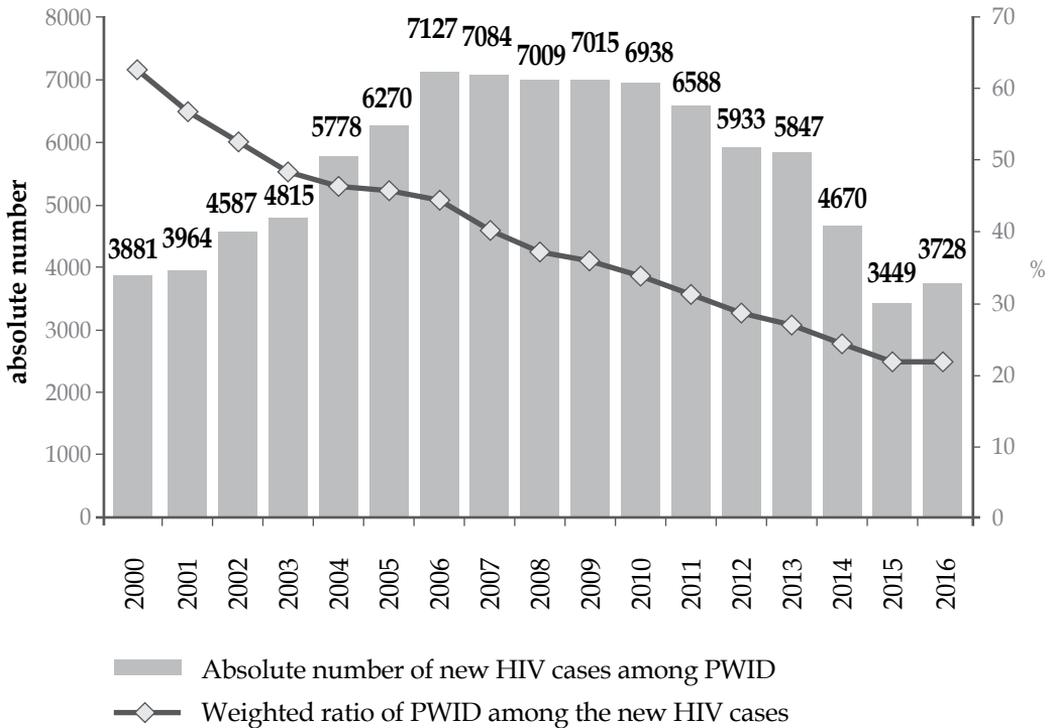


Since 2007, there has been a tendency to decrease of both the absolute number of registered new HIV infection cases among PWID and the proportion of PWID among new cases of HIV infection. If among the first registered cases of HIV infection in 2007, PWID accounted for 44% (more than 7 thousand people), then in 2016 there was a 2 times decrease in the proportion of PWID - 21.8% (3728 people) (**Fig. 12, Table 11** of the Annex).

At the same time, despite the years long tendency to decrease, the relevance of the parenteral route of HIV transmission during injecting drug use remains high - 26.0%. In 2016, among the first registered persons with HIV infection, the number of people who became infected as a result of injecting drug use increased to 3 728 people, compared with 3 449 in the previous year.

The share of this transmission way among the first registered HIV-infected persons in 2016 was significant in Dnipropetrovsk, Zaporizhyya, Kyiv, Lviv, Poltava, Kharkiv, Cherkassy oblast, Kyiv and significantly increased in Volyn, Kyiv, Ternopil, Kharkiv, Chernivtsi oblast.

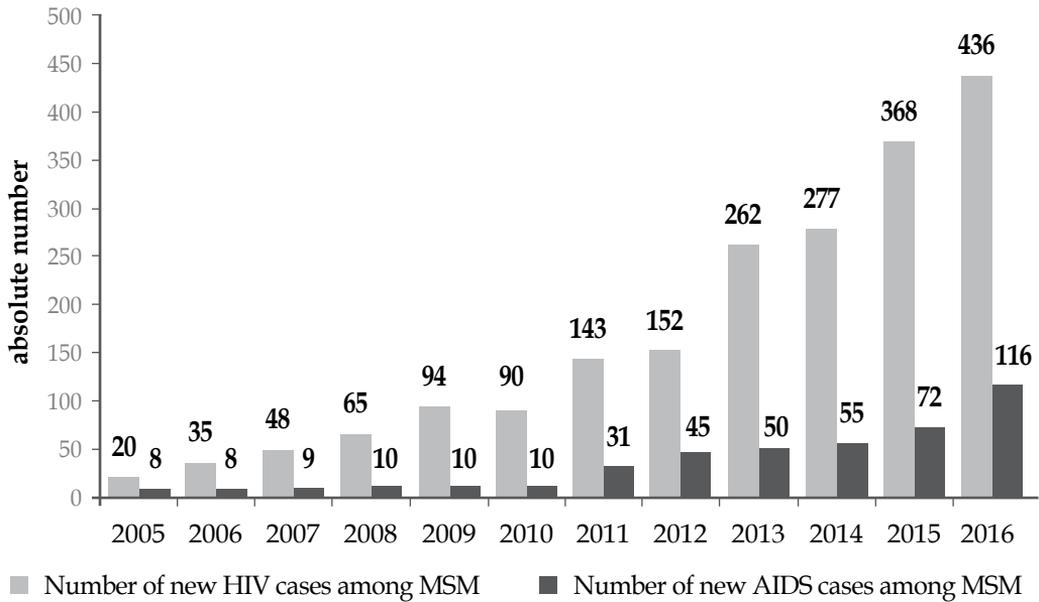
Figure 12. Dynamics of officially registered new cases of HIV infection among PWID in Ukraine (without taking into account the data from the Autonomous Republic of Crimea since 2014 and a part of the ATO territory since 2015)



The MSM group grows increasingly more epidemically significant, among its representatives continues the spread of HIV and its detection at the same time.

The number of officially registered new cases of HIV infection among MSM in the country increased annually - from 20 in 2005 to 436 in 2016 (**Figure 13**).

Figure 13. *Dynamics of the number of new cases of HIV infection and AIDS among MSM in Ukraine (without taking into account the data from the Autonomous Republic of Crimea since 2014 and a part of the ATO territory since 2015)*



However, there is still a significant underestimation of HIV-related cases of sex among men.

As a rule, MSM conceal their sexual orientation, which creates barriers to getting HIV treatment and prevention services which they require. Besides, men who practice bisexual contacts (according to an operational study, a quarter of the interviewed MSM practiced sex with women) are a "bridge group" between MSM and heterosexual women population.

The general clinical findings and associated pathologies/ conditions in persons aged 15 and older with the first confirmed HIV diagnosis in life

In 2016 MS in healthcare facilities of AIDS service was assumed over 14 334 HIV-infected people with confirmed HIV diagnosis, of them 14 249 persons aged 15 and over and 85 children aged 0-14. Among children in the 50.6% of cases (43 children), III-IV clinical stages of HIV infection were diagnosed.

Over the recent three years, among the first registered HIV-infected persons aged 15 years and over, 33-34% were persons with nosologies of the I clinical stage, about 12% - the second stage, 18-20% - the third stage, 33-36% - the IV stage. That is, more than half (53-55%) among all the first registered cases were HIV-infected individuals diagnosed with III-IV clinical stages of HIV infection.

In almost all regions of the country, there is a tendency of increasing detection of HIV infection in later stages of the disease. Such data draw attention to the importance of planning measures to ensure the availability of HIV testing services for the population, to improve the early detection of HIV infection and the timely coverage of HIV-infected people with MS.

Among the patients first diagnosed with HIV infection aged 15 and older in 2016, as in the previous year, 76% and 75% respectively were surveyed for the presence of hepatitis B and hepatitis C markers. According to the results of the study, hepatitis B markers were detected in 11% of the examined persons, and in 28.8% persons - hepatitis C markers compared to 8.4 and 36.3%, respectively, during the previous year.

In order to identify the STIs, 82.2% of the people were examined (in 2015 - 80.1%), of which in 29% of the examined people the STIs was identified compared to 18.8% in the previous year. In particular, the number of people diagnosed with syphilis increased by 151 people in 2016 compared to 89 in 2015 (**Table 12** of the Annex).

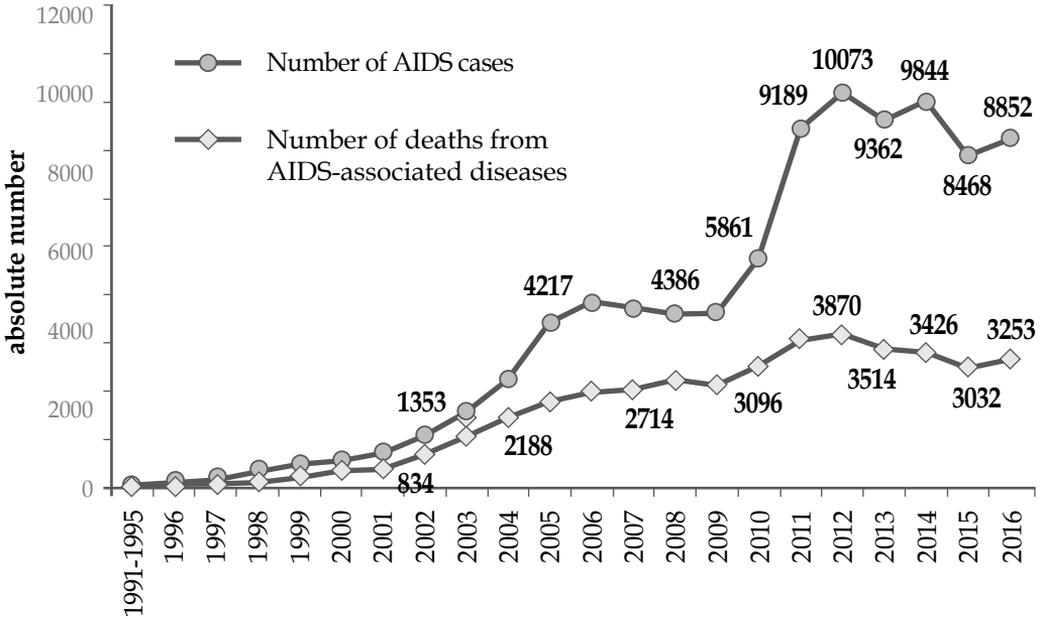
In 2016, some increase in the coverage with the CD4 examination of persons registered for the first time aged 15 and over was recorded - 88.2% (N = 12,573) compared to 86.9% (N = 11,198) in the previous year. The structure of persons with different range of CD4-lymphocytes measurements according to 2016 data was the same as in the previous year. The proportion of people who at the time of registration due to HIV had CD4-lymphocyte count at 500 cells/ μ l and more was 24.7% (2015 - 24.7%), 350-499 cells/ μ l CD4- 17.7% (2015 - 17.8%), 200-349 cells/ μ l CD4- 24.0% (2015 - 24.0%), less than 200 cells/ μ l CD4- 33.6% (2015 - 33.5%).

Among people examined for CD4 in 2015-2016, about 57% of people had CD4 counts less than 350 cells/ μ l.

AIDS incidence and mortality from AIDS-related diseases

In 2016 8,852 cases of AIDS were diagnosed compared to 8,468 in 2015 and 9,844 in 2014, the incidence rate for AIDS was 20.7 per 100,000 thousand people in 2016 compared to 19.8 in 2015 and 22.9 in 2014. The growth rate of AIDS incidence rate in the country in 2016 was + 5%, as compared to the previous year rate (**Fig. 14, Table. Annex 14**).

Figure 14. *Number of new cases of AIDS and deaths from AIDS-related diseases among Ukrainian citizens (without taking into account the data from the Autonomous Republic of Crimea since 2014 and a part of the ATO territory since 2015.)*



Significant increase rates in the incidence of AIDS were registered in Donetsk, Zaporizhyya, Kyiv, Luhansk, Mykolayiv, Rivne, Ternopil, Kharkiv, Kherson, Khmelnytskyi and Kyiv. In 2016, the highest AIDS rates were in Dnipropetrovsk (61.1 per 100 thousand U.S.), Zaporizhyya (25.6), Kyiv (26.9), Mykolayiv (38.0), Odesa (59.8) and Chernihiv (22.9) oblast.

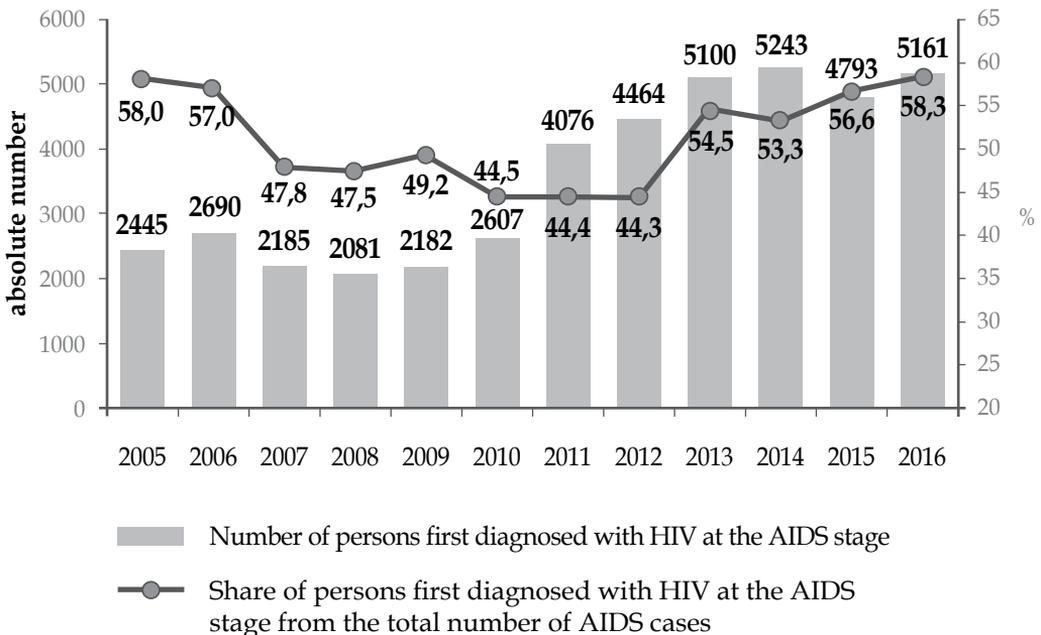
Among the first registered AIDS patients in 2016, as in previous years, men dominated – 62%, the share of women was 38%. The age structure was as follows: persons aged 0-17 inclusive – 0.8%, 18-24 years – 1.4%, 25-49 years – 83%, 50 years and older – 14.8%. The share of city residents among the first registered AIDS patients in 2016 was 76% (in 2015 – 77%; in 2014 – 80.2%), of the village residents – 24% (2015 – 23%, in 2014 – 19.8%).

TB is still the most widespread AIDS indicator disease in Ukraine and in the world. According to the ECDC and WHO Regional Office for Europe, over the last five years, the number of new cases of TB/HIV in the countries of the European Region of WHO has increased by 40%. In Ukraine, against the background of an increase in the number of AIDS cases in 2016, the number of people with TB/HIV co-infection increased by 4,938 compared to 4,470 in 2015 and 4,449 in 2014. The share of TB patients among new

AIDS cases continue increasing – in 2016 it was 55.8% compared to 52.8% in 2015 and 49.3% in 2014 among 38 730 AIDS under MS. As of 01.01.2017, TB/HIV co-infection is diagnosed in 12 948 people, which is 33.4%. The decrease in the proportion of patients with TB among AIDS patients is registered at the end of the year, compared to the data of the previous years (2015 – 36.9%, 2014 – 44.1%). The proportion of people diagnosed with FDTB among AIDS patients under surveillance had a positive trend towards a gradual decline and by the end of 2016 it was 27.4% compared to 28.5% in 2015 and 28.7% in 2014. (Table 15, 16 of the Annex).

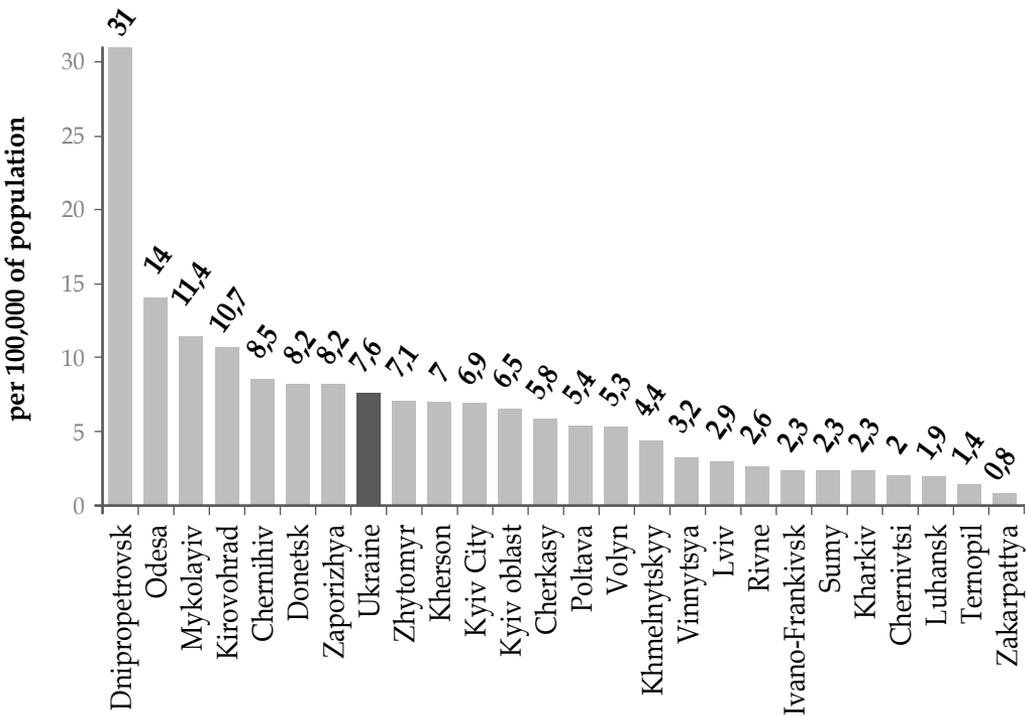
An obstacle for the elimination of AIDS is the late diagnosis of HIV infection. More than half of patients are enrolled for medical supervision for the first time when they already are at the stage of AIDS, the number of such persons is increasing annually, which is one of the indicators of late detection of HIV infection. In 2016, the proportion of people diagnosed with HIV in the stage of AIDS for the first time in life was 58.3% of the new cases of AIDS in Ukraine (Figure 15).

Figure 15. *Number of people diagnosed with HIV at the AIDS stage for the first time in life and the proportion of such people among new AIDS cases in Ukraine for the period of 2005-2016 (without taking into account the data from the Autonomous Republic of Crimea since 2014 and a part of the ATO territory since 2015.)*



In 2016, 3253 patients died of AIDS, compared to 3012 in 2015 and 3426 in 2014. The mortality rate from AIDS has been fluctuating and amounted to 7.6 per 100 thousand people in 2016 compared to 7.1 in 2015 and 8.0 in 2014. The rate of growth of mortality rate from AIDS in the country in 2016 was + 7.7%, as compared with the previous year. The highest rates of AIDS deaths were registered in Dnipropetrovsk (31.0 per 100 thousand people), Donetsk (8.2), Zaporizhyya (8.2), Kirovohrad (10.7), Mykolaiv (11.4), Odesa (14.0) and Chernihiv (8.5) oblast (Fig. 16, Table 17 of the Annex).

Figure 16. Territorial distribution of regions of Ukraine according to the mortality rate from AIDS in 2016



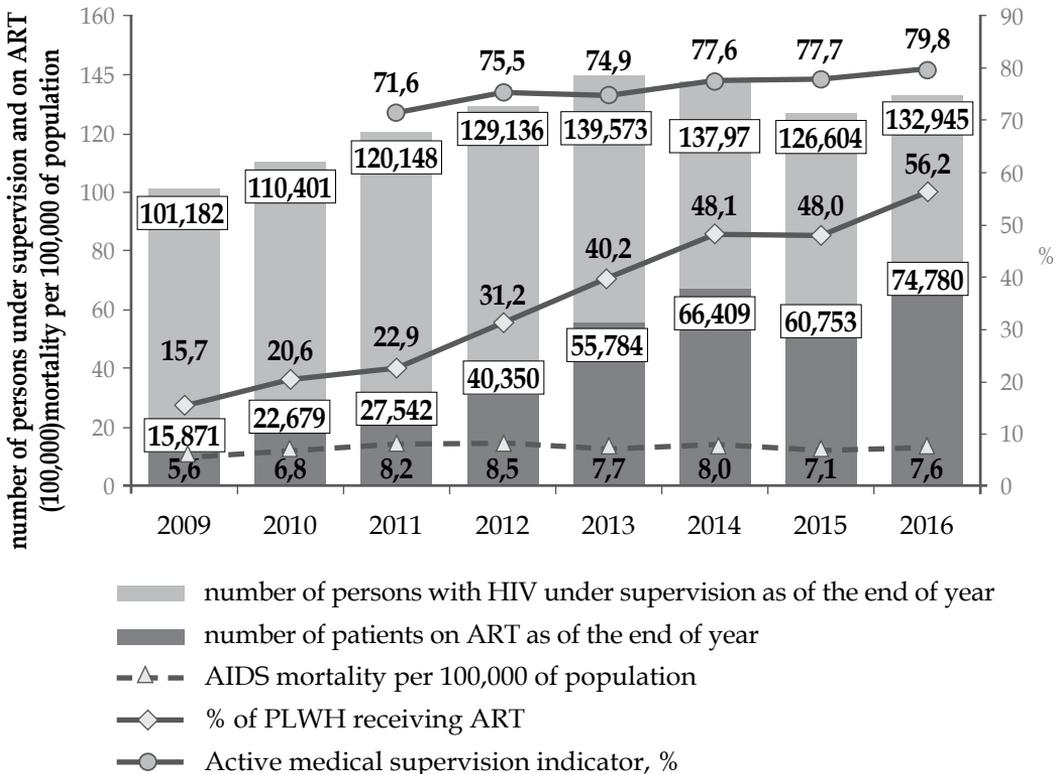
The highest rates of mortality from AIDS have been recorded in Vinnitsya, Kirovohrad, Mykolayiv, Rivne, Sumy, Kherson, Khmelnytsky, Chernivtsi, and Chernihiv oblasts. In particular, a significant increase in the level of AIDS mortality in Kherson oblast is due to the underestimating of the appropriate figures during previous years.

The trends in changing the number of deaths from AIDS generally follow the trends in the number of AIDS cases. It can be stated that there have been no significant fluctuations

in the values of the figures of AIDS prevalence and mortality, which during the recent five years was 20-22 per 100 thousand people and 7-8 per 100 thousand people, respectively.

Alongside with the evolution of WHO recommendations and changes in the regulatory framework in the country concerning the indication and start of ART, the number of patients who needed it increased annually, as well as the number of patients involved in antiretroviral treatment. The number of patients receiving ART at the end of the year amounted to 74,780 people in 2016 compared to 15,871 in 2009. The share of PLWH receiving ART from the total number of HIV-infected patients under MS as of the end of the year, respectively, increased to 56.2% in 2016 compared to 15.7% in 2009. As of 01.01.2017, more than half of the HIV-infected subjects were under surveillance (**Figure 17**).

Figure 17. Number and share of PLWH receiving ART from the total number of HIV-infected patients under medical surveillance as of the end of the year in Ukraine for the period of 2009-2016 (without taking into account the data from the Autonomous Republic of Crimea since 2014 and a part of the ATO territory since 2015.)



Reasons for deregistration of HIV-infected persons in healthcare facilities of AIDS service

In 2016 in Ukraine in healthcare facilities of AIDS service 12 674 HIV-infected persons were deregistered, of them 5 305 persons as deceased (41.9%), due to the change of a place of residence – 2 334 persons (18.4%), due to the absence of HIV infection in a child – 2 853 children (22.5%), for other reasons – 2 182 persons (17.2%).

In the structure of the reasons for deregistration in 2016, the proportion of persons deregistered due to death decreased to 41.9% compared to 45.4% in the previous year, due to the change of a place of residence – 18.4% compared to 25.3%, respectively, and due to the absence of HIV infection in a child – 22.5% compared to 26.7%.

The increase in the proportion of people deregistered for other reasons (17.2% in 2016 versus 2.6% in 2015) was recorded due to HIV-infected persons in the inactive supervision group, the data of whose place of residence is absent.

The largest number of HIV-infected persons for this reason was taken off the record in Kyiv (892 people), Odessa (1 016), Khmelnytsky (83), Lviv (44), Zaporizhyia (33), Cherkasy (26) oblasts, which is a sign of the poor quality of medical records and supervision in these regions.

The structure of death causes of HIV-infected people in 2016 remained basically unchanged compared with the data of previous years. Among all 5,305 HIV-infected people who were removed from surveillance in 2016 due to death, 62.9% of lethal cases (3,338 deaths) were directly related to HIV infection, of them – 97.5% (3,253 people) died of AIDS.

Other HIV-infected people died due to non-HIV-related causes:

- *from other diseases (1 247 cases; 23,5%);*
- *from viral hepatitis B/C and liver cirrhosis of viral etiology (307 cases; 5,8%);*
- *for other reasons (301 cases; 5,7%);*
- *because of to non-HIV-related TB (83 cases; 1,6%);*
- *the causes of death of 29 deceased remain unknown (0,5%) (table 18 of the Annex).*

Among all deceased in 2016, men dominated by a proportion of 64%, women accounted for 36%. The structure of deceased persons by age was as follows: persons aged 0-17 years old – 1.2%, 18-24 years – 1.1%, 25-49 years – 81.5%, 50 years and older – 16.2% .

The analysis of the structure of the ways of HIV infecting of the deceased persons in Ukraine has made it possible to establish that the proportion of persons injecting drugs has decreased by 1.8 times from 2005 to 2016, from 77.3% to 42.2%. At the time of the spread of the sexually transmitted infectious agent in the general population, the cases

of deaths of people infected with HIV as a result of unprotected sex are registered more and more often in Ukraine – in 2016 their share reached 56.1%.

According to statistical data, among all people who died in 2016, 4733 persons required ART, of which 2,303 were receiving ART at the time of death, which is 48.7% of those who required it (2015 – 45.3%, 2014 – 46,2%). Antiretroviral treatment lasted for 12 months or more (49.0%) (2015 – 49.1% 2014 – 36 %) for 1 132 persons among the deceased who were receiving ART at the time of death. In particular, over the past three years, more than half of the patients who died due to causes directly related to HIV infection required, but did not receive ART (2016 – 54.6%, 2015 – 59.5%, 2014 – 55,1%) due to the late detection of illness, low attachment / refusal to get treatment, contraindications to ART or poor-quality MS over HIV-infected persons in the medical facilities of AIDS service. The number of such deaths in 2016 was the smallest (1 822 persons) (2015 – 1 876, 2014 – 2 062). However, the existing scope of ART did not have a significant effect on the decrease of the mortality rate from diseases directly related to HIV infection.

Records of migration of HIV-infected people from the localities temporary uncontrolled by the state authorities

As of 01.01.2017, 1 614 (74.8%) HIV-infected people came from the localities where the state authorities temporarily do not exercise their powers and are under MS in health care facilities in the AIDS service in other regions of Ukraine, including 1 207 people (74.8%) from Donetsk oblast, 298 people (18.5%) from Luhansk oblast and 109 people (6.7%) from the AR of Crimea. The largest number of such people is under supervision in Donetsk, Dnipropetrovsk, Zaporizhya, Odessa oblast and in Kyiv (Table 7).

Table 7. Number of HIV-infected people who arrived from Donetsk and Luhansk oblast and the AR of Crimea and under medical supervision in health care facilities in the AIDS service in other regions as of 01.01.2017

Regions	Total	Including those who arrived from		
		ATO territory		AR of Crimea and Sevastopol
		Donetsk oblast	Luhansk oblast	
Ukraine	1 614	1 207	298	109
Vinnitsa	37	29	5	3
Volyn	5	2	0	3

HIV infection in Ukraine

Regions	Total	Including those who arrived from		
		ATO territory		AR of Crimea and Sevastopol
		Donetsk oblast	Luhansk oblast	
Dnipropetrovsk	189	147	28	14
Donetsk ¹	301	294	7	0
Zhytomyr	19	10	5	4
Zakarpattia	13	11	1	1
Zaporizhya	149	127	14	8
Ivano-Frankivsk	5	4	0	1
Kyiv	73	52	17	4
Kirovograd	22	13	6	3
Luhansk ¹	65	6	59	0
Lviv	34	20	6	8
Mykolaiv	34	17	8	9
Odessa	118	88	25	5
Poltava	62	48	10	4
Rivne	3	2	1	0
Sumy	27	23	4	0
Ternopil	4	4	0	0
Kharkiv	99	60	29	10
Kherson	22	18	2	2
Khmelnitsky	20	16	3	1
Cherkasy	12	10	2	0
Chernivtsi	21	16	4	1
Chernihiv	15	13	1	1
Kyiv city	265	177	61	27

¹according to the health care facilities data from the territories where the state authorities exercise their powers

Among 1 614 HIV-infected people are 830 men (51.4%) and 784 women (48.6%). In the age structure children under the age of 14 inclusive amounted to 6.7% (108 persons), teenagers aged 15-17 inclusive - 0.7% (12 persons), people aged 18-24 inclusive - 3.1% (50 persons) and aged 25 and more - 89.5% (1 444 persons).

The number of HIV-infected PWID is 526 persons (32.6% of the total number of HIV-infected people who arrived) of them - 369 PWID (70.2% of the total number of HIV-infected PWID, who arrived) from Donetsk oblast, 104 PWID (19.8%) - from Luhansk oblast and 53 PWID (10%) - from the AR of Crimea. As of 01.01.2017 from the AR of Crimea, Donetsk and Luhansk oblasts arrived and were under MS: 31 HIV-positive pregnant women, 114 children born to HIV-infected women, of whom - 62 children with confirmed HIV infection diagnosis.

During 2016, to health care facilities in the AIDS service in other regions of Ukraine arrived from the localities where the state authorities temporarily failed to carry out their activities 504 HIV-infected persons, which is less than the data of the previous year (731 persons). The arriving PLWH were mostly the residents of Donetsk oblast. The largest number of arrived persons was registered in 2016 in health care facilities of Donetsk and Luhansk oblast, on the territory of which the state authorities exercise their powers, in health care facilities of the Kharkiv, Zaporizhya oblasts and in Kyiv (**Table 8** of the Annex).

Since 2015 the statistics from a part of the ATO territory is missing, therefore, there was a decrease in the data of the registration of HIV-infected persons in Donetsk and Luhansk oblasts, as compared to 2014: the group of HIV-infected persons under MS by the end of the year in both oblasts decreased by 56% (in Donetsk oblast - from 28 776 to 12 656 persons; in Luhansk oblast - from 4 459 to 1 971 persons).

In 2016, due to the active involvement in the activities of the Donetsk and Luhansk RC AIDS, the number of HIV-infected persons enrolled under medical supervision for the first time and of those who were supervised at the end of the year, as well as the number of persons in the active MS group grew in both regions. The number of HIV-infected people under MS increased by 5% by the end of the year in both oblasts (in Donetsk oblast from 12 656 to 13 305 people, in Luhansk oblast - from 1 971 to 2 072 people) (**Table 8**).

Table 8. Record of HIV-infected persons living in Donetsk and Luhansk oblasts in 2014 – 2016

№	Record figures of HIV-infected persons (including children born to HIV-infected women with uncertain status)	Donetsk oblast ¹			Luhansk oblast ¹		
		2014	2015	2016	2014	2015	2016
1	Were supervised at the beginning of the reporting year	27 933	12 520	12 656	4 569	2 000	1 971
2	Record figures of HIV-infected persons (including children born to HIV-infected women with uncertain status)	Donetsk oblast ¹			Luhansk oblast ¹		
		2014	2015	2016	2014	2015	2016
	Supervision was established during the reporting year	3 069	1 521	1 758	538	267	357
	of them: <i>diagnosed for the first time in life</i>	3 043	1 023	1 432	518	183	256
3	Deregistered during the reporting year	2 226	1 385	1 109	648	296	256
	including due to the following: <i>absence of HIV infection in the child</i>	508	284	264	92	54	49
	<i>change of place of residence</i>	486	406²	328	358	141	105
	<i>death</i>	1 231	531	517	198	99	99
	<i>for other reason</i>	1	164	0	0	2	3
4	Are supervised at the end of the reporting year	28 776	12 656	13 305	4 459	1 971	2 072
	<i>of them: active medical supervision group</i>	21 582	8 872	10 303	3 434	1 604	1 793

¹ without taking into account the data from the part of the territory of the antiterrorist operation since 2015

²including the number of persons who changed the place of residence within the region

Summing up the above, the general tendencies of HIV transmission at the present stage of the HIV epidemic in Ukraine can be characterized as follows:

Over the recent years, there have been some signs of stabilizing the HIV epidemic process. According to SEM, during 2009-2016, the HIV prevalence among Ukrainian citizens is keeping at about 1% (0.99% in 2016), there is still a clear tendency of decreasing prevalence of HIV among pregnant women (from 0.55% in 2009 to 0.32% in 2016) and donors (from 0.14% in 2009 to 0.09% in 2016). The prevalence of HIV among pregnant women aged 15-24 also tends to decrease (from 0.32% in 2014 to 0.25% in 2016).

There has been a consistent tendency of decreasing the proportion of HIV-infected persons aged 15-24 years among all the newly registered cases of HIV (from 12.0% in 2009 to 5.2% in 2016) and the incidence rate of HIV infection among the population of the corresponding age group (from 35.5 per 100 thousand people aged 15-24 in 2009 to 19.4 in 2016). A significant decrease in the level of mother-to-child transmission of HIV in the country has been achieved (an 8 times decrease in the frequency of mother-to-child transmission of HIV - from 27.8% in 2001 to 3.3% in 2014).

Over the past five years, there has been a stabilization of the AIDS incidence and AIDS mortality rates figures. However, according to the data of 2016, HIV/ AIDS incidence and AIDS mortality rates have increased in the country as compared to the corresponding figures for the previous year (growth rates were + 8%, + 5% and + 7.7%, respectively).

There is a tendency for the annual increase in the number and proportion of patients over whom MS was first established with the diagnosis of HIV infection at late stages of the disease. More than half of the people aged 15 years and older are newly diagnosed with the III-IV clinical stages of HIV infection (55.6% in 2016). Among the first-time registered AIDS patients, about 50% of people first diagnosed with HIV were already in the AIDS stage (58% in 2016). TB remains the most widespread AIDS indicator disease and one of the main causes of death of HIV-infected individuals.

According to statistics, about a quarter of HIV-positive people identified by laboratory investigations were annually left outside the scope of medical records (26.4% in 2016). In addition, every year the fourth or fifth part of those who were registered were not covered by MS for various reasons - in 2016 the figure of active medical supervision group was 79.8%.

The role of the sexual transmission way in the epidemic process of HIV infection is increasing. In 2016, the share of this way taking into account the frequency of mother-to-child transmission of HIV was 73.3%.

Still, the parenteral way of transmission in course of injecting drug use remains active. In 2016, the number of people among the first registered persons with HIV infection, who

became infected as a result of injecting drug use increased and was 3 728 people, compared with 3 449 in the previous year. The increase in the share of this way of HIV transmission is registered in 11 regions.

The epidemic significance of the spread of HIV among MSM and from MSM to the general population is increasing, however, due to the peculiarities of this group, the record remains incomplete.

Among the first registered HIV-infected people the people of working age are mostly affected by the HIV epidemic – the HIV-infected people aged 25 – 49, who make up more than two-thirds. The share of men prevails and is gradually increasing (57.5% in 2016). There is a tendency of extending the age limits of the HIV epidemic towards older people. In 2016, the proportion of women aged 15-24 among the newly registered HIV-infected women aged 15 years and older (9.5%) remains much higher compared to the similar figure among men (3.9%).

The spread of HIV in different regions of Ukraine is not uniform. More than half of all HIV-infected people who are officially under MS are living in the territories of Dnipropetrovsk, Donetsk, Odessa oblast and Kyiv. The urban population is mostly affected by the epidemic (more than 70% of the newly registered people with HIV infection). The HIV epidemic is slowly spreading among villagers, in 10 regions the incidence among rural population exceeds the country's average.

In Ukraine, the concentrated stage of the HIV epidemic has been documented since 1996, that is, 2 years after the registration of the first few cases of PWID infecting. However, today, taking into account the high rates of HIV prevalence among pregnant women in some regions (**Table 12**) and recent results of bio-behavioral research among MARPs (2013, 2015), the question arises as to the possibility of the transition of the epidemic to the next stage defined as mixed according to Quantitative WHO/UNAIDS Criteria for Determining the Stage of the HIV Epidemic³. An integrated analysis of the ES data allows to claim that the generalization of the HIV epidemic in Ukraine has not yet happen, as the involvement of persons belonging to the MARPs in the epidemic process can still be followed, but among PLWH the population subgroups with low risk behavior concerning HIV infection are determined more and more often, which requires additional study of sub-epidemics in different territories of Ukraine.

³ **Concentrated epidemic:** HIV infection has spread rapidly in one or several specific groups of the population, but has not yet spread widely among the general population. Quantitative equivalent: HIV prevalence rates consistently exceed 5% in at least one of the population groups, but they are below 1% among pregnant women living in urban areas.

Generalized epidemic: HIV infection has become widespread among the general population. Quantitative equivalent: HIV prevalence rates of among pregnant women consistently exceed 1%. As a rule, generalized HIV epidemics are mixed, as they have a higher degree of affecting certain (key) populations.

Mixed epidemic: people infected with HIV are found in one or more groups of population as well as among the general population. Thus, mixed epidemics represent one or more concentrated epidemics as a part of a generalized epidemic.

Low-level epidemic: the one in which HIV prevalence rates continuously stay at a level not exceeding 1%, among the general population, or 5% in any population group.

SECTION 6.

ON THE CASE OF HIV INFECTION OF A RECIPIENT THROUGH A COMPONENT OF DONOR BLOOD (PACKED ERYTHROCYTES) IN CHERKASY OBLAST 4

At the Municipally-Owned Institution "Cherkassy Oblast Blood Transfusion Station" of the Cherkassy Oblast Council during the testing of blood obtained from a blood donation from a professional donor K. on 26.02.2016, positive examination results for serological markers of HIV were obtained dated 29.02-01.03.2016 (DIA-HIV-Ag/ Ab test system series 063-15, expiration date 06.2017).

Verification examinations were carried out at the Municipally-Owned Institution "Cherkassy Oblast Centre for AIDS Prevention and Control" of Cherkassy Oblast Council dated 10.03.2016 and 17.03.2016, and a positive result was verified. All blood components from this blood donation were written off as an absolute waste.

The donor K. denies injecting drug use. The result of examination of his cohabiting wife, with whom he has not been living since October 2015, is negative (as of 26.03.2016). The donor K. has had casual unprotected sexual relations, so his way of infection is most likely sexual.

During the epidemiological investigation, it was found that the donor K. donated blood twice during 2015.

The first donation happened on 21.10.2015, the result of its HIV test was negative. Blood was processed into:

- *plasma, which was quarantined and subsequently removed and disinfected;*
- *packed erythrocytes, from which washed erythrocytes were made and transfused to the recipient T. on 24.10.2015 during a surgery associated with hip fracture. The patient T. died on 30.11.2016 (cause of death: III degree chronic pulmonary heart disease, III degree cerebral atherosclerosis).*

⁴ According to the Health Care Commission materials of Cherkassy Oblast State Administration of Cherkassy Oblast

The second donation happened on 22.12.2015, blood was examined for serological markers of HIV on 23.12.2015 with a negative result (test system GenscreenUltra HIV Ag/Ab series 4J1696, expire date 28.02.16). Blood was divided into the following components:

- *plasma, which was quarantined and subsequently disposed of;*
- *packed erythrocytes, which was transfused on 28.12.2015 to the patient L. who was receiving medical treatment at the municipally-owned Institution "Cherkassy Oblast Oncology Centre" of Cherkasy Oblast Council (KZ "CHOOD" CHOR) (diagnosis: cancer IV clinical stage).*

The investigation found that the patient L, born in 1958 was under medical supervision at KZ "CHOOD" CHOR since July 2015 and during the supervision period from 06.07.2015 to 02.09.2016 he was taken to the Oblast Treatment and Diagnostic Hematology Centre KZ "CHOOD" CHOR nine times, where he due to his severe health condition got 23 erythrocyte transfusions from 23 donors.

During the epidemiological investigation, the recipient L. was examined for antibodies to HIV with a negative result (blood sent on 30.03.2016 under the code 113, the primary screening used the ELISA method with the test system DIA-HIV 1/2, series 126-16, certificate No. 15232 dated 31.03.2016), ie 3 months after the transfusion.

The recipient L. was not examined repeatedly for the purpose of detecting HIV serological markers 6 months after the date of transfusion of packed erythrocytes obtained from the HIV infected donor K. When the patient L. was staying in the day patient department of KZ "CHOOD" CHOR, antibodies to HIV were detected in him - a certificate of the positive result of the HIV test dated 02.09.2016 № 1043. The patient L. categorically denies having sexual intercourse during the recent 2 years.

Besides the donor K. during October - November 2016 all other donors from whom blood products were prepared and transferred to the recipient L. were additionally screened for the purpose of detecting serological markers of HIV, and the results were negative.

The conclusion of the Health Care Administration Commission of Oblast State Administration of Cherkasy Oblast:

"Taking into consideration the above and the recognition by the donor K. that he had random unprotected sexual relations, it can be assumed that at the time of donation of blood on 22.12.2015, the donor K. was infected with HIV, was in the stage of the "sero-conversion window" and could have become a source of infecting the patient L. with the human immunodeficiency virus."

SECTION 7.

HIV/AIDS ESTIMATED DATA AND SERVICE CASCADE FOR PEOPLE LIVING WITH HIV AT THE BEGINNING OF 2017

Country-level HIV/ AIDS estimates and forecasts are used for various purposes – as arguments for resource allocation, taking strategic decisions to enhance the preventive and treatment measures, planning health services and medication needs, promoting a common understanding of the consequences of the HIV epidemic for the demographic situation of the country. At the global level, the values of these estimates are summarized for the compilation of regional and global assessments used to monitor the implementation of the indicators of the Sustainable Development Goals and the 2016 Political Declaration on HIV / AIDS: “On the Fast-Track to Accelerate the Fight against HIV and to End the AIDS Epidemic by 2030.”.

The process of obtaining evaluation data in 2016 was carried out in close cooperation with the UNAIDS Office in Ukraine and the experts of the UNAIDS/ WHO Working Group on Global HIV/ AIDS and STI Surveillance. In March 2017, in Almaty (Kazakhstan), the UNAIDS/WHO Working Group on Global HIV/ AIDS and STI surveillance organized a regional HIV / AIDS assessment and forecasting workshop and presented an updated version of the Spectrum/ RP program (version 5.5). During the workshop, the latest scientific research data, forming the basis of the updated software were also considered. The Spectrum/ RP 5.5 program was recommended for new national estimates.

It should be emphasized that according to WHO recommendations⁵ – a national assessment of the total number of people living with HIV at both the national and regional level is an essential component of HIV/AIDS epidemiological surveillance. The national assessment of the HIV/AIDS situation in Ukraine as of the beginning of 2017 for the first

⁵ *Guidelines for second generation HIV surveillance: an update: know your epidemic. World Health Organization 2013*

time included the regional estimates based on regional demographic data, routine epidemiological, clinical, laboratory monitoring data, the regional estimates of the number of PWID, SWs, MSM updated in 2016 and the results bio-behavioral studies conducted in all regions of the country.

The obtained results were considered and approved at 2 meetings of the "Strategic Information" Subgroup of the Group for the development of a draft request of Ukraine to the GF to finance the programs for counteracting tuberculosis and HIV/AIDS in 2018-2020 (02.03.2017, 22.03. 2017), the meeting of the Interdepartmental Working Group for Monitoring and Evaluation of the Efficiency of Implementation of Program Measures against HIV/AIDS, Tuberculosis and Other Socially Dangerous Diseases (April 25, 2017) and provided to the UNAIDS Secretariat, WHO and the UNAIDS/WHO Working Group on Global HIV/ AIDS and STI Surveillance for expert evaluation and preparation of the next global HIV/ AIDS report for 2016.

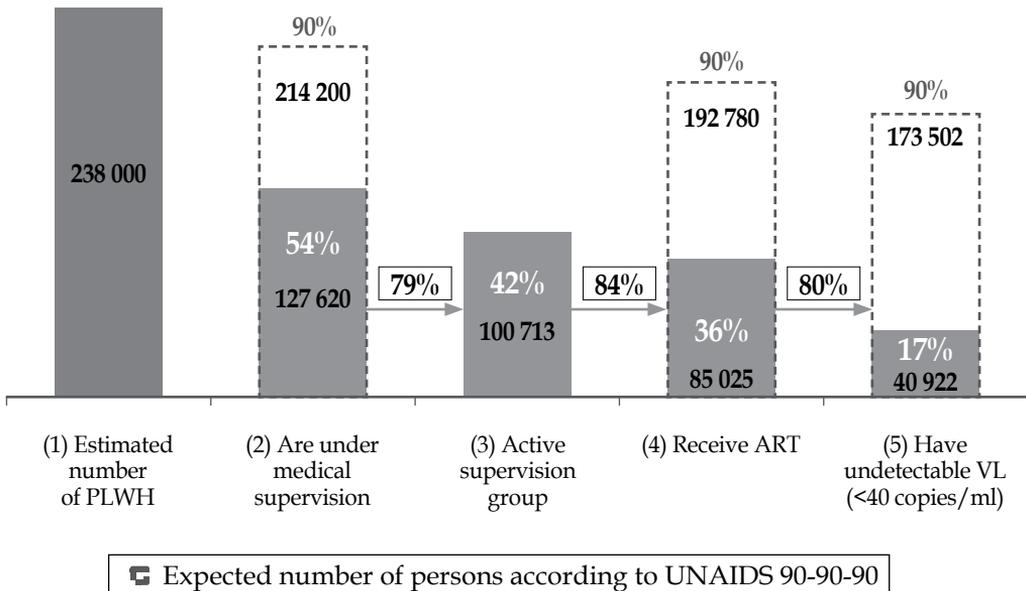
According to the results of calculations using Spectrum/ERP 5.5, in Ukraine at the beginning of 2017 lived 238 thousand PLWH of all age categories, according to official statistics; as of 01.01.2017, there were 127 620 PLWH under the medical supervision at the facilities of the AIDS prevention and control service (Without taking into account children diagnosed with HIV in the confirmation stage). The correlation between the estimated and actual data concerning the number of PLWH is 1,86:1, that is, almost every second person from among PLWH in Ukraine has applied for medical assistance and is registered with a healthcare facility (Table 9).

Table 9. Assessment of the HIV/AIDS situation in Ukraine as of the beginning of 2017 and estimated figures for the period up to 2021

Estimated Figures	2016	2017	2018	2019	2020	2021
Total number of people living with HIV (all age groups)	238 thousands	241 thousands	245 thousands	252 thousands	260 thousands	268 thousands
HIV prevalence rate (adults aged 15 years and over, %)	0,61	0,63	0,66	0,68	0,71	0,74
Estimated number of new cases of HIV infection (adults aged 15 years and over, abs. number)	15 832	15 555	15 063	14 501	14 206	14 007
Estimated number of deaths from diseases caused by AIDS (adults aged 15 years and over, abs. number)	7 770	6 087	5 174	3 825	3 092	2 539

Cross-sectional cascade in Ukraine, showing the implementation of preventive and treatment programs, is designed using the updated estimated data and is based on routine figures of testing monitoring, treatment, and laboratory support (Figure 18).

Figure 18. Cascade of services for people living with HIV in Ukraine, as of 01.01.2017



Basic data of the cascade of services for PLWH:

(1v) 238 000 PLWH – the estimated number of PLWH in Ukraine at the beginning of 2017 (all age categories).

Estimates were obtained using the Spectrum/EPP software (version 5.5), and include the data from the Autonomous Republic of Crimea, Sevastopol and the entire ATO territory.

(2) 127 620 PLWH (54% of the estimated number of PLWH) – the number of people who are aware of their HIV-positive status and are under MS at the healthcare facilities of AIDS Service in Ukraine, as of 01.01.2017, excluding children with the HIV infection diagnosis at the confirmation stage.

The data on the number of PLWH under MS as of 01.01.2017 are obtained and summarized based on the results of the official statistical reporting of 25 regions of Ukraine, except for the ATO territory, which is temporarily not controlled by the state authorities.

- (3) **100 713** (42% of the estimated number of people living with HIV) is a group of active MS, namely, the number of HIV-infected patients who have undergone a medical examination at least once in 2016, excluding children diagnosed with HIV at the confirmation stage.

At the end of 2016, the active MS group accounted for 79.3% of the total number of HIV-infected individuals who were under MS as of 01.01.2017.

The data are obtained from the results of official statistical reporting of 25 regions of Ukraine, except for the ATO territory, which is temporarily not controlled by the state authorities.

- (4) **85 025 PLWH** (36% of the estimated number of PLWH) is the number of people receiving ART as of 01.01.2017

By the end of 2016, the number of persons receiving ART was 84.4% of the number of active MS patients.

The data are obtained from the results of official statistical reporting of 25 regions of Ukraine, and include data on the territory of the ATO, which is temporarily not controlled by the state authorities.

- (5) **40 922 PLWH** (17% of the estimated number of people living with HIV) – the number of people who received ART for 6 months and reached an undefined level of VL HIV (VL<40 RNA copies/ml), as of 01.01.2017.

The frequency of virological treatment efficiency (the number of people who have reached an undefined level of VL HIV (40 922), from the number of people who have received ART for at least 6 months (49 497)) in Ukraine in 2016 was 80.2%.

The data are obtained from the results of official statistical reporting of 25 regions of Ukraine, except for the territory of the ATO, which is temporarily not controlled by the state authorities.

SECTION 8.

COUNSELING SERVICES ASSOCIATED WITH TESTING FOR HIV INFECTION

Increasing the access and scale of testing to establish a diagnosis of HIV infection for those in whom it is still undefined, especially for population groups at high risk of HIV infection, is a priority prevention measure aimed at overcoming the negative consequences of the HIV epidemic in the world.

In accordance with the new global goals of UNAIDS, "90-90-90", it is necessary to reach the first "90" figure by 2020, which means that 90% of PLWH should be aware of their diagnosis. The first "90" figure is extremely important for achieving the second "90" - the start of ART for HIV-infected individuals - and as a result, to ensure the implementation of the third "90" - a reduction in VL in ART-recipients to the undefined level.

During the global WHO meetings and consultations that took place during 2015, the practicability of replacing the term "HIV testing and counseling" with another term which corresponds to the provision of a full range of medical and social services - "HIV testing services" was considered.

During 2016, the total number of pre-test counseling was 2 596 808 (individual and group), 2 427 527 people agreed to pass the HIV test, and 2 067 006 agreed to get a post-test counseling, which is 79.6% of the total number of pre-test counseling (**Table 10**).

The total number of consultations held in 2016, compared with the previous year, remains constant.

In 2016, among the representatives of the MARPs 602,899 people got pre-test counseling, representing 23.22% of the total number of conducted counseling sessions.

Generally among the representatives of different MARPS categories the following number of people received counseling:

- **H** (*injecting drug use*) – 127 160 (4.9% of the total number of the counseled people);
- **C** (*numerous unprotected heterosexual contacts*) – 193 756 (7.46% of the total number of the counseled people);
- **G** (*homosexual contacts between men*) – 30,222 (1.16% of the total number of the counseled people);
- **I** (*other risk factors*) – 251 761 (9.7% of the total number of the counseled people);

The largest number of the consulted representatives of MARPs was found in the group "other risk factors", which indicates that in some areas the belonging of people to this group is incorrectly determined. For example, this figure is more than 20% in Donetsk (42.57%), Kyiv (24.45%) and Kherson (20.52%) region.

Table 10. *The number of pre-test counseling, the number of consents obtained for passing the HIV test and persons who passed the post-test counseling in 2016*

Oblast	Number of pre-test counseling (individual and group)	Number of consents on passing the HIV test	Number of post-test counseling (total)
Ukraine	2 596 808	2 427 527	2 067 006
Vinnytsya	85650	72259	72157
Volyn	117417	109908	105031
Dnipropetrovsk	314075	299273	259434
Donetsk	138171	112403	75560
Zhytomyr	71266	69897	67171
Zakarpattya	87391	83909	66683
Zaporizhya	155528	138091	111826
Ivano-Frankivsk	76568	75858	68445
Kyiv	69750	65432	44099

Oblast	Number of pre-test counseling (individual and group)	Number of consents on passing the HIV test	Number of post-test counseling (total)
Kirovograd	50477	48383	40958
Lviv	117397	104020	82095
Luhansk	64014	55732	55219
Mykolayiv	89524	84324	70010
Odessa	153150	150316	139265
Poltava	81791	76154	59579
Rivne	93760	90390	73098
Sumy	88387	83473	75831
Ternopil	54784	47689	33338
Kharkiv	172928	159997	131917
Kherson	72827	72687	72740
Khmelnyskyy	113115	107818	90454
Cherkasy	72651	70682	61784
Chernivtsi	57598	53952	53003
Chernihiv	61116	59499	46142
Kyiv city	137473	135381	111167

SECTION 9.

PROVISION OF MEDICAL CARE TO HIV-INFECTED PERSONS AND AIDS PATIENTS

Antiretroviral therapy

ART in Ukraine is provided in accordance with the Clinical Protocol for Antiretroviral Therapy of HIV in Adults and Teenagers approved by the order of the Ministry of Health of Ukraine dated 12.07.2010 No. 551 and the Unified Clinical Protocol for primary, secondary (specialized) and tertiary (highly specialized) medical care for children "HIV -infection", approved by the order of the Ministry of Health of Ukraine dated 24.02.2015 No. 92.

As of 01.01.2017, ART is provided in 281 healthcare facilities of the country (**Table 24** of the Annex), of which:

- 2 national level facilities;
- 25 Oblast AIDS Prevention and Control Centers
- 12 City AIDS Prevention and Control Centers;
- 216 ART based on central district hospitals, city hospitals, polyclinics, territorial medical associations, including 7 sites of Odessa City AIDS Prevention and Control Centers;
- 21 ART sites based on anti-TB Service facilities;
- 5 ART sites based on dermatovenerologic, narcological and psychoneurological dispensaries.

Compared to the previous year, the total number of ART sites has increased by 46 establishments. The number of establishments of the oblast level has increased, which as of 01.01.2017 is 25, but decreased to 12 city AIDS centers.

Since March 2016 the city council decided to stop the operation of the Slovyansk City AIDS Centre, and instead, to start the operation of the Donetsk Oblast AIDS Centre in Slovyansk.

The number of ART sites based on central district hospitals, city hospitals, polyclinics, territorial medical associations increased by 30 (in Dnipropetrovsk, Zaporizhya, Ivano-Frankivsk, Kyiv, Kirovohrad, Odesa, Cherkasy, Chernihiv oblasts and Kyiv city) and by 4 sites based on anti-TB facilities (in Kyiv, Mykolayiv, Odessa oblasts and in Kyiv city).

The total number of "Dovira" (confidence) cabinets and the ones functioning as "Dovira" offices in accordance with the orders of the health care administrations of oblast state administrations, health care facilities in regions, as of 01.01.2017 - 665 of them: 42 "Dovira" offices operate on the basis of regional and city AIDS centers, 269 - on the basis of infectious diseases units, 36 - on the basis of other healthcare offices and 317 - as independent units (**Table 25** of the Appendix).

The report for 2016 does not include health care facilities providing HIV/ AIDS services in the Autonomous Republic of Crimea, Sevastopol and in a part of the ATO territory.

As of 01.01.2017 74 780 patients were receiving ART (budget-funded - 41 910, financed by the GF - 24 567, financed by PEPFAR - 8 303). From the specified total number of people,, as of 01.01.2017, 2,243 people received ART in the institutions of the SPPS of Ukraine at the expense of the GF (Table 26 of the Annex).

Children (aged 0 - 17 inclusive) received ART at the expense of the state budget. At the end of 2016 their number was 2 848 people, which was 3,81% from the total number of people receiving ART.

Over 2016 the number of persons receiving ART in healthcare facilities of the Ministry of Health of Ukraine and the Academy of Medical Sciences of Ukraine grew by 13 779 persons (by 24,4%).

Qualitatively this figure ranged from 42 people (an increase by 10%) in Chernivtsi oblast to 2 239 people (an increase by 22.5%) in Dnipropetrovsk oblast and 2,121 (26.8%) in Odesa oblast. In percentage terms, the largest increase was observed in Kyiv oblast - 47.5% (32 people) (**Table 27** in the Appendix).

Among the people receiving ART, adults (aged 18 and older) accounted for 96.2% (71,932), of which 37,961 were men (52.8%), 33,971 - women (47.2%). In the general need for ART, according to official reporting, the proportion of men was 53.7% (44 099 persons), of women - 46.3% (37 989), which indicates that men and women have equal access to ART (**Table 28** of the Appendix).

Among adults aged 18 and older, 94.3% of patients received 1-st line ART regimens, 2-nd line – 5.2%, and 3-rd line – 0.43% of patients. Among children under 18, 1-st line ART schemes received 85.9% of patients, 2nd line – 13.5%, and 3-rd line – 0.56% of patients.

The evaluation of treatment efficiency was done by cohort analysis at 6, 12, 24, 36, etc. months from the beginning of treatment (using the form No. 57). Cohort is a group of HIV-infected and AIDS patients who started ART during the same month (for example March 2006, July 2013, etc.).

Continuation of ART during 12 months from the start of treatment for the people who started therapy during 2015 (cohort 2015) amounted to 85.92%. This figure was less than 75% in Kirovohrad and Chernivtsi oblast. Of all people who started ART during the year 2015, in 12 months after the start of therapy, 6.5% died, 7.6% dropped out of ART for a variety of reasons (**Table 29** of the Appendix).

Continuation of ART during the 24 months from the start of treatment for those who started therapy during 2014 (cohort 2014) was 78.6%.

Continuation of ART during 60 months from the start of treatment for those who started therapy during 2011 (cohort of 2011) was 72%.

The highest ART dropout rate was observed during the first 12 months after the start of treatment (15.1% among those who started ART during the period from 08.2004 to 12.2015). The main reasons for the dropout were the late start of ART and low adherence to treatment. Subsequently, the growth of this figure was significantly slowed down. After 10 years of treatment, 63.7% of people who started ART in 2004-2006 remain alive and continue receiving ART.

According to the results of the cohort analysis generalized data from August 2004 to December 2015, after 12 months of treatment, 98.4% of the people continued to receiving 1-st line ART regimens; among those people in the cohort who continued receiving ART after 12 months, the percentage of people receiving 2-nd ART regimens was 1.5%, the rescue regimens – 0.07%.

As of 01.01.2017, there were 3730 HIV-infected prisoners and persons taken into custody (6,13% of the total number of penitentiary population) in the institutions of the SPPS of Ukraine, of whom 2243 were receiving ART at the expense of GF (60%). For the purpose of clinical and diagnostic monitoring of the disease and the implementation of ART in health facilities in 2016, surveys were carried out to determine the level of VL in 2 806 patients receiving ART and 1 826 people among prisoners who were not receive ART.

Treatment of HIV/TB, HIV/HCV co-infections, opportunistic infections, associated conditions and other diseases

Co-infection HIV/TB

During 2016, 5,832 people with HIV-positive status started treatment for TB, of which 4,247 received ART. The course of prophylactic treatment of TB using isoniazid was started in 2016 by 21 757 people, of which 15,151 received ART.

Co-infection HIV Viral Hepatitis C

According to WHO estimates, HCV is a public health challenge: in the world, 2 to 3 million people get annually infected with the hepatitis C virus and about 130-170 million people have chronic HCV infection. According to international data, in Ukraine 3% of the population are infected with HCV, which is approximately 1 170 000 people.

According to the official data of statistical reporting, (Form 2 – "Report on Individual Infections and Parasitic Diseases" (annual), approved by the order of the Ministry of Health of Ukraine dated 02.06.2009 № 378), over the recent 5 years there has been a tendency of increasing incidence of viral hepatitis. Among the total number of viral hepatitis, the largest share is that of chronic viral hepatitis – 58.8%.

The level of the incidence of acute viral hepatitis (A, B, C) and chronic viral hepatitis (B and C) by the end of 2016 is 29.6 per 100 thousand people.

The number of HIV-infected people having active hepatitis C who required treatment at the end of 2016 was 5631 people, the number of patients receiving treatment for HCV during the year – 873 people. The total number of HIV-infected people who are known to be infected with hepatitis C virus at the end of 2016 amounted to 30,826 people, including 94 children aged 0-18 years.

SI "CPH of the MoH of Ukraine" in partnership with the International Charitable Foundation "Alliance of Public Health" as a part of implementation of the project "Increasing access to effective treatment of hepatitis C through community-based treatment models for vulnerable groups under conditions of limited resources of Ukraine" from June 2015 started the treatment of patients with HIV/HCV co-infection with sofosbuvir in a combination with peg-interferon and ribavirin. 19 healthcare facilities and 13 NGOs are involved in the implementation of the project in 17 oblasts of Ukraine.

As of 01.01.2017, the full course of therapy was completed by 1 152 patients (95% of those involved in the treatment) with HIV/HCV co-infection and HCV mono-infection, and 35 (3%) still continue their treatment. The efficacy of treatment in the patients who

completed the therapy as a part of this program and underwent a control test for VL was 94% (vs. 50% when peg-interferon and ribavirin were used for treatment), and the number of adverse effects that often result in interruption of treatment is significantly lower.

Treatment of opportunistic infections

According to City Regional AIDS Prevention and Control Centre and NDSL "Okhmadyt" during 2016 HIV-infected patients received 45 327 prevention courses and 37 048 OI treatment courses, 60.54% of which were OI treatment and prevention courses at the expense of the GF; 15.08% at the expense of local budgets, 27% at the expense of the patient's own money, 4.72% at the expense of AHF (AIDS Healthcare Foundation) and 1.78% at the expense of other charitable organizations.

Among all cases of OI which were treated during 2016, 42.98% were the cases of oropharyngeal candidosis; 33.51% - bacterial infections (including 13.50% - bacterial pneumonia); 5.09% - local forms of infection caused by VPG 1 and VPG 2; 4.05% - pneumocystic pneumonia; 3.94% - toxoplasmosis; 2.81% - systemic candidosis. OI prevention was performed in 64.02% of patients with pneumocystic pneumonia; 14.5% - with toxoplasmosis; 9.97% - oropharyngeal candidosis; 4.47% - with non-tuberculo-mycobacterial infection.

During 2016, HIV-infected patients received 2,618 prophylactic and 18,008 treatment courses for other associated conditions and diseases, of which 61.89% were at the expense of the patient's own money, 29.25% at the expense of local budgets, 0,98% - at the expense of the AHF, 2.78% - at the expense of the GF and 4.36% - at the expense of other charitable organizations.

Among all cases of treatment of other associated conditions and diseases in 2016, 43.37% were liver damage; 15.48% - anemia; 13,12% - disorders of the gastrointestinal tract and 9.86% allergic manifestations.

Prevention of adverse reactions was performed in 52,25% cases for patients with liver damage; 15,43% - with disorders of the gastrointestinal tract; 11.46% - with hepatitis C.

Hospice care in the departments, city and RC AIDS centers and other regional healthcare facilities in 2016 was provided to 2 513 HIV-infected people, 1 152 of them were treated in other healthcare facilities and 746 received hospice care at home. The support of 884 people was carried out by NGOs that provide hospice care to HIV-infected patients. Compared to the previous year, the total number of HIV-infected people who received hospital care in departments, city and regional AIDS centers and other healthcare facilities in regions increased by 392 persons in general and by 219 persons who were supported by NGOs.

SECTION 10.

IMPLEMENTATION PHASE OF OPIOID SUBSTITUTION THERAPY

As of 01.01.2017, the highest rates of prevalence of mental and behavioral disorders due to the use of opioids is registered in Kyiv (208.1 per 100 thousand people), Mykolayiv (205.8.), Odesa (182.6), Kirovohrad (162.9), Zaporizhya (160), Dnipropetrovsk (143.4), Chernihiv (130, 1), Kherson (129.3), Volyn (127.4), Poltava (122.6), Cherkasy (122.4) and Khmelnytsky (111.3) oblast. The above oblasts are a priority in terms of extension of OST as the most efficient method of treatment of opioid dependence and a tool for their inclusion in the MS system, followed by re-socialization and reintegration. Despite the fact that in some oblasts the prevalence of opioid dependence is relatively small and is, for example, 11.3 for Zakarpattia, 38.5 for Lviv and 42.5 for Ternopil oblast, the implementation of OST as a key service in the HIV transmission prevention package among PWID is equally important in these regions.

Total as of 01.01.2017 as a result of the use of opioids 42,247 people are registered with the dispensary register for different diseases which is 1034 more than in 2015.

In general, for 2016, for the first time, over 5480 people were enrolled under medical supervision due to the use of psychoactive drugs, which is 50.2% more than in 2015. At the same time, the number of newly registered opioid users decreased from 2,279 to 2,144, and amounted to 39.1% of the total number (62% in 2015). These data may indicate a rapid increase in the use of new, non-opioid psychoactive drugs and the relative stability of the opioid drug scene in Ukraine.

The said group of opioid users identified for the first time is a priority group for their inclusion into drug treatment programs using OST medication, prevention programs, diagnosis and treatment of associated diseases. As of 01.01.2017, OST services based on 174 sites were received by 9,214 people, of which 7,987 patients received methadone hydrochloride (in pills), 260 - methadone hydrochloride (oral solution), 967 patients - buprenorphine hydrochloride (sublingual pills).

The access to OST significantly differs in various regions and is generally unsatisfactory. For instance, the percentage of people with opioid addiction covered by OST services compared to people under MS in Ukraine, on the average, is 21.8% and differs considerably depending on the region; from 45.2% in Sumy and up to 8.3% in Odessa oblast (without data from Donetsk and Luhansk oblast).

The best figures of coverage with OST services of people being under MS as a result of opioid use were achieved in the following regions: Sumy (45.2%), Vinnytsya (44.1%), Zhytomyr (40%), Poltava (36.3%) . The lowest coverage is demonstrated by Odessa (8.3%), Zaporizhya (11.5%), Cherkasy (12.7%) and Volyn (13.1%) oblast. These oblasts require special attention in terms of expanding the program in order to get closer to the recommended coverage by OST services of people requiring treatment (Table 11).

Table 11. Number of OST patients in terms of regions as of 01.01.2017

Regions p. №	Oblast	OST pharmaceuticals	No. of patients	No. of patients with HIV	Number of patients with TB	Number of patients with hepatitis B	Number of patients with hepatitis C	Number of patients receiving ART therapy
1	Vinnytsya oblast	Buprenorphine	62	25	1	4	55	25
		Methadone (pills)	312	86	4	16	199	68
		Total	374	111	5	20	254	93
2	Volyn oblast	Buprenorphine	24	6	3	2	11	5
		Methadone (pills)	149	58	30	15	85	28
		Total	173	64	33	17	96	33
3	Dnipropetrovsk oblast	Buprenorphine	65	37	7	13	24	22
		Methadone (oral solution)						
		Methadone (pills)	1414	837	238	219	860	597
		Total	1479	874	245	232	884	619

Regions p. №	Oblast	OST pharmaceuticals	No. of patients	No. of patients with HIV	Number of patients with TB	Number of patients with hepatitis B	Number of patients with hepatitis C	Number of patients receiving ART therapy
4	Donetsk oblast	Buprenorphine	38	12	2	5	13	8
		Methadone (pills)	289	158	28	68	113	92
		Total	327	170	30	73	126	100
5	Zhytomyr oblast	Buprenorphine	49	19	12	20	42	16
		Methadone (pills)	317	114	39	79	201	72
		Total	366	133	51	99	243	88
6	Zakarpattia oblast	Buprenorphine	11	1		1	11	1
		Methadone (pills)	25	2		3	24	2
		Total	36	3		4	35	3
7	Zaporizhya oblast	Buprenorphine	46	25	4	7	37	22
		Methadone (pills)	277	94	58	58	194	78
		Total	323	119	62	65	231	100
8	Ivano-Franskivsk oblast	Buprenorphine	44	18	4	18	21	17
		Methadone (pills)	243	94	25	98	129	73
		Total	287	112	29	116	150	90
9	Kyiv city	Buprenorphine	217	98	23	23	129	80
		Methadone (oral solution)	260	124	32	39	202	97
		Methadone (pills)	513	171	78	84	322	113
		Total	990	393	133	146	653	290

Regions p. №	Oblast	OST pharmaceuticals	No. of patients	No. of patients with HIV	Number of patients with TB	Number of patients with hepatitis B	Number of patients with hepatitis C	Number of patients receiving ART therapy
10	Kyiv oblast	Buprenorphine	15	8	3	1	5	7
		Methadone (pills)	157	75	30	42	105	51
		Total	172	83	33	43	110	58
11	Kirovograd oblast	Buprenorphine	24	7		2	18	4
		Methadone (pills)	292	95	35	37	131	41
		Total	316	102	35	39	149	45
12	Luhansk oblast	Buprenorphine	15	6		1	7	5
		Methadone (pills)	263	97	23	23	157	71
		Total	278	103	23	24	164	76
13	Lviv oblast	Buprenorphine	25	5	1		8	3
		Methadone (pills)	247	119	57	40	106	61
		Total	272	124	58	40	114	64
14	Mykolayiv oblast	Buprenorphine	60	36	17	26	26	29
		Methadone (pills)	698	313	146	165	311	231
		Total	758	349	163	191	337	260
15	Odesa oblast	Buprenorphine	67	43	67	12	52	41
		Methadone (pills)	295	158	156	68	212	146
		Total	362	201	223	80	264	187
16	Poltava oblast	Buprenorphine	37	15	11		23	13
		Methadone (pills)	600	169	46	29	305	129
		Total	637	184	57	29	328	142

Regions p. №	Oblast	OST pharmaceuticals	No. of patients	No. of patients with HIV	Number of patients with TB	Number of patients with hepatitis B	Number of patients with hepatitis C	Number of patients receiving ART therapy
17	Rivne oblast	Buprenorphine	15	6			6	5
		Methadone (pills)	150	64	12	14	82	36
		Total	165	70	12	14	88	41
18	Sumy oblast	Buprenorphine	40	17	6	6	31	11
		Methadone (pills)	370	79	49	37	237	37
		Total	410	96	55	43	268	48
19	Ternopil oblast	Buprenorphine	19	3	4	1	11	3
		Methadone (pills)	96	25	10	3	76	16
		Total	115	28	14	4	87	19
20	Kharkiv oblast	Buprenorphine	8	2			5	2
		Methadone (pills)	319	90	21	29	161	64
		Total	327	92	21	29	166	66
21	Kherson oblast	Buprenorphine	31	10	5	22	23	9
		Methadone (pills)	219	80	43	97	96	58
		Total	250	90	48	119	119	67
22	Khmelnyskyi oblast	Buprenorphine						
		Methadone (pills)	313	96	48	58	102	56
		Total	313	96	96	58	102	56
23	Cherkasy oblast	Buprenorphine	21	10	3	15		8
		Methadone (pills)	172	95	38	24	124	60
		Total	193	105	41	24	139	68

Regions p. №	Oblast	OST pharmaceuticals	No. of patients	No. of patients with HIV	Number of patients with TB	Number of patients with hepatitis B	Number of patients with hepatitis C	Number of patients receiving ART therapy
24	Chernivtsi oblast	Buprenorphine	20	8	4	6	18	7
		Methadone (pills)	61	12	9	2	56	7
		Total	81	20	13	8	74	14
25	Chernihiv oblast	Buprenorphine	14	10		1	13	10
		Methadone (pills)	196	124	23	11	89	76
		Total	210	134	23	12	102	86
Total		Buprenorphine	967	427	177	171	604	353
		Methadone (oral solution)	260	124	32	39	202	97
		Methadone (pills)	7987	3305	1246	1319	4477	2263
		Total	9214	3856	1455	1529	5283	2713

The analysis of the socio-demographic characteristics of OST patients has shown that 81.3% of the participants of the program are men, 18.7% are women, the average age is 38, the average length of use of narcotic substances is 16 years. Therefore, the majority of the program patients are middle-aged people who have had a long history of drug use and according to anamnesis data, numerous unsuccessful treatment attempts. The problem of gender inequality in access to treatment was observed in 2016 and it requires further efforts.

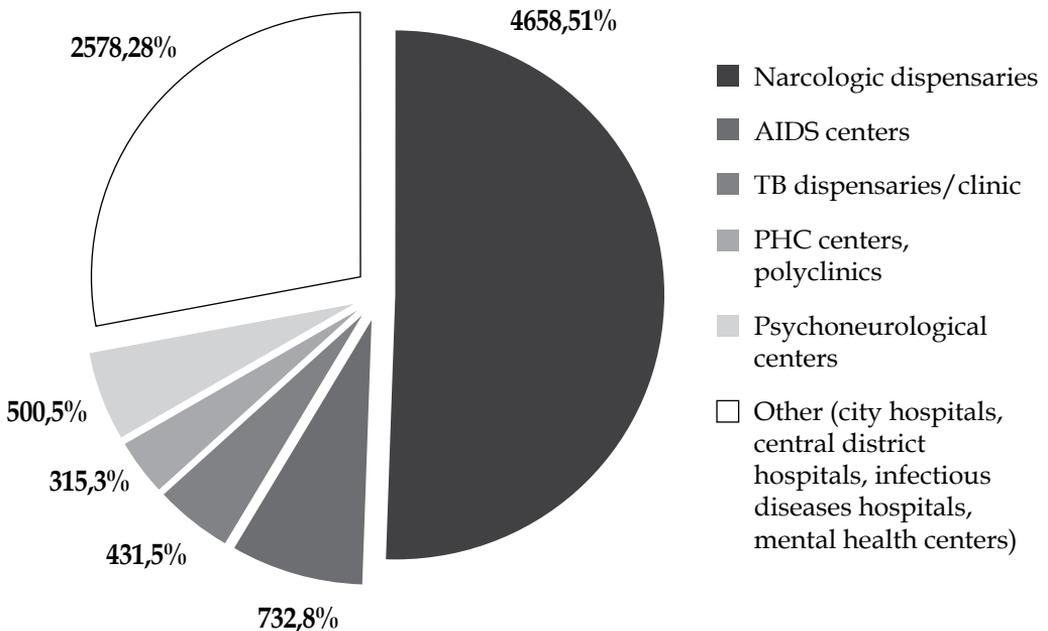
The proportion of HIV-positive patients with OST in the country is 41.8% of the total number, namely 3856 people. Of these, only 70.4% people receive ART (2 713 patients). It should also be noted that the average ART coverage of HIV-positive patients receiving OST at AIDS centers is higher than the country-wide total, and is 84.3% (428 out of 508), which indicates the efficiency of providing integrated services to patients with opioid addiction and the need to extend the practice of opening OST sites based on AIDS ser-

vices. The most common disease among patients with OST is still HCV, which affects 57.3% of the program participants (5283 persons). TB patients are 1,455, representing 15.8% of the total number of patients.

As of the beginning of 2017, OST services are provided on the basis of 9 AIDS centers, namely: Vinnitsa, Zaporizhya, Ivano-Frankivsk, Lviv, Rivne, Ternopil, Kharkiv Oblast AIDS Centers, Kyiv and Odesa City AIDS Prevention and Control Centers.

In general 732 patients receive OST on the basis of AIDS centers, representing 7.9% of the total number of patients with OST, and is a comparatively lower result in comparison with 2015 (8.7%). More than half of patients receive OST on the basis of specialized narcological institutions, in most cases the potential of these institutions for the acceptance of new patients and program extensions is exhausted (**Figure 19**).

Figure 19. Distribution of patients receiving OST services between the healthcare facilities of Ukraine, as of 01.01.2017 (number of patients, share)



Further scale-up of the program may take place through the involvement of primary health care providing facilities and family doctors in the provision of OST services, which at the same time would help solve the problem of uneven geographical availability of services for patients.

During the reporting year, active attention was paid to expanding the practice of introducing prescription forms for dispensing OST medication, establishing home care and issuing OST drugs directly at health care facilities for self-admission in outpatient departments, for the efficient monitoring of which the relevant changes were made to the reporting form "Information on persons having opioid addiction receiving substitution maintenance therapy."

As of 01.01.2017, 926 patients receive prescription medication (including 328 at their own expense), 973 patients receive the medication directly at healthcare facilities for self-admission in outpatient departments and 248 – at home. Thus, more than 23% of patients receive the medications on their own, with the provision of appropriate measures to control the targeted use of the drug. The number of people receiving the medication at the expense of local budgets has increased up to 106 patients.

Medical institutions involved in the implementation of the OST program regularly obtain methodological and organizational technical support aimed at improving the quality of services provision, ensuring their sustainability, effective use of drugs, the introduction of new financing models, and the provision of services.

The Order of the Ministry of Health of Ukraine dated September 29, 2016 No. 1010 "On Approval of the Nomenclature of Pharmaceuticals and Medical Products Procured for the Implementation of State Target Programs and Comprehensive Program Measures at the Expense of the State Budget in 2016" approved the nomenclature of OST medications, combining the international and Ukrainian practice of using pharmaceuticals in the treatment of opioid addiction and incorporating all medication forms that are registered and appropriately used to provide OST in Ukraine.

In order to prepare the legal regulation framework of state procurement of OST drugs, a method for calculating the requirements for OST drugs was approved by the Order of the Ministry of Health of Ukraine of September 29, 2016, No. 1011 "On Approval of the Methodology for Calculating the Need for Substitution Maintenance Therapy for the Treatment of Patients with Mental and Behavioral Disorders due to the use of opioids", registered with the Ministry of Justice of Ukraine on October 12, 2016, under No. 1355/29485, which was used already at the first Ukrainian practice of collecting regional needs for procurement of OST drugs at the expense of the state budget for 2016.

The issue of the Order of the Ministry of Health of Ukraine and the Ministry of Finance of Ukraine dated October 21, 2016, No. 1128/888 "On amending the budget program certificate for 2016" finally approved the allocation of 13 million UAH for the purchase of OST drugs to cover the needs of patients in the framework of the implementation of international obligations to transfer to the funding of the program at the state budget expense. On December 12, 2016, an international agency responsible for implementing the relevant procurement was designated – it was the British company CrownAgents.

SECTION 11.

PREVENTION OF MOTHER-TO-CHILD TRANSMISSION OF HIV IN UKRAINE

The mother-to-child HIV transmission is a leading natural way of infecting young children. Without taking preventive measures, the risk of vertical transmission of HIV varies from 10 to 40%, of which 15-30% are transplacental transmission of the virus, 50-75% of infection cases occur during childbirth and 10-20% - in breastfeeding.

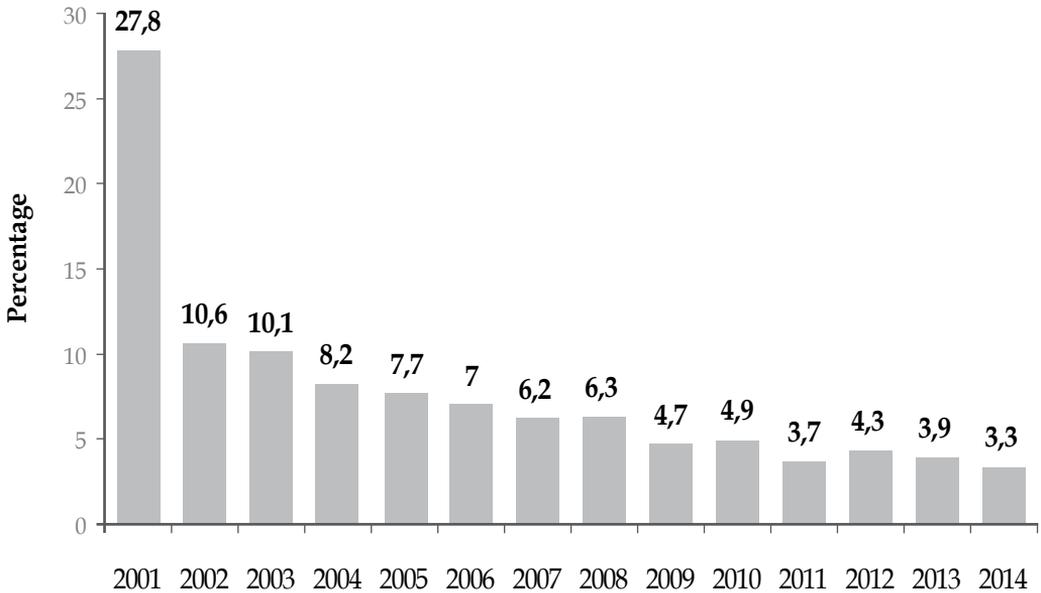
The region of Central and Eastern Europe and the Commonwealth of Independent States, to which Ukraine belongs, is the only region in the world where, despite increased coverage of mother-to-child HIV transmission prevention measures (PMTCT), the number of new cases of HIV infection in children is not significantly reducing.

The PMTCT program in Ukraine has become one of the most successful in counteracting the HIV epidemic. However, despite some success following the decrease in the proportion of PWID among the first-time identified HIV-positive pregnant women (from 15.2% in 2005 to 4.6% in 2015), the diagnosis of HIV infection is confirmed annually in almost 100 children.

In 2016, the incidence of mother-to-child transmission of HIV (IMTCT) was calculated among the cohort of children born to HIV-infected women in 2014 - 3.32%, without taking into account the data from the Autonomous Republic of Crimea and a part of the ATO territory.

In comparison with the basic figure of 2001, the IMTCT in 2014 decreased by 8.4 times or by 88% (**Fig. 20**).

Figure 20. Rate of mother-to-child transmission of HIV in Ukraine, based on early and serological diagnostics



The cohort of children born to HIV-infected women in 2014 was 3280 children. The diagnosis of HIV was determined for 98 children, which was confirmed for:

- 59 children (61%) – based on two positive results of research on HIV genetic material by PLR DNA;
- 16 children (16%) – by determining the viral load of HIV in blood by PLR DNA;
- 7 children (7%) – using the methods of early and serological diagnostics at the age of 18 months and older;
- 16 children (16%) – using only serological diagnostic methods at the age of 18 months and older.

In 4 regions of Ukraine, 51% of children from the total number of HIV-infected children were born in 2014 (98 children) in Dnipropetrovsk (16 children), Odessa (15), Kyiv (9) oblast and Kyiv city (11).

Medical surveillance over 2 852 children was stopped due to the absence of HIV infection, of which 176 children (6%) had not been diagnosed early, and their HIV-negative status was established only during serological studies at the age of 18 months and older.

Of the 250 children diagnosed with HIV infection at the confirmation stage, 92 children (37%) were not examined because of the parents' refusal to examine their child; for 94 children (38%) residence data was not provided and 64 children (25%) needed further surveillance to determine the ultimate HIV status.

In the 6 regions of Ukraine, the IMTCT in 2014 has been 0% (Volyn, Zakarpattya, Rivne, Sumy, Ternopil, Khmelnytskyi oblast); in Zhytomyr oblast, this figure remains at a low level of 1.06%. The highest figures for IMTCT in 2014 were recorded in Kyiv (5.96%) and Kirovohrad (6.25%) oblast (**Table 22** of the Annex).

Almost in all regions of Ukraine a negative tendency is observed of increasing cases of late detection of HIV-infected women who gave birth to children in 2014 (22.9% in Ukraine). The highest percentage of this figure has been registered in Odesa (39.0%), Volyn (37.1%), Donetsk (35.9%), Cherkasy (34.7%), Khmelnytskyi (30.0%) oblast.

IMTCT significantly differs according to the various combinations of prevention of mother-to-child transmission programs, which confirms the importance of timely preventive actions.

Under the condition of conducting a complete ARV prevention course for HIV-positive pregnant women and their children, as well as the exclusion of breastfeeding, IMTCT in 2014 in Ukraine is 1.1%. In case when HIV-positive pregnant women get ARP only in childbirth, IMTCT is 9.4%, in the absence of ARP it is 34.2%.

IMTCT among children whose mothers were active PWID exceeded the general IMTCT level in 2014 by more than 3 times – 7.7% vs. 3.3%, respectively.

Serologic examination of pregnant women for HIV antibodies is one of the important components of a mother-to-child HIV prevention program aimed at finding out a woman's HIV status and, in case of confirmation of the positive result – providing her with advice and medical care and preventive antiretroviral treatment for preventing infection of a child to be born with HIV.

In 2016, the prevalence of HIV among pregnant women, as compared to 2013, decreased by 18.4%, from 0.87% to 0.71% (without taking into account the data of the Autonomous Republic of Crimea and a part of the ATO territory). In the 7 regions of Ukraine, the level of HIV prevalence among pregnant women was equal to or exceeded 1.0%, which indicates the widespread distribution of the pathogen among the population of reproductive age and the possibility of generalizing the HIV epidemic in these territories – Donetsk (1.91%), Odesa (1.69, 55%), Mykolayiv (1.37%), Dnipropetrovsk (1.31%), Kirovohrad (1.08%), Luhansk (1.06%), Kherson (1.06%) oblast. In the 4 regions of the country, the prevalence of HIV among pregnant women in 2016 increased in comparison with 2015: Zakarpattya (from 0.09% to 0.11%), Luhansk (from 0.83% to 1.06%), Cherkasy (From 0.58% to 0.89%), Chernivtsi (from 0.15% to 0.25%) oblast (**Table 12**).

Table 12. Prevalence of HIV among pregnant women in Ukraine

Regions	2015*		2016*	
	Number of HIV-infected pregnant women	Prevalence, %	Number of HIV-infected pregnant women	Prevalence, %
Ukraine	3016	0,75	2814	0,71
Vinnitsa	94	0,52	70	0,45
Volyn	51	0,42	41	0,31
Dnipropetrovsk	510	1,48	436	1,31
Donetsk	268	1,96	292	1,91
Zhytomyr	86	0,65	87	0,65
Zakarpattia	15	0,09	18	0,11
Zaporizhyya	104	0,64	87	0,54
Ivano-Frankivsk	22	0,14	20	0,13
Kyiv	199	1,00	113	0,55
Kirovohrad	86	0,97	93	1,08
Luhansk	39	0,83	57	1,06
Lviv	69	0,24	64	0,23
Mykolayiv	153	1,37	156	1,37
Odessa	447	1,69	427	1,55
Poltava	73	0,54	68	0,51
Rivne	58	0,36	52	0,33
Sumy	46	0,47	40	0,44
Ternopil	19	0,18	13	0,13
Kharkiv	122	0,50	108	0,45
Kherson	114	1,09	107	1,06
Khmelnitskyi	51	0,38	42	0,33
Cherkasy	66	0,58	98	0,89
Chernivtsi	16	0,15	25	0,25
Chernihiv	84	0,95	83	0,90
Kyiv city	224	0,70	217	0,67

*without taking into account the data from the Autonomous Republic of Crimea and a part of the ATO territory

According to the results of the report № 63 "Prevention of mother-to-child transmission of HIV in 2016" for 2,710 HIV-positive women, pregnancy resulted in childbirth (2,962 in 2015, 3,573 in 2014), for 180 HIV-infected women – with abortion (218 in 2015, 284 in 2014).

There is a favorable trend that in Ukraine a gradual decrease in the number and percentage of pregnant women with the newly established HIV-positive status during pregnancy, childbirth or after delivery among the total number of HIV-positive pregnant women is observed – 1 814 (48.7%) in 2014, 1 453 (47.2%) in 2015, 1 257 (44.7%) in 2016.

Thus, more than half of HIV-positive pregnant women in 2016 were aware of their HIV-positive status before pregnancy. Of the women who learned about their HIV-positive status when applying to maternity health clinic, the diagnosis of HIV infection was established in the pregnancy period up to 12 weeks – in 24.4% of women, within 12 to 26 weeks – 49.0%, after 26 weeks – 18.2%, during and after childbirth – 8.4%.

So, in 2016 26.6% (22.4% in 2015, 18.1% in 2014) of women who were diagnosed with HIV for the first time in life learned about their HIV-positive status only in the III trimester of pregnancy or did not know about it at all during pregnancy, and respectively, did not get a number of medical services for the prevention of vertical transmission of HIV and had a high risk of transmitting HIV infection to their child. The highest level of this figure found in Vinnitsa (60.9%), Dnipropetrovsk (38.4%), Kyiv (36.9%), Donetsk (36.5%), Ivano-Frankivsk (36.4%), Odessa (33.5%) oblast.

The HIV positive pregnant women being active PWID during pregnancy were found in 5 regions – Dnipropetrovsk, Donetsk, Zaporizhya, Lviv oblast and Kyiv city (12 women), of which 8 pregnant women received ARP to reduce the risk of mother-to-child transmission.

During 2016, 95.4% of HIV-positive pregnant women (95.0% in 2015, 95.6% in 2014) were covered with ARP/ART. The lowest level of this figure was found in the Chernihiv oblast (90.1%), in Kyiv city (91.2%), in Kyiv oblast (92.2%), in Kirovograd (92.2%), in Lviv (93.2%), and in Dnipropetrovsk (93.7%) oblast.

Following the approval of the Unified Clinical Protocol of Primary, Secondary (Specialized) and Tertiary (Highly Specialized) Medical Care "Prevention of Mother-to-Child HIV Transmission" (Order of the MOH of Ukraine No. 449 dated 16.05.2016, as amended in accordance with Order of the MOH of Ukraine No. 655 dated 02.07.2016), for all pregnant women, regardless of the number of CD4 or clinical stage, a three-component ART is assigned that lasts for a lifetime. The proportion of HIV-positive pregnant women who received ART increased from 32% in 2012 to 65% in 2016, 74% are continuing ART after childbirth (+ 40% compared to 2015).

According to the existing strategy of preventing the vertical transmission of HIV, the elective caesarean section is one of the most efficient PMTCT methods. In 2016, 35.3% of

HIV-infected women gave birth to children using a planned caesarean section (32.9% in 2015, 31% in 2014).

During 2016, ARP covered 97.2% of children born to HIV-infected women. Almost all children were artificially fed (99.2%).

The coverage of children born from HIV-infected women with early PLR DNA diagnostics has remained at an insufficient level over the recent 3 years; in 2016 it was 87%. The lowest levels of this figure were recorded in Rivne (55.6%), Volyn (56.7%), Kyiv (70.9%), Kharkiv (75.0%), and Kirovograd (80.2%) oblasts.

Among HIV-infected children under the age of 18 who are under medical surveillance in healthcare establishments at the end of 2016, 66.4% of children live with their families, together with their mother and/or father, 19.5% - with their families getting the care of relatives, 6.1% of children are adopted, 8% - in the orphanage (Table 23 of the Annex)

Official statistics shows that problems that make elimination of mother-to-child transmission of HIV impossible are still relevant in Ukraine. Taking into account the current trends in IMTCT indicator in Ukraine and the risks of vertical HIV transmission, ensuring universal access to PMTCT for all HIV-positive pregnant women, especially women from particularly vulnerable and socially vulnerable population groups can be an important step for the elimination of mother-to-child transmission of HIV.

The achievement of the target "mother-to-child transmission of HIV in Ukraine" of 1% by 2018 in course of implementation of the National Targeted Social Program on HIV /AIDS Response for 2014-2018 is an immediate goal of Ukraine in PMTCT. However, Ukraine, as well as other countries in the WHO European Region, supports long-term global goals for eliminating new HIV infection cases among children by 2030 and the WHO's initiative to validate the elimination of mother-to-child transmission of HIV.

SECTION 12.

ANALYSIS OF THE ACTIVITIES OF THE LABORATORY SERVICE OF REGIONAL AIDS CENTERS

Based on the data of passport questionnaires provided by the chief doctors of the regional AIDS Centers, in 2016 in Ukraine there were 113 laboratories which provided examination on detection of HIV serological markers, among them ,:

- 26 laboratories of the oblast and city AIDS centers;
- 34 laboratories of the oblast and city blood centers, Oblast blood transfusion station;
- 6 laboratories of the laboratory centers of the State Sanitary and Epidemiological Service of Ukraine;
- 3 laboratories of the dermatovenereal dispensaries, hospitals;
- 17 laboratories of the government department-owned facilities;
- 5 laboratories of the Institutes of the National Academy of Medical Sciences of Ukraine;
- 21 oblast, raion, private laboratory "INVITRO", Dnipropetrovsk.

In 2016 the clinical and diagnostic laboratory (CDL) of the community-owned facility "I.I. Mechnykov Dnipropetrovsk Oblast Clinical Hospital" of Dnipropetrovsk oblast council joined this list.

From among all 113 laboratories 99 are assessed to carry out measurements to determine HIV serological markers.

The assessment certificate of 14 laboratories expired in 2016:

- CDL SE "Vinnytsya Oblast Laboratory center of the State Sanitary and Epidemiological Service of Ukraine";

- CDL of Dnipropetrovsk oblast AIDS Center;
- Virological laboratory – HIV diagnostics laboratory of the community- owned facility 'Nikopol city hospital No. 4" of Dnipropetrovsk oblast council;
- HIV diagnostics laboratory of the Dnipropetrovsk railway transportation industry clinical hospital branch o the Healthcare Center of Ukrzaliznytsya PJSC;
- Department of laboratory diagnostics and prevention of AIDS and other bloodborne diseases (hepatitis B, C and syphilis) of the community-owned facility "Zhytomyr oblast blood center";
- CDL of Novohrad-Volynskyy IRTMA;
- Department of laboratory diagnostics and prevention of AIDS and other bloodborne diseases (hepatitis B, C and syphilis) of Zakarpattia oblast blood transfusion station;
- HIV diagnostics laboratory of Kirovohrad oblast blood transfusion station;
- Department of laboratory diagnostics and prevention of AIDS and other bloodborne diseases (hepatitis B, C and syphilis) of Severodonetsk blood transfusion station;
- CDL of the LLC "Sumy oblast center of the blood service";
- CDL of Kharkiv oblast AIDS Center;
- Department of laboratory diagnostics and prevention of AIDS and other bloodborne diseases (hepatitis B, C and syphilis) of the community-owned HCF "Kharkiv oblast center of the blood service";
- HIV diagnostics laboratory of the community-owned healthcare facility "Balakliya Central District Hospital;
- Department of laboratory diagnostics and prevention of AIDS and other bloodborne diseases (hepatitis B, C and syphilis) of Chernihiv oblast blood service.

In 2016 the following external quality assessment programs of the laboratory services related to HIV were extended:

- joint stage of the fifth round of the HIV Antibodies Program (detection of HIV serological markers), which engaged 110 laboratories. Among them 98 laboratories had satisfactory results (89%);
- With the support of the American Microbiological Society, CDC, USA the Reference Laboratory of the SI "Center for Public Health of the MoH of Ukraine" in 2016 carried out the program for external evaluation of the quality of CD4 count studies by current laser cytometry and with the use of portable analyzer Alere PIMA. The program engaged 42 HCFs, among them 29 laboratories of the oblast and city AIDS Centers, 9 confidence cabinets and

4 facilities of the Penitentiary Service of Ukraine. In total 84% per cent of participants received correct results while using current cytometers and 82.8% participants – while carrying out research using AlerePIMA portable device.

Equipment and technical capacities of the laboratories

The list of laboratory equipment to be available in the AIDS Centers laboratories is approved by the Order of the MoH of Ukraine dated 19.07.2010 No. 590 "On approval of the recommended medical equipment charts of the specialized HCFs and structural departments of HCFs providing clinical and diagnostics studies and prevention and care to persons with HIV/AIDS".

It should be noted that there were no funding allocations for the procurement of laboratory equipment for the regional AIDS centers laboratories for the implementation of National AIDS Programs (for 2009-2013 and 2014-2018), which resulted in technical exhaustion of the equipment, impossibility to timely renew the equipment capacities and procure new types of devices to expand the range of laboratory studies to ensure comprehensive access of people living with HIV and AIDS to the high quality medical care. In 2014 the equipment was procured within the framework of the International Technical Assistance Project No. 2692-02 "Support of the M&E system of the Ministry of Health of Ukraine" for 21 regional AIDS Centers laboratories – biochemical analyzers (13 units), EIA (enzyme immunoassay) analysis equipment sets (9 units), current laser cytometers (3 units) were procured.

In 2016 the laboratory equipment was procured for Donetsk oblast AIDS Center at the expense of the local budget funds – BeckmanCoulter current cytometer and the set of equipment for real-time PLR analysis by Abbott. The laboratory of Cherkasy oblast AIDS Center received for gratis use the Abbott equipment set for HIV-1 VL detection and became an interregional laboratory assigned to service patients of Kirovohrad oblast (order of the MoH of Ukraine dated 17.08.2016 No. 851).

As of 01.01.2017, there is an urgent need to renew obsolete measurement and auxiliary equipment units for HIV diagnostics in the following HCFs:

- **Vinnytsya oblast** – oblast AIDS Center (EIA set is of 2006 year of manufacture, oblast blood transfusion station (reader 1996, 2004 year of manufacture.), oblast laboratory center of sanitary and epidemiological station (thermoshaker is missing), Central region clinical center of the military medicine (EIA set is of 2003 year of manufacture);
- **Volyn oblast** – Volodymyr-Volynskyy blood transfusion station (spectrophotometer is of 2002 year of manufacture, dispensers of 2000, 2002 year of manufacture.);

- **Dnipropetrovsk oblast** – Kryvyi Rih dermatovenerological diseases clinic (EIA set is of 2004 year of manufacture), Dnipropetrovsk clinical hospital of the railway industry (EIA set is of 1991,1998 year of manufacture), SE "Specialized multiprofile clinic No. of the MoH of Ukraine" (EIA set is of 2002 year of manufacture, thermoshaker is missing), Novomoskovsk central district hospital (reader – 2002 year of manufacture, thermoshaker is missing), Nikopol city hospital No. 4 (thermoshaker is missing), Kryvyi Rih blood transfusion station (EIA equipment s of 2005 year of manufacture), community-owned facility "I.I. Mechnykov Dnipropetrovsk oblast clinical hospital" of Dnipropetrovsk oblast council (EIA set is of 2003 year of manufacture);
- **Zhytomyr oblast** – Novohrad-Volynskyy TMA (EIA equipment is of 1997 year of manufacture);
- **Zakarpattia oblast** – Department of laboratory diagnostics and prevention of AIDS and other bloodborne diseases (hepatitis B, C and syphilis), oblast blood transfusion station (reader-spectrophotometer is of 2004, 2007 year of manufacture, thermoshakers 1997-1999 year of manufacture);
- **Zaporizhyya oblast** – Melitopol blood transfusion station (reader is of 2005 year of manufacture), Berdyansk blood transfusion station (thermoshaker is of 1995 year of manufacture), Tokmak blood transfusion station (thermoshaker is missing);
- **Ivano-Frankivsk oblast** – Kolomyia central district hospital (reader-spectrophotometer is of 2001 year of manufacture, thermoshaker and washer are missing);
- **Kyiv oblast** – State Establishment "Slavutych Medical and Sanitation Unit No.5", Slavutych city (EIA reader is of 2004 year of manufacture, washer and thermoshaker are missing);
- **Kirovohrad oblast** – oblast blood transfusion station (reader of 2005 year of manufacture);
- **Lviv oblast** – Western region clinical center of the military medicine (spectrophotometer 2005 year of manufacture), Lviv autonomous department of the SE "Laboratory Center of the Railway Industry of the State Sanitary and Epidemiological Service of Ukraine" (spectrophotometer of 1993 year of manufacture);
- **Odesa oblast** – Izmail inter-district laboratory (reader of 1997 year of manufacture, thermoshaker is missing), Liubashiv inter-district laboratory (EIA kit of 1995 year of manufacture), Sarata interdistrict laboratory (reader of 1996 year of manufacture), Bilhorod-Dnistrovskyy inter-district laboratory (thermoshaker is missing);
- **Poltava oblast** – HIV and viral hepatitis diagnostics department of Lubny oblast blood transfusion station (reader of 1998 year of manufacture), Lohvytsia Central District Hospital (washer and thermostat are missing), Komsomolsk city hospital (thermoshaker is missing);
- **Rivne oblast** – SE "State Medical and Sanitary Unit of the MoH of Ukraine No. 3" (reader of 1995 year of manufacture);

- **Sumy oblast** – oblast AIDS Center (EIA set is of 2006 year of manufacture);
- **Kharkiv oblast** – policlinic of the Healthcare Department of the Ministry of Interior of Ukraine (EIA set is of 1993 year of manufacture), Clinical hospital of the Road and Transportation Industry (EIA equipment set is of 2000 year of manufacture, thermoshaker is missing);
- **Chernivtsi oblast** – oblast center of the blood service (EIA set is of 2004 year of manufacture);
- **Chernihiv oblast** – oblast blood transfusion station (reader is of 2005 year of manufacture);
- **Kyiv** – Kyiv city clinical dermatovenerological hospital (EIA set is of 1999 year of manufacture, washer is missing), Local clinic of Southwestern (Pivdenno-Zakhidna) Railway Service (EIA set is of 2003 year of manufacture, thermoshaker is missing).

Thus, the situation with the laboratory equipment in comparison with 2015 deteriorated. There is the necessity to re-equip 37 laboratories (in 2015 – 33), which provide HIV screening in Ukraine, this is 32.7% of their total number (the 2015 indicator was 29.5%).

Importantly, this list includes 11 laboratories of the HCFs of the blood service (in 2015 there were 9 laboratories), which is a serious cause for concern, as for the blood-borne diseases diagnostics in blood donors the incomplete or obsolete equipment (having been in operation for more than 10 years) is used.

This situation is unacceptable considering that the safety of donor blood and its components is an important element of the national security, however, with the inadequate material and technical capacities of the blood service laboratories it is practically impossible to guarantee the quality and reliability of the received results.

Staff capacity

According to the passport questionnaires provided by the region the staff capacity analysis of oblast and city AIDS centers was carried out. In general, compared with 2015 the number of positions increased by 6.25 full-time equivalents (FTE). According to the staff lists, in the oblast and city AIDS centers laboratories the higher education specialists were employed occupying 137.75 FTEs (**table 13**).

As the presented data demonstrate, in 2016 there were 14.5 vacant FTEs; the vast majority (60.6%) of specialists with higher education are clinical laboratory diagnostics specialists. Comparison of the data on professional composition of the AIDS centers laboratories shows that there is a considerable disbalance between the staff specializations. Considering that the need for molecular and genetic research in 2017 will increase more than 3.5. times in connection with ART coverage expansion the training of laboratory specialists under these specializations should be the priority focus.

Table 13. Medical staff structure of HIV diagnostics laboratories

Specialization	Number of occupied FTEs	% of the total number
Physician-laboratory specialist – immunologist (biologist)	16.5	12.0
Physician-laboratory specialist –virologist (microbiologist, bacteriologist)	29.75	21.6
Physician-laboratory specialist (biologist) (clinical laboratory diagnostics)	83.5	60.6
Physician-laboratory specialist (biologist) (clinical biochemistry)	5	3.6
Biologist (without specialization)	3	2.2
Vacant positions	14.5	
Total	152.25	100

Data about the qualification of the specialists with higher education are presented in **Table 14**.

Table 14. Information about the qualification of specialists of AIDS centers laboratories with higher education

Specialization	Number of FTEs occupied by specialists possessing a qualification category			
	higher	first	second	no category
Clinical laboratory diagnostics	22,25	17,25	18,5	21,5
Laboratory immunology	10	2	3,5	1
Clinical biochemistry	1	0	2	2
Virusology	14,5	4,25	4,5	6

Thus in total 99.75 (75.6 %) of the specialists possess qualification categories. Another 33.5 (24.4%) specialists do not have either a category, or a specialization.

The staffing analysis of laboratories performing molecular genetic studies identified that 8 AIDS centers (Vinnytsya, Dnipropetrovsk, Poltava, Rivne Kharkiv, Kherson oblast AIDS centers, Kryvyi Rih and Mariupol city AIDS) operate in breach if the provisions of the Decree of the Ministry of Health of Ukraine dated 24.01.2008 No.26 "On Approval of the State Sanitary Norms and Rules "Organization of operation of the laboratories on examination of materials containing biological pathogenic agents of I-IV pathogenicity groups with molecular and genetic methods", in particular, the said facilities are not staffed with the specialists of the necessary specializations to carry out the above analysis. In comparison with 2015, the situation in 2016 regarding the staffing with specialists in virology, microbiology, bacteriology deteriorated. The number of AIDS centers with the shortage of qualified staff also increased.

Among the laboratory specialists with secondary special education (laboratory assistants and laboratory assistants – paramedics) 169.5 specialists (FTE) were employed in oblast and city AIDS centers laboratories. Among them 127 possess a qualification category (74.9%), 42.5 laboratory assistants (25.1%) had no category. In 2016 24.5 vacancies of healthcare staff with secondary special education remained vacant.

Laboratory studies

Screening and confirmatory examinations for HIV are provided in every oblast. In 2016 Kyiv and Khmelnytskyi oblast AIDS centers were included in the list of facilities carrying our confirmatory examination for HIV.

In addition to HIV diagnostics, to ensure laboratory management of HIV and monitor the ART efficiency the AIDS centers laboratories carried out other key research, as follows:

- *Diagnosics of opportunistic infections, hepatitis and STI,*
- *General clinical, hematological, biochemical research,*
- *Bacteriological research,*
- *Immunological research (CD4 count determination),*
- *Virologic research (determination of HIV-1 VL, pro-virus DNA of HIV-1).*

To carry out **immunological research (determining CD4 count)** in 2016 23 laboratories of HCFs were equipped with current cytometers, including AIDS centers laboratories.

To make the CD4 count service closer to the representatives of the risk groups, ensuring their early enrolment into care, expanding access to ART on the basis of health-

care services decentralization, in January 2015 HCFs and the Penitentiary and Probation Service of Ukraine facilities obtained 30 portable Alere PIMA analyzers procured with the GF support. Among them 18 devices were distributed between oblast and city AIDS centers and Reference Laboratory of the SE "Center for Public Health of the MoH of Ukraine", 8 - in other HCFs (specialized dispensaries, hospitals, confidence cabinets), 4 - to the Penitentiary and Probation Service of Ukraine.

During 2016 there were 133 952 CD4 count examinations. Among them the following types of patients were serviced at least once a year:

- 73 937 people with HIV, being 55.6% of the dispensary supervision group;
- 47 537 persons who received ART as of the moment of examination, which allowed to cover 63.5% of the need;
- 24 733 of persons who did not receive ART as of the moment of examination which is 42.5% of the need;
- 1 667 of pregnant women with HIV, which is 59.4% of the need (**Table 31** of the Annex).

The largest share of patients (47.1%) was screened only once during the year; 37.2% patients of the dispensary group were screened twice, and 7.6% of patients were screened three times.

According to the summarized information from the regional AIDS centers, 10 900 persons were examined for CD4 count at the moment of enrolment into medical supervision. Among them the results of the CD4 study are as follows:

- The majority of patients – 6 262, which is 57.4% of the total number of examined patients, had less than 350 cells/mcl;
- 2 330 persons (21.4%) had from 351 to 500 cells/mcl, and
- 2 308 patients (21,2%) had more than 500 cells/mcl (**Table 32** of the Annex).

The obtained data indicate late diagnostics of HIV in the majority of patients getting enrolled into medical supervision.

SE "Center for Public Health of the MoH of Ukraine" also analyzed the efficiency of using portable analyzers Alere PIMA in 2016. In total 18 969 persons were screened, among them 14 250 (77%) were under medical supervision as of the study moment and 4 446 (23%) were screened in connection with detection of HIV serological markers in them (as of the moment of screening they were not under medical supervision). In 2550 persons (57%) at the moment of screening CD4 count was less than 350 cells/mm, which indicates late detection of HIV. After obtaining the results 2 496 persons (56%) were en-

rolled under medical supervision; 1 075 of them (24% among the screened persons) were prescribed ARV treatment.

To carry out **virologic research (HIV-1 viral load detection)** in 2016 the necessary equipment was supplied to 17 laboratories of AIDS centers, including, since December 1, 2016, to the laboratory of Cherkasy oblast AIDS center.

Within 2016 98 561 patients were examined for HIV-1 VL. Among them the following types of patients were screened at least once:

- 69 118 of PLWH, which is 52% of the dispensary supervision group;
- 52 871 person receiving ART as of the screening moment, which was 70.7% of the need;
- 13 885 persons which did not receive ART as of the moment of screening which was 23.9% of the need;
- 2 362 of HIV-positive pregnant women which is 84.1% of the need (**Table 33** of the Annex).

The largest number of patients (70.1%) were examined only once during the year; 24% of the dispensary group patients were examined twice and 1.2 % of the patients were screened three times.

According to the summary information from the regional AIDS centers, virologic efficiency of the ARV drugs treatment in patients receiving ART for 6 months and more in 2016 was 90.7%. In total 49 497 patients were screened, among them only in 4 598 (9.3%) HIV-1 VL exceeded 1 000 copies in 1 ml of plasma (**table 34** of the Annex).

In order to ensure examination for **pro-viral DNA of HIV-1 for early diagnostics of HIV in children born to HIV-positive mothers**, in 2016 5 AIDS center laboratories were equipped with the respective equipment. During 2016 3031 child was screened, among them 862 children born in 2014-2015 and 2 169 children born in 2016. Only 84 children had a positive result, accounting for 2.77% among all screened persons (**table 35** of the Annex).

SECTION 13.

RESULTS OF THE STUDY ON ASSESSMENT OF INDICATORS OF EARLY PREVENTION OF DRUG RESISTANCE OF HIV

The current situation with HIV in Ukraine remains unfavorable as the epidemic continues to spread among the general population. The ART coverage is expanding in response to the epidemic.

The increase in the number of HIV-infected patients receiving ART, on the one hand, can reduce the incidence of HIV/AIDS, and on the other hand it can increase the rate of emergence and circulation of resistant HIV strains among the population.

The process of MDR-HIV resistance development to ART drugs depends on many factors, including the level of provision of ART services in specific health facilities.

In order to identify and address the factors that may contribute to the development of MDR HIV, the WHO recommends to carry out monitoring of early preventive interventions (EPI) against multidrug HIV resistance development. Regular analysis of MDR-HIV EPI as one of the elements of the national strategy for monitoring HIV resistance in Ukraine allows assessing the effectiveness of ART programs at the level of individual institutions, as well as at the national level.

Each EPI has a target to be achieved. Problems with the achievement of the target level of the EPI can mean that institutions need wider support in the form of additional resources, staff training, an increase in the number of employees, etc. Regular monitoring of the EPI is necessary to strengthen the national response to the HIV/AIDS epidemic in Ukraine, especially in the provision of ART.

In 2016, a special study was conducted in the framework of such monitoring to assess the performance of the ART program at the level of individual HCFs in terms of their organizational capacity to prevent the development of MDR-HIV in patients on ART.

A cross-sectional analysis of retrospectively collected data from 22 AIDS Centers (21 oblast AIDS Centers and Kyiv AIDS Center) was used as a methodological approach. All

institutions provided ART services for both adult patients and HIV-infected children. It was planned to collect data from 23 regions, however, with the Donetsk region there were some difficulties, since the major number of patients remained in the region temporarily uncontrolled by the government, and in the Mariupol and Slovyansk city AIDS Centers the number of patients who initiated ART since 01.01.2014, was not sufficient to generate the necessary sample. Due to insufficient sample, Ternopil AIDS Center was also left out of the study on EPI monitoring.

The data on the availability of each ARV drug during the 12 calendar months of 2015 were used to collect information about the EPI. If an ARV drug was absent in the district AIDS Center in any given month during 2015, then this institution was recognized as having a shortage of ARV drugs

Target group: persons having been on ART since January 01, 2014.

Determined observation time: 15 months from the start of ART.

Selection of surveillance sites:

Criteria of HCF eligibility for information collection:

1. *The HCF provided ART for more than 12 months;*
2. *The HCF was able to provide ARV drugs for more than 60 patients;*
3. *The HCF provided monthly statistical reports at the SE "Ukrainian Center for the Socially Dangerous Diseases Control of the MoH of Ukraine".*

Sources of information:

- *Outpatient medical record under the form No. 025/0;*
- *Inpatient control record under the form No. 030-5/0;*
- *Accounting log of medicines, milk formulas in the departments and cabinets of the HCFs providing health services to the PLWH under the form No. 510-1/0.*

Sample size for each facility is indicated in **Table 15**.

Table 15. List of HCFs and sample size for each facility

No.	HCF name	Sample size		
		adults	children	total
1.	Vinnitsya oblast AIDS Center	138	3	141
2.	Volyn oblast AIDS Center	135	2	112
3.	Dnipro oblast AIDS Center	127	9	135

No.	HCF name	Sample size		
		adults	children	total
4.	Zhytomyr oblast AIDS Center	148	0	148
5.	Zakarpattia oblast AIDS Center	54	2	56
6.	Zaporizhya oblast AIDS Center	124	0	124
7.	Ivano-Frankivsk oblast AIDS Center	130	0	130
8.	Kyiv oblast AIDS Center	160	5	165
9.	Kirovohrad oblast AIDS Center	129	14	143
10.	Lviv oblast AIDS Center	127	1	128
11.	Mykolayiv oblast AIDS Center	166	4	170
12.	Odesa oblast AIDS Center	141	19	160
13.	Poltava oblast AIDS Center	139	4	143
14.	Rivne oblast AIDS Center	111	3	114
15.	Sumy oblast AIDS Center	107	3	110
16.	Kharkiv oblast AIDS Center	135	5	140
17.	Kherson oblast AIDS Center	152	3	155
18.	Khmelnyskyy oblast AIDS Center	131	0	131
19.	Cherkasy oblast AIDS Center	116	2	118
20.	Chernivtsi oblast AIDS Center	46	0	46
21.	Chernihiv oblast AIDS Center	153	1	154
22.	Kyiv oblast AIDS Center	161	15	176
	Total	2830	95	2899

Data on children (0-17 years) and adult patients were accumulated until the required sample size for each site was achieved. The data were collected and analyzed using the WHO Information Collection Tool – Excel spreadsheets. The WHO electronic tool calculates all the indicators automatically, since data input uses color coding to mark the errors in the analysis, that is, the color mark is the initial part of the site level data quality assessment.

The facility performance was evaluated using the system of indicators of four colors: green (“excellent” performance), amber (“satisfactory” performance), red (“low” performance) and gray (the required information was not tracked at the specified site).

Experienced specialists who have been trained to fill in an electronic tool for collecting early prevention indicators for HIV-infection and completed training seminars on the implementation of the Decree "On the Approval of Temporary Accounting and Reporting Forms and Completion Guidelines for HIV/AIDS Monitoring".

Specialists were provided with additional phone consultations while completing the tool.

With the framework of the study, a collection of 5 EPIs was recommended by the WHO: timely drug administration, management of patients under supervision, continuity of ARV deliveries, presence or absence of mono/bi-therapy, and viral suppression level (Table 16).

Table 16. *List of collected early prevention indicators*

EPI indicator name	EPI definition	Components of the colored EPI indicators calculation (Numerator/denominator)	Value of colored indicators
EPI 1. Timeliness of receiving ARV drugs	Percentage of patients in the target group (adults and children) receiving ARV drugs in a timely manner or with a delay of no more than two days	Numerator: The number of patients who received ARV drugs in a timely manner on the first visit after receiving first line medicines. Denominator: The number of patients taking ART in the specified period after the start of the EPI collection date.	Green: > 90% Amber: 80% -90% Red: <80%
EPI 2. Retention of the patient under supervision in 12 months after the ART start	Percentage of patients in the target group (adults and children) who are known to be alive and receive ART in 12 months after starting treatment	Numerator: The number of adults and children who are known to be alive and continue taking ART in 12 months after starting treatment. Denominator: The total number of adults and children who started ART, including those who died after the start of therapy and those who discontinued therapy, as well as those who are registered as lost for follow-up before 12 months from the start of ART.	Green: > 85% Amber: 75% -85% Red: <75%

EPI indicator name	EPI definition	Components of the colored EPI indicators calculation (Numerator/denominator)	Value of colored indicators
EPI 3. Uninterrupted supply of ARV drugs	The percentage of months within the selected time interval during which there was no shortage of ARV drugs	<i>Numerator:</i> The number of months in a given year when there was no shortage of the stock of ARV drugs that are commonly used in this facility. <i>Denominator:</i> 12 months.	Green: 100% Red: <100%
EPI 4. Practice of prescribing mono- or bi-therapy	Percentage of target group patients (adults and children), who received ART in form of one or two ARV medicines	<i>Numerator:</i> The number of patients who were prescribed an ART regimen consisted of one or two ARVs. <i>Denominator:</i> The number of patients who received ART during the specified period after the start of the EPI collection date.	Green: 0% Red: > 0% and
EPI 5. Viral suppression – viral load suppression after 12 months of ART	The percentage of adult patients of the target group who had viral load level of less than 1000 RNA copies/ml after 12 months of ART.	<i>Numerator:</i> The number of patients who had the VL <1000 RNA copies / ml after 12 months of therapy <i>Denominator:</i> The number of patients who received ART during the specified period after the start of the EPI collection date.	Green: >85%; Yellow: 70% – 85%; Red: <70%

It should be noted that in 5 institutions (Zhytomyr, Zaporizhya, Ivano-Frankivsk, Khmelnytsky, Chernivtsi AIDS Centers) there were no children among patients who started ART in 2014, thus, collecting the necessary information on them was impossible. For these institutions the relevant indicator was grayed out, because its performance in this respect was not subject to assessment.

Study results and discussions

Summary results of the EPI analysis are set forth in **Table 17**.

Table 17. Results of the analysis of EPI collected in Ukraine in 2016

EPI name	Value of color indicators	Number of HCFs whose performance matched the color indicator / general number of HCFs in the study (%)		Average performance indicator, M±m	
		Adult patients	children	For adults	For children
EPI 1. Timely receiving of ARV medicines	Green: > 90% Amber: 80% -90% Red: <80% Grey (not classified)	5/22 (22,7%) 7/22 (31,8%) 10/22 (45,5%) 0 (0,0)	8/22 (36,4%) 2/22 (9,1%) 7/22 (31,8%) 5/22 (22,7%)	83,0±8,0	75,8±10,3
EPI 2. Retention of the patient under supervision in 12 months after the ART start	Green: > 85% Amber: 75% -85% Red: <75%	8/22 (36,4%) 11/22 (50,0%) 3/22 (13,6%)		85,3±7,6 (9044/10597)	
EPI 3. Uninterrupted supply of ARV drugs	Green: 100% Red: 0%	20/22 (90,9%) 2/22 (9,1%)	21/22 (95,5%) 1/22 (4,5%)	Not calculated	Not calculated
EPI 4. Practice of prescribing mono- or bi-therapy	Green: 0% Red: > 0% Grey (not classified)	22/22 (100%) 0 (0,0) 0 (0,0)	17/22 (77,3%) 0 (0,0) 5/22 (22,7%)	0	0
EPI 5. Viral suppression - viral load suppression after 12 months of ART	Green: >85%; Amber: 70%-85%; Red: <70% Grey (not classified)	0 (0,0) 1/22 (4,5%) 21/22 (95,5%)	7/22 (31,8%) 4/22 (18,2%) 6/22 (27,3%) 5/22 (22,7%)	26,9±9,5	52,6±12,1

Timely receiving of ARV medicines (EPI 1).

Data on adult patients. The results showed that "excellent" performance (when more than 90% of adult patients received ART in a timely manner) was achieved only in 22.7% of the HCFs, while 31.8% of the sites showed "moderate" performance (80-90% of adult patients receiving medication in a timely manner) and 45.5% of the HCFs generally had "poor" performance (less than 80% of adult patients received ART in a timely manner).

Data on children. 36.4% of the sites achieved "excellent" performance, 9.1% - "moderate", 31.8% - "poor". Another five institutions had no data regarding children for the indicated period of data collection (these institutions were marked with the gray "not classified" indicator).

Retention of patients under surveillance (EPI 2).

EPI 2 takes into account aggregated data on HCFs, without breakdown by adults and children. Indicators for EPI 2 calculations were derived from the GARPR / PEP-FAR reports.

More than a third (36.4%) of all sites achieved "excellent" performance, keeping more than 85% of patients monitored for 12 months after ART initiation. Half of the HCFs (50%) had "moderate" performance (from 75% to 85% of patients remained monitored after 12 months); "Bad" performance (less than 75% of patients) was recorded in 13.6% (in 3 out of 22) sites that participated in the study.

Uninterrupted supply of ARV drugs (EPI 3).

Data on **adult patients**. During 2015, in the vast majority of sites there was no shortage of any drugs for adult patients (90.9% of institutions). At the same time, in Zaporizhya Oblast AIDS Center, in 2015 there was a shortage of didanosine (ddI 400) (from January to July 2015 inclusive - 7 months); In the Kyiv City AIDS Center there was no AZT / 3TC medication for 2 months (April-May 2015); TDF / FTC was absent in September 2015; RTV was lacking in November 2015; ETR was absent in March and October 2015 (in total there was a shortage of ARV medicines for 6 months out of 12).

Data on children. During 2015, in the vast majority of sites there was no shortage of any drugs for children (95.5% of institutions). Only in the Kyiv City AIDS Center there was a shortage of children's dosage forms: ABC - from August to December 2015 (5 months); 3TC - in January 2015; AZT - from May to July 2015. (3 months); NVP - in July 2015 (in general, there was a shortage of children's dosage forms of ARVs for 10 months out of 12).

Practice of prescribing mono- or bi-therapy (EPI 4).

None of the HCFs demonstrated the cases of prescribing ART as mono- or biotherapy either for the treatment of adult patients or for children ("excellent" performance in 100% of institutions for adult patients and in 77.3% for institutions for children). For children 100% performance was not achieved, since in 5 facilities (22.7%) data on children during the reporting period were not available.

Viral suppression (EPI 5).

Data on adult patients. Unfortunately, based on collected data on adult patients no HCF managed to achieve "Excellent" performance (when more than 85% of ART patients had VL levels of <1000 RNA copies/ml after 12 months of ART); only 4.5% of the sites had "moderate" result (in 70-85% of the patients the level of HIV VL did not exceed 1000 RNA copies/ml), and in the vast majority of sites (95.5%) the performance was generally "poor" (less than 70% of patients had a corresponding level of HIV VL).

Data on children. "Excellent" performance (green) was achieved only in 7 facilities (31.8%); "Moderate" (amber color) - in 18.2% of facilities; "Poor" (red) - in 27.3% of facilities. In 5 sites children were absent during the reporting period.

Analyzing the results obtained for specific EPIs, it should be noted that there is no practice of prescribing mono- or bi-therapy (EPI 4) for the treatment of HIV-infected patients in the country, which is a good indicator.

As for ARV shortages (EPI 3) in 2015, the Kyiv City AIDS Center recorded a lack of several ARVs for the treatment of HIV-infected adults for 6 months, and the lack of children's dosage forms - for 6 months, for 10 months, the form of childhood ARVs, which, At first glance this could seem an evidence of the weak drug procurement planning in this facility and poor management of ARV supply. Data verification has shown that in Ukraine, during the year 2015, in some regions there was also a shortage of certain ARVs, but not all facilities dared to publicly inform about these issues.

The shortage of drugs in the warehouses does not always mean that there was nothing to treat the patients with, as they receive an amount of medicines to suffice for at least 30 days of treatment when they visit a hospital, but the absence of ARVs can still lead to interruptions in patient treatment and increase the risk of resistant HIV strains development. The second regional center, which recorded a shortage of adult ARV dosage forms in EPI3 was Zaporizhya Oblast AIDS Center. Analysis of EPI 3 enabled to establish that the electronic forms should be checked during filling, so that the findings related to them could be practically useful.

The overall situation regarding the management of patients under observation is somewhat worse in Ukraine (EPI 2), since only 8 out of 22 (36.4%) facilities have achieved the target value of the indicator (more than 85% of ART patients after 12 months of ART); in half of the facilities (11 out of 22) from 75% to 85% of patients were kept under surveillance in 12 months, the rest of the HCFs (3 out of 22) accounted for less than 75% of patients on treatment after 12 months of ART. Such a result cannot be considered prospectively favorable, as it leads to interruptions in treatment and an increase in the risk of resistant HIV strains emergence in the country.

The situation with EPI 1 (timely receiving of ARV medicines) was even more critical, since in almost half of facilities (in 10 out of 22 – 45.5%) less than 80% of adult patients received ART timely; in a third of HCFs (in 7 out of 22 patients – 31.8%) 80-90% of patients visited the facility to receive their monthly stock of medicines in due time), and only 5 of the 22 facilities (22.7%) achieved the target (that is, more 90% of adult patients received ART in a timely manner). As for children, the target was achieved in 8 out of 22 facilities (36.4%) (more than 90% of children received medications in a timely manner); in 2 (9.1%) – 80-90% of children came to receive their medicines in a timely manner; in 7 (31.8%) the situation turned out to be unfavorable, since less than 80% of children received ARV medicines in a timely manner.

Timely taking of medicines is the measure of a patient discipline. The low level of timely medicine taking can mean missed doses of drugs or an interruption of treatment. The main reasons for untimely taking of ARVs by patients may be the following:

- *low personal motivation for ART;*
- *lack of awareness of the need for timely taking of ARVs;*
- *abuse of alcohol and psychotropic substances;*
- *lack of support from the family and partners regarding the need for ARVs;*
- *insufficient level of social and psychological support from the CSOs;*
- *inconvenient time for the ARV drugs dispensing in the HCF;*
- *inconvenient location of the HCF providing ARV drugs;*
- *shortcomings in the system of ARV dispensing registration.*

To prevent the risk of MDR-HIV emergence each HCF should analyze the causes of untimely receiving of ART by patients and take actions to address them.

However, most of the sites showed that achieving the performance indicators in terms of viral suppression (the need to reduce the level of HIV in blood to less than 1000 RNA copies/ml) was the most problematic. The target in adult patients (the presence of viral suppression in more than 85% of patients) has not been achieved in any of the HCFs. Actually, the analysis of this EPI takes into account not only the level of HIV VL,

but also the timeframes of patient examination. In Ukraine, the current practice of public procurement involves one-time procurement and delivery of test systems for ART monitoring to the regions which is planned to be cover the annual need. Procurement, as a rule, takes place in the 3rd and 4th quarters, which does not allow ensuring two deliveries of test systems with a limited useful life within a year. This actually prevents using the entire volume of purchased test systems in laboratories before their shelf life expiration (7-8 months at the time of delivery), and hence causes the inefficient and unfeasible use of budget funds. Thus, in 2014, the expiry date of the test systems for determining the level of HIV VL ended in June. As the next procurement for the state budget funds took place only in December 2014, and delivery – in March 2015, HIV-infected patients were not screened for the virologic efficacy of ART during almost 8 months. Therefore, most HCF patients for whom EPI5 data were collected did not have a history of HIV VL monitoring after 12-15 months of treatment and were screened much later.

- *The low performance of any EPI may potentially lead to an increase in the rate of HIV resistance in Ukraine.*
- *Based on the analysis of the study findings the following conclusions can be drawn regarding the importance of EPI in preventing the emergence of MDR-HIV resistance mutations.*
- *Monitoring of HIV EPI is an important element of the national HIV resistance monitoring strategy in Ukraine, as it allows to identify shortcomings of existing ART programs both at the level of individual facilities and at the national level.*
- *The EPI collection should be carried out annually in the HCFs which provide ART in the country. Information for collecting EPI data can be obtained from the accounting forms currently used in the HCFs.*
- *It is necessary to ensure the proper quality of information collection for monitoring the EPI and obtain reliable data through additional training of specialists and monitoring visits to institutions that collect EPI.*
- *An important step towards the implementation of the 90-90-90 strategy is the absence of mono- and bi-therapy prescription practice in Ukraine among HIV-infected adult patients and among children.*
- *Among the disadvantages that negatively affect the 90-90-90 strategy efficiency we should mention the low performance of most HCFs of Ukraine regarding the management of ART patients after 12 months of therapy and untimely receiving of ARVs by the patients. Low performance (failure to achieve targets) can cause the risk of MDR-HIV strains emergence in ART patients.*
- *The country should highly prioritize ensuring the uninterrupted supply of ARVs and monitoring the virological efficacy of antiretroviral treatment for HIV-infected patients*

by improving the existing procurement practices for medicines to treat patients with resistant HIV and reagents for HIV-related studies.

- *These conclusions provide recommendations for minimizing the risk of resistant HIV strains emergence in most of the HCFs which participated in the collection and analysis of the EPI. The following actions are recommended:*
- *Improve advisory work with the dispensary group of patients;*
- *establish close cooperation with NGOs providing care and support services;*
- *optimize schedules for medical counseling and ARV drugs dispensing;*
- *ensure compliance with the recommendations of national protocols for the treatment of HIV-infected patients.*

SECTION 14.

REPORT ABOUT THE RESULTS OF THE MONITORING AND EVALUATION OF THE EFFICIENCY OF THE NATIONAL TARGET SOCIAL PROGRAM FOR HIV/AIDS PREVENTION

for 2014-2018

In 2016, in Ukraine continued the process of a unified M&E system development. for the purpose of implementation of the National Target Social Program for Prevention HIV/AIDS for 2014-2018 (the National Program for HIV/AIDS Countermeasures for 2014-2018). The State Service of Ukraine for Combating HIV / AIDS and Other Socially Dangerous Diseases by its order dated 15.01.2015 №2 approved the Plan for monitoring and evaluation of the performance efficiency of the National Target Social Program for Prevention HIV/AIDS for 2014-2018.

It should be noted that Ukraine is facing significant political and financial problems due to the armed conflict in Eastern Ukraine and the harsh economic situation. Despite the deep political and economic crisis in Ukraine, it managed not only to continue the implementation of the National Program for HIV/AIDS Prevention for 2014-2018 and to avoid interruptions in providing services for the prevention and treatment of HIV infection, but also to enhance significantly the state leadership in combating socially dangerous diseases, particularly in financing the following programs:

- *The Ukrainian state budget estimate for 2017 provides for the increased financing of the measures for treatment of HIV/ AIDS by 484 million UAH, which is 2,3 more than the funds allocated in the current 2016.*
- *Today, for the first time, they managed to fulfill the obligations of the state financing of substitution therapy program – in 2016 the state-financed procurement of drugs for sub-*

stitution treatment for 13 million UAH is planned, which shall ensure the consistency of programs for about 9 thousand patients.

- In 2017, there is a possibility to cover a total number of 101 thousand patients with ART, including to opportunity for about 59 thousand patients to receive the necessary treatment at the expense of the state budget.
- The FastTrack strategy, which was proclaimed by UNAIDS in late 2014, provides for introduction of innovative approaches to combating the epidemic. The Ukrainian capital Kyiv in April 2016, and Odessa in February 2017 joined the FastTrack and the Paris Declaration proclaiming their readiness to accelerate the overcoming of the HIV epidemic in large cities (FastTrackCitiesInitiative).

The national M & E plan is a framework of indicators for monitoring the country's response to the epidemic in general, a model for the formation of regional M&E plans, it is developed separately for each of the state HIV / AIDS target programs with the purpose of providing feedback in the program control system.

The National Plan of M&E of the performance efficiency of the National Program for HIV / AIDS Countermeasures for 2014-2018 includes 28 indicators (National M&E Plan).

The analysis of the National M&E indicators for 2016, compared with the previous and baseline ones, revealed some positive trends of the influence of HIV / AIDS combating measures upon the course of the epidemic and access to HIV-related services (**Table 18**):

- The financial costs of combating the HIV infection have increased by 4.3 times in comparison with the baseline ones – from 492 874 thousand UAH in 2012 to 2 135 053 UAH in 2015.
- Over the recent 4 years, the mortality from disease caused by HIV has decreased by 11% -10,4 deaths per 100 thousand people in 2016 compared to 11.5 in 2013.
- The HIV prevalence among young people aged 15-24 years has a stable tendency to decrease and in 2015 achieved the target indicator for 2018 – 0,27%, and in 2016 it was 0.25%.
- According to the biobehavioral studies, there has been a declining trend of the prevalence of HIV among the MARPs under 25 – among PWID (7.1% in 2011, 6.4% in 2013, 4.1% in 2015) and female sex workers (2,9%, 2,3%, 0,7%, respectively).
- The HIV prevalence among pregnant women in 2016, compared with the baseline indicator for 2013, decreased by 18.4% from 0.87% to 0,71%.
- The rate of HIV transmission from mother to child in Ukraine decreased by 22.8% compared to the baseline one – from 4.3% in 2012 to 3.3 in 2014.
- Over the recent years, the active medical supervision group number kept the consistent tendency to increase and in 2016 it was 79.8%, which is 6.5% higher than the respective baseline indicator in 2013 (74.9 %).

- *The proportion of PLWH covered by care and support services in 2016, among adult HIV-infected people under MS grew and is 66.8% (in 2015 – 57,5%, in 2014 – 62,5%).*
- *The total number of HIV-infected patients who receive ART in Ukraine as of 01.01.2017, compared to the baseline indicator (as on 01.01.2014) increased by 34% – from 55 784 people to 74 780 people.*
- *The coverage of TB/HIV patients with ART increased by 14% from 64.6% in 2013 to 73.9% in 2016, which contributed to the decrease of the mortality rate among patients co-infected with TB/HIV by 25% – from 5.6 to 4.2 per 100 thousand people.*
- *The indicator “percentage of people with opioid addiction receiving substitution therapy” reflects the gradual progress from 17% in 2013 to 21.8% in 2016.*

One of the most developed components of the unified system of monitoring and estimating still is the routine surveillance system that is financed almost entirely by the state budget and uses the latest international approaches and recommendations. Another well-established source of M&E data is program monitoring of activities of NGOs implementing projects, in particular in the framework of the implementation of GF grant programs with the financial support of AUCO “All-Ukrainian Network of PLWH” and the ICF “Alliance of Public Health”, as well as the biobehavioral, epidemiological, economic and other studies and assessments. This activity is funded primarily by international sources, thus its sustainability and further development depends on donor funds.

The main challenges for the complete implementation of the EU M&E and use of its potential are:

- *the lack of the domestic request for the supply of information for use in management to improve policies and programs that ensure efficient use of financial resources, the achievement of the declared goals of commitment to combat the epidemic;*
- *the lack of effective cooperation and coordination among all partners (national, international, state, public and the like) in the M&E at both national and regional levels.*
- *almost complete absence of state funding of M&E activities at the national and regional levels;*
- *imperfection of regulatory and legal acts regulating the activity in M&E domain;*
- *the absence of the profession “M&E Expert” in the classifier of professions. The lack of a system of professional training through the higher education system in Ukraine;*

Further development of the EU M&E will be possible under the following conditions:

- *coordination of actions of all partners in the field of M&E on the basis of the consolidated national M&E plan that meets the real information needs of the country, and also takes into account the external obligations of the country on international reporting;*
- *revision of powers and responsibilities of the national M&E centre, legal determination of its status and appropriate steps regarding the M&E centers at the sub-national level;*
- *development and implementation of guidance documents in the field of M&E of the response to the HIV epidemic, including the following: the policy of knowledge management, the national research agenda in the field of HIV, methodological manuals and protocols, studies and evaluations, reviewing the existing and identifying priority indicators, and the like;*
- *strengthening of human resources of M&E experts in relation to the analysis and use of data for making strategic decisions on forming efficient response to the HIV epidemic in Ukraine. Development of potential of experts in M&E concerning data quality analysis and assessment at all levels;*
- *formation of strategy for development of unified system of monitoring and evaluation of the efficiency of measures aimed at preventing the spread of HIV, in the framework of the Law of Ukraine "On approving the National Target Social Program for HIV/AIDS Countermeasures for 2014-2018";*
- *development and practical implementation of modern tools and databases for storing, processing and analyzing large volumes of data, support and development of an appropriate infrastructure, specialized training of personnel at the national and regional level.*

Table 18. Indicators for the National plan for monitoring and evaluation of the efficiency of the implementation of National Target Social Program for HIV/AIDS Response for 2014-2018”

Indicator number and name	Indicator baseline value	Report for 2015	Report for 2016	Indicator target value (2018)
Indicator No.1. Scope of financial expenditures to combat HIV infection	492 874 th. UAH (2012)	No report	2 135 053 th.UAH ¹ .	Not defined
Indicator No.2. Ratio of actual funding of the Program to the planned one	36.1% (2013)	No report	No report	100%

Indicator number and name	Indicator baseline value	Report for 2015	Report for 2016	Indicator target value (2018)
Indicator No.3. HIV prevalence among young people aged 15-24	0.33 (2013)	0.27% (2015)	0.25% (2016)	0.27%
Indicator No. 4. Mortality of population from the disease caused by HIV ²	11.5 per 100 th. people (2013)	10.2 per 100 th. people (2014)	10.4 per 100 th. people (2015)	9.9 per 100 th. people
Indicator No. 5. HIV prevalence among pregnant women	0.87% (2013)	0.75% (2015)	0.71% (2016)	0.49 %
Indicator No. 6. Percentage of people who inject drugs living with HIV among the 15-24 age group	6.4% (2013)	4.1% (2015)	No report	3.5%
Indicator No. 7. Percentage of female sex workers living with HIV among the 15-24 age group	2.3% (2013)	0.7% (2015)	No report	1.4%
Indicator No. 8. Percentage of men having sex with men living with HIV among the 15-24 age group	3.0% (2013)	4.8% (2015)	No report	2.1%
Indicator No. 9. Incidence of mother-to-child HIV transmission	4.3% (2012)	3.9% (2013)	3.3% (2014)	1.0%
Indicator No. 10. Percentage of people who inject drugs covered with testing for HIV antibodies	42.8% (2013)	38.5% (2015)	No report	55.0%
Indicator No. 11. Percentage of female sex workers covered with testing for HIV antibodies	63.1% (2013)	55.9% (2015)	No report	70.0%

¹ The study of assessment of national expenditures to combat HIV/AIDS includes 2015 expenditure data.

² The indicator is calculated considering the reporting postponement for 1 year in connection with forming the annual reports to the State Statistics Service of Ukraine in the II quarter of the year following the reporting year.

Indicator number and name	Indicator baseline value	Report for 2015	Report for 2016	Indicator target value (2018)
Indicator No. 12. Percentage of men having sex with men covered with testing for HIV antibodies	38.3% (2013)	54.6% (2015)	No report	55.0%
Indicator No. 13. Percentage of prisoners covered with testing for HIV antibodies	36.0% (2013)	No report.	No report	60.0%
Indicator No. 14. Number of people who inject drugs covered with prevention services	196 460 (2013)	212 817 (2015)	224 872 (2016)	154 400
Indicator No. 15. Number of female sex workers covered with prevention services	37 394 (2013)	37 908 (2015)	37 090 (2016)	36 000
Indicator No. 16. Number of men having sex with men covered with prevention services	21 988 (2013)	33 359 (2015)	38 764 (2016)	49 000
Indicator No. 17. Percentage of secondary educational establishments which have trained teachers and during the last academic year ensured the training of pupils under life skills development programs aimed at healthy lifestyle and HIV prevention	61.6% (2012)	No report	No report	100%
Indicator No. 18. Percentage of young people aged 15-24, who correctly identify the ways to prevent sexual transmission of HIV and know how it is not transmitted	48.0% ³ (2012)	No report	No report	70%

³The indicator was calculated in the basis of multi-indicator cluster study (MICS) of 2012

Indicator number and name	Indicator baseline value	Report for 2015	Report for 2016	Indicator target value (2018)
Indicator No. 19. Percentage of people living with HIV who were enrolled for medical supervision at III and IV clinical stages of HIV among the total number of persons diagnosed with HIV for the first time in their life	44.2% (2013)	45.1% (2015)	46.6% (2016)	37.0%
Indicator No. 20. Percentage of people living with HIV who passed medical examination during the year, among the total number of registered PLWH	74.9% (2013)	77.7%	79.8 (2016)	85.0%
Indicator No. 21. Percentage of PLWH covered with care and support services	Adults - 55.3% Children - 82.8% (2013)	Adults - 57.5% Children - 74.2% (2015)	Adults - 66.8% Children aged 15-18 inclusive- 34.4% (2016)	Adults - 100% Children - 100%
Indicator No. 22. Number of people living with HIV who receive ART	55784 (2013)	60 753 (2015)	74 780 (2016)	118240
Indicator No. 23. Percentage of children receiving ART from among the total number of children living with HIV	89.6% (2013)	98.4% (2015)	98.4% (2016)	100%
Indicator No. 24. Number of people with HIV/AIDS who receive ART after 12 months since its initiation	86.7% (2013)	85.5% (2015)	85.92% (2016)	86%
Indicator No. 25. Percentage of registered HIV-infected patients with TB who received ART during TB treatment	64.6% (2013)	57.0% (2015)	73.9% (2016)	70.0%

Indicator number and name	Indicator baseline value	Report for 2015	Report for 2016	Indicator target value (2018)
Indicator No. 26. Number of deaths caused by TB from among TB/HIV co-infected patients	5.6 per 100 th. people (2013)	4.5 per 100 th. people (2015)	4.2 per 100 th. people (2016)	3.0 per 100 th. people
Indicator No. 27. Percentage of people with opioid dependence who receive OST	17.0% (2013)	8512 ⁴	21.81% (2016)	35.0%
Indicator No. 28. Level of discrimination of people living with HIV	85.3 ⁵ (2012)	No report	45%/66% ⁶ (2016)	decrease by 50% from baseline value

⁴In connection with postponement of the data provision, the report contains absolute data with regard to the numbers of official dispensary group of people with opioid dependence

⁵The indicator was calculated on the basis of the results of multi-indicator cluster survey among households (MICS) of 2012 based on the respondents' answers to the following questions. – Would you buy fresh vegetables and fruit from a grocer or a seller if you knew he's HIV-positive? ("Yes"; "No"; "Depending on the situation"; "Do not know/not sure").

⁶Based on the results of the survey "People's awareness about the epidemic of HIV in Ukraine-2016" 20.01.2017, the responses "In your opinion, should a HIV-positive child be allowed to attend the same school as HIV-negative children?"- 45% and "would you buy fresh vegetables and fruit from a grocer or supplier if you knew this person is HIV-positive?" – 66%.

SECTION 15.

DEVELOPMENT OF THE NATIONAL HIV/AIDS STRATEGIC INFORMATION PORTAL

National HIV/AIDS Strategic Information Portal (National Portal) is a modern on-line resource for visualization and data analysis to enable management decision-making in the field of M&E activities to combat the HIV epidemic, designed to ensure transparency and optimize the access of stakeholders to Strategic information on HIV/AIDS.

The National Portal was developed at the request of the State Enterprise "Center for Public Health of the Ministry of Health of Ukraine" within the framework of the USAID RESPOND project funded with the support of PEPFAR and implemented by the Pact Inc. in partnership with FHI 360. The National Portal operates in a test mode with the technical support of USAID RESPOND project. In 2017, the national portal will be handed over to the State Enterprise "Center for Public Health of the Ministry of Health of Ukraine".

The National Portal was launched in early 2015 and is available on the site of the State Enterprise "Center for Public Health of the Ministry of Health of Ukraine": www.hiv.ucdc.org.ua. During 2016, 6100 site views were registered.

The National Portal combines several independent interactive Internet resources created using the most convenient data visualization methods at the national and regional levels – diagrams, charts, maps:

1. Regional online profiles. This is a resource that contains key epidemiological data, results of behavioral research among MARPs, implementation of prevention and treatment programs in the area of HIV/AIDS response at the regional level.

2. Mapping services. The resource contains static and interactive maps of HIV services for MARPs in Ukraine generated by ArcGIS software; hands-on guides, ready-made templates and data arrays allowing users to create their own maps that can identify

potential gaps in the availability of HIV services and plan programs for geographically expanding the access to these services.

3. Register of HIV/AIDS Interventions will contain information on the implementation of effective behavioral and structural interventions in Ukraine, as well as assessment of the evidence-based strength level for each of them.

4. The register of HIV-service organizations and donors working in the field of HIV/AIDS will contain general information on donor organizations, technical assistance projects, and NGOs working in Ukraine in the area of HIV/AIDS, indicating activities, geographical coverage, target groups and contact information.

5. Regional M&E centers. The resource is an electronic office of regional M&E centers that contains information on the situation with the development of the M&E system at the level of each region and the activities of the regional M&E centers.

6. Electronic library of publications. The resource contains publications in the area of HIV/AIDS response prepared in Ukraine. Publications are structured according to the headings and type of publication.

7. Research plans. The resource contains information on research on HIV/AIDS, which is being implemented and planned for this year.

8. Training plan. The resource contains information on trainings related to HIV strategic information and M&E at the national and local levels scheduled for this year.

9. HIV/AIDS Programs M&E. The resource is an instrument for visualizing progress of the Monitoring Plan indicators achievement and assessing the effectiveness of the National Target Social Program on HIV/AIDS Response for 2014-2018. The resource was developed with the support of USAID's "HIV Service Reform in Action" implemented by Deloitte Consulting LLP.

The work on development of three more Internet resources is being underway: Modeling the epidemic at the regional level (with the support of the USAID RESPOND Project); Information board on monitoring the implementation of national and regional HIV/AIDS programs; Electronic Cost Tracking Tool (NASA) (with the support of the USAID HIV Service Reform in Action Project).

It should be emphasized that the National Strategic Information Portal was included in the description of best practices of the GARPR report for Ukraine; it was presented at the National Conference "Facing the Challenge: the Future of the Reform of HIV and Health Sector in Ukraine". At the VI National M&E Conference, the National Portal, as well as the Regional profiles resource was presented as the best experience in visualizing and disseminating information on HIV/AIDS and awarded the title of the best innovative approach in HIV/AIDS area.

SECTION 16.

RECOMMENDATIONS ON STRENGTHENING HIV/AIDS PREVENTION AND RESPONSE SERVICE BASED ON THE ANNUAL REPORT ACCEPTANCE OUTCOMES

Within the framework of the implementation of the statutory provisions and tasks of the State Institution "Center for Public Health of the Ministry of Health of Ukraine" for the implementation of methodological guidance and overall control of the regional AIDS Centers as approved by the order of the Ministry of Health of Ukraine dated 12.12.2012, No. 277-o, and in accordance with the provisions of the Order of the Ministry of Health of Ukraine dated 21.11.2016. No. 1265 "On the Establishment and Approval of the Composition of the Working Group on the Acceptance of Statistical Reports of Health Care Institutions of Ukraine for 2016" by the specialists of the State Institution "Center for Public Health of the Ministry of Health of Ukraine" during January 17-30, 2017, the summary activity reports and official information for 2016 were accepted from 25 regional AIDS Centers (*no data for Crimea and the part of the ATO area are available*).

Based on the results of the work, the factors adversely impacting the effectiveness of HIV response activities in each of the regions were identified; general recommendations were drafted for strengthening the development of the AIDS prevention and control service at the national and regional levels.

On the national level SI "Center for Public Health of the Ministry of Health of Ukraine" recommends:

In order to improve epidemiological surveillance and M&E systems it is recommended to:

- *Develop and submit for approval a draft order of the MOH "On monitoring of the HIV epidemic situation" in accordance with the requirements of international standards and national needs;*

- *Consider the possibility of developing and beta-testing of the health information system "HIV-infection in Ukraine";*
- *Consider the possibility of developing an electronic system to record the positive and negative results of the epidemiological monitoring, with a view to ensure feasibility of resources use;*
- *Continue work with the heads of the anti-TB Service, medical support departments (sectors) of the inter-regional criminal penalty and probation departments of the Ministry of Justice of Ukraine on improving the cooperation between services in order to enhance the verification and data exchange system between services in the field of HIV/AIDS, referral of HIV-infected persons between medical institutions;*
- *Train specialists of the regional AIDS centers on the issues of improving the HIV/AIDS epidemic response in accordance with international standards and national needs;*
- *Continue to provide organizational and methodological assistance on monitoring the HIV epidemic situation through monitoring visits to the regional AIDS centers.*

To ensure prevention activities with regard to HIV counseling and testing:

- *Consider reviewing the Order of the Ministry of Health of Ukraine dated May 11, 2010 No. 388 due to the complexity and low level of information provision;*
- *Develop a single legal and regulatory document on the procedure for reporting and feedback between the NGOs/outpatient clinics/polyclinic facilities carrying out HIV CT with rapid tests and the AIDS service facilities, in order to create a clear system of redirecting people with HIV-positive test results and timely enrollment under medical supervision and care;*
- *Ensure systematic professional development and topical training of the persons responsible for HIV CT reporting consolidation.*

In order to enhance the efficiency of mother-to-child transmission prevention activities it is recommended to:

- *Within the framework of Ukraine's support for the Global plan towards the elimination of new HIV infections among children and keeping their mothers alive by 2030, establish a working group under the Ministry of Health of Ukraine to prepare for the validation of mother-to-child transmission of HIV and syphilis in Ukraine and develop an effective action plan;*
- *– To improve and strengthen the monitoring and evaluation system of the PMTCT by amending the MOH Order # 612 of 03.08.2012 and deployment of an electronic instrument for PMTCT program activities monitoring;*
- *– provide control over the development and implementation of local protocols of primary, secondary (specialized) and tertiary (highly specialized) medical care "Prevention of mother-to-child transmission of HIV" in the regions, based on the Unified clinical protocol of medical care (UCPMC), approved by the order of the Ministry of Health of Ukraine dated May 16, 2016, No. 449. ;*

- – *systematically analyze the PMTCT M&E data and monitor the progress of the key indicators of the PMTCT program in order to develop a strategic plan of action to overcome the vertical HIV transmission in Ukraine;*
- – *to increase and improve the level of knowledge of medical workers in the area of vertical transmission prevention through seminars – meetings, trainings, conferences on PMTCT for various specialists at different organizational levels: medical workers (obstetric, pediatric, narcological services, laboratory staff, teachers of medical departments of higher educational institutions and medical colleges), social workers, psychologists of social services.*

In order to improve ART monitoring system it is recommended to:

- *Develop and implement in practice protocols, tools and algorithms for assessing the individual adherence of HIV-infected patients to care and support and ART;*
- *Develop and implement a plan for the training of specialists in public health at all levels and forms of ownership, including medical staff, on aspects of monitoring of ART patients. Monitor the omissions of scheduled visits, monitor early manifestations of adverse reactions, increase adherence to therapy, etc .;*
- *Simplify and reduce the volume of paper-based accounting documents by accelerating the introduction of electronic accounting and reporting forms with the possibility to automatically generate approved reporting forms;*
- *Provide systematic professional development and topical training of persons responsible for monitoring of ART, dispensing and remaining stocks of ARVs, etc., for work with electronic accounting and reporting forms, including data processing in Excel.*

In order to strengthen the laboratory component it is recommended to:

- *Make efforts to ensure sustainable financing of the country's needs for the procurement of laboratory equipment and medical goods, necessary for high-quality and reliable HIV infection research;*
- *Develop training programs and trainings on HIV-infection laboratory management for laboratory specialists with higher and secondary medical education in order to improve their qualifications with the assistance of international experts;*
- *Improve the interagency and inter-sectoral coordination mechanisms in quality management of laboratory research in the field of HIV/AIDS.*

In order to improve pharmaceutical management while receiving and storage of ARVs, medical goods and ART provision:

- *Constantly monitor the situation with the stocks of ARVs, medical goods (test systems, reagents, etc.) at the national level for the purpose of making managerial decisions. To prepare timely plans of ARV drugs redistribution (provided that respective letters are*

submitted by the health departments of regional state administrations and if there is a capacity to do so);

- *Carry out continuous national level monitoring of the shelf life of ARVs and medical goods, monitoring their targeted and reasonable use.*

On the regional level:

I. Health care departments (divisions) of oblast (city) state administrations

To improve epidemiological monitoring system:

- *Facilitate the establishment and strengthening of linkages between the regional AIDS prevention and control service, other services of different specializations (phthisiatric, narcolological, dermatovenerological, transfusiological, pathoanatomical, etc.), the non-governmental sector, and the Penitentiary Service institutions by developing at the regional level the relevant normative framework, holding meetings, working sessions on improving the quality and completeness of regional HIV/AIDS data and timely enrolment of HIV-positive people under medical supervision and care in the region;*
- *Control the reliability of the data and objectively evaluate the indicators characterizing HIV epidemic situation in the region;*
- *Consider at the panel meeting the HIV/AIDS epidemic situation, organization and provision of medical care to HIV-infected people and AIDS patients in the oblast every year until March 1. To inform the State Establishment "Center for Public Health of the Ministry of Health of Ukraine" about the completed activities till April 1;*
- *Provide funding to cover purchasing of test systems for MARPs cohort (PWID, SWs, MSM, STI patients);*
- *Promote the introduction of efficient donor selection practices in the donor service practice with a view to exclude persons at risk of HIV from the donor cohort;*
- *If HIV infection via donor blood components or products is suspected, immediately initiate an epidemiological investigation engaging national level specialists.*

In order to strengthen the laboratory component it is recommended to:

- *Provide timely professional training for the required number of specialists working in the field of HIV/AIDS, in particular specializing in Virology ("Microbiology", "Bacteriology") and to work out effective ways of cooperation with postgraduate education institutions for doctors and nurses;*
- *Establish effective communication and organizational relationships between HCFs carrying out analysis for CD4 lymphocytes using Alere PIMA™ Portable Analysers, and CSOs, including mobile clinics.*

To improve HIV counseling and testing it is recommended to:

- *Organize topical training on HIV CT for the specialists of the HCFs who conduct counseling and testing for HIV infection;*
- *Implementation of the HIV CT surveillance at the regional level.*

In order to enhance the efficiency of PMTCT measures it is recommended to:

- *Ensure the implementation of local protocols of primary, secondary (specialized) and tertiary (highly specialized) medical care "Prevention of mother-to-child transmission of HIV" on the basis of the UCPMC, approved by the order of the Ministry of Health of Ukraine No. 449 dated May 16, 2016 in the relevant regional HCFs;*
- *Provide HCFs with milk formulas for infants born to HIV-infected women;*
- *Facilitate the interaction between the HCFs and the non-governmental sector in order to improve the quality of socio-psychological support and patronage of HIV-infected pregnant women, mothers and their children;*
- *In cases of death of children with unknown HIV-status born to HIV-infected women, to ensure the compliance with the Order of the Ministry of Health of Ukraine dated May 12, 1992 No. 81 "On the Development and Improvement of the Forensic Service in Ukraine", as amended by the Order of the Ministry of Health of Ukraine of 16.08 . 1996 d. No. 266 concerning the postmortem diagnostics of a child in order to clarify the diagnosis of HIV infection;*
- *Monitor and objectively evaluate the indicators that characterize the state of implementation of actions to prevent mother-to-child transmission of HIV;*
- *Intensify preventive measures in cooperation with obstetric and gynecological services in order to prevent the transmission of HIV to women during pregnancy by developing relevant regulations, holding joint meetings, working meetings, etc .;*
- *Extend counseling and family planning services for women of reproductive age to prevent HIV infection and proper contraception, to integrate such services into prevention programs for the youth;*
- *Promote the implementation of information and education programs among the population of reproductive age on the prevention of HIV infection and the adherence to healthy lifestyle, especially among adolescents and young people.*

In order to improve ART monitoring system it is recommended to:

- *Strengthen control over the timely collection of ART reporting documents (reporting forms №56 and №57) from ART sites of the region and submission of aggregated data to the national level. ART sites should ensure the availability of properly completed hardcopy originals of the reporting forms;*
- *Check the reliability of data on distribution of patients by lines, including review of the medical records of ART patients receiving 2-nd and 3-rd line ART regimens regarding the existence of*

relevant criteria (when comparing reporting data similar across regions with similar HIV situation there appear quite different patient proportions on 2-nd and 3-rd line ART regimens);

- *Establish responding to all cases of adverse reactions (hereinafter referred to as "ARs") that led to the replacement of the ART regimen and the submission of AR notification cards (Form N 137/o) (according to reporting form No. 57, there is a significantly greater number of cases of replacement of ART regimens than the number of AR reports submitted). There is a need to improve the record of adverse reactions cases and/or lack of efficacy of the medication when it is used for medical purposes;*
- *Clarify the number of patients having indications to initiate ART, taking into account "Changes to the Clinical Protocol for ART in adults and adolescents, the Order of the Ministry of Health of Ukraine dated 22.12.2015 No. 887; in the reporting form No. 56 (Table 1000, column 2) and indicate the actual number of people requiring but not receiving ART (according to the reporting form No. 56, the coverage rates of ART do not correspond (and are significantly lower) to the ART coverage of active dispensary group);*
- *Establish systematic checking of identical data submitted in various reporting forms (in the course of data reconciliation between the reporting form No. 56 and the electronic instrument for the accounting of ARVs discrepancies by regimens are found in the number of persons receiving ART);*
- *Ensure the balance of drugs in the ART regimens, in accordance with the established ARV ratios. When prescribing ART startup regimens for PEPFAR patients, the ratios of available ARVs should be maintained.*
- *Carry out a regular assessment of the need for further decentralization of ART within the region, taking into account the epidemiological and territorial specifics of the districts of the region, and with appropriate training of specialists of newly established ART sites.*

In order to ensure further development of the OST programs it is recommended to:

- *Provide coordination and inter-departmental cooperation between the HCFs, the AIDS Center, the TB dispensary and other state institutions and structures that provide medical and psychosocial support for OST clients. To establish cooperation with non-state organizations of the region, promote the integration of services for OST clients in order to further develop OST in the field, increase the effectiveness of OST implementation for patients with opioid dependence;*
- *Optimize and balance the system of OST drugs deliveries in accordance with national supply schedules and based on the maximum storage volumes of narcotic drugs in pharmacies (three months stock) and in the HCFs (one month stock), if necessary, to promote the approval of orders on adjusting the appropriate storage stock volumes;*
- *Introduce timely amendments to the relevant regional orders for the purpose of rational distribution of OST drugs and performance of target indicators from a group of patients within the region.*

In order to improve pharmaceutical management while receiving and storing ARV medicines and medical goods, as well as ART provision:

- *Continuously monitor the status of ARVs and medical goods stock at the regional level, with a view to adopt appropriate managerial decisions;*
- *Health care subdivisions of regional state administrations should prepare timely letters on the need for redistribution of ARVs and medical goods;*
- *Carry out continuous monitoring of the suitability of ARVs and medical goods and to control their targeted and reasonable use;*
- *Ensure control over compliance with the drugs storage rules in the regional AIDS Centers, especially the proper temperature regime and relative humidity of air in the drugs storage premises;*
- *Ensure control over proper primary accounting records keeping in the regional AIDS Centers in accordance with the order of the Ministry of Health of Ukraine dated March 21, 2012 No. 182 "On Approval of Primary Accounting and Reporting Forms on Monitoring the Treatment of HIV-Infected Persons and Filling Guidelines" .*

II. Regional AIDS Centers**In order to improve epidemiological monitoring system it is recommended to:**

- *Strengthen data verification measures and improve the quality of data submitted to the national level (all regional AIDS Centers);*
- *Ensure compliance with the legislative requirements regarding the confidentiality of information about HIV testing results, compliance with the rules on proper storage of confidential information and protection against disclosure of data that constitute medical secret (all regional AIDS Centers);*
- *Initiate an increase in the proportion of persons screened for HIV among the MARPs cohort (HIV, SWs, MSM, STI patients) among the total number of screened persons (except for donors and pregnant women) as groups driving further development of the HIV epidemic (AIDS Centers in Vinnytsya, Volyn, Zhytomyr, Zakarpattya, Zaporizhya, Ivano-Frankivsk, Kirovohrad, Luhansk, Poltava, Rivne, Ternopil, Kherson, Chernivtsi, Chernihiv oblasts);*
- *Work on attracting persons who had sexual contacts with HIV-infected persons to preventive screening for HIV (all regional AIDS Centers). To pay attention to the high prevalence of HIV by code 101, in comparison with the similar average indicator over the country (more than 13.5%), to analyze indicators at the subregional level and to strengthen measures on prevention of sexual transmission of HIV (AIDS Centers in Vinnytsya, Donetsk, Zhytomyr, Zakarpattya, Ivano-Frankivsk, Kirovohrad, Mykolayiv, Odessa, Ternopil, Kharkiv, Chernivtsi, Chernihiv oblasts and Kyiv);*

- *Promote the introduction of efficient donor selection practices in the donor service in order to exclude persons at risk of HIV from among the donor group (all regional AIDS centers). To analyze the high regional indicators of HIV infection among primary blood and blood components donors (code 108.1) and the reasons for their exceeding the average country level (more than 0.15%) (regional AIDS Centers of Dnipropetrovsk, Donetsk, Zhytomyr, Kirovohrad, Luhansk, Mykolayiv, Odesa, Cherkasy, Chernihiv oblasts);*
- *Analyze cases of detection of HIV-positive persons among donors across the region, introduce measures for the disposal of quarantined potentially HIV-infected plasma (all regional AIDS Centers);*
- *In case of suspected HIV acquiring through donor blood products or components, immediately initiate an epidemiological investigation engaging national level specialists. The materials and conclusions of the epidemiological investigation should be provided to the Center for Public Health of the Ministry of Public Health of Ukraine (all regional AIDS Centers);*
- *Carry out an audit of all cases of HIV-positive pregnant women detection while re-screening for HIV (codes 109.2, 109.3) and to intensify preventive measures in cooperation with obstetric and gynecological services in order to prevent HIV infection of women during pregnancy (all regional AIDS Centers);*
- *Initiate HIV testing for all healthcare professionals who were registered as having been exposed to blood or biological materials of a person or to contaminated tools, equipment or objects during their professional duties. Ensure compliance with the requirements of the Order of the Ministry of Health of Ukraine No. 148 dated 17.03.15. if the connection of HIV infection with workplace exposure is confirmed (all regional AIDS Centers);*
- *Strengthen work on the completeness of registration of new HIV cases and to implement measures to increase the coverage of HIV-positive persons with enrolment for medical supervision and care (not less than 75%) by ensuring the implementation of high-quality HIV/AIDS-related HIV CT, efficient referral of HIV-positive persons from NGOs/HCFs/ outpatient facilities/polyclinics to the AIDS prevention and care institutions (regional AIDS Centers of Vinnytsya, Donetsk, Zhytomyr, Ivano-Frankivsk, Kirovohrad, Odesa, Khmelnytsky, Chernivtsi oblasts and Kyiv);*
- *Take actions on the timely enrolment of HIV-infected persons for care and to prevent the late detection of HIV infection. To pay attention to the high proportion of people with HIV clinical stages III-IV and/or with immunosuppression <350 cells/ μ l CD4 among the first registered cases of HIV infection (over 55%) (regional AIDS Centers in Vinnytsya, Volyn, Dnipropetrovsk, Zakarpattya, Mykolayiv, Odessa, Kharkiv, Kherson, Khmelnytsky, Chernihiv oblasts and Kyiv);*
- *Intensify measures to revitalize and improve the quality of medical supervision and care for HIV-infected persons. Pay attention to the low percentage of patients on active HIV management within the group of registered HIV-infected persons (up to 80%) (Dnipropetrovsk, Donetsk, Lviv, Mykolayiv, Odesa, Poltava, Sumy, Kherson, Khmelnytsky, Chernihiv oblasts);*

- *Draw attention to the high proportion of people aged 15-24 among new HIV infections compared to the corresponding average figures in Ukraine (more than 5.2%) and to promote the primary prevention of HIV infection aimed at changing the risky behaviors among adolescents and young people (regional AIDS Centers in Vinnytsya, Zhytomyr, Zakarpattya, Ivano-Frankivsk, Kirovohrad, Lviv, Poltava, Rione, Ternopil, Kharkiv, Cherkasy oblasts and Kyiv);*
- *Strengthen the work on primary prevention of HIV infection among the rural population at the subregional level. Pay attention to an increase in the proportion of new HIV cases among the village residents (regional AIDS Centers in Ivano-Frankivsk, Kirovohrad, Poltava, Sumy, Kharkiv, Khmelnytskyi oblasts);*
- *Minimize the number of HIV infections with uncertain HIV transmission mode through ensuring the quality of post-test counseling and increasing the effectiveness of epidemiological investigations, including cases of official postmortem registration of HIV-infected persons (regional AIDS Centers in Donetsk, Kyiv, Mykolayiv, Sumy oblasts and Kyiv city);*
- *Ensure systematic analysis of the statuses and illnesses of HIV-infected persons enrolled for medical supervision and submission of reliable regional reporting data to the national level (all regional AIDS Centers);*
- *Systematically verify and exchange data during the year between the AIDS service and the TB service. To pay attention to the substantiation of the revealed discrepancies between the reports of the two services regarding first diagnosed cases of HIV/TB co-infection and first diagnosed in regional reports (all regional AIDS Centers);*
- *Orient the work of both services to early detection of HIV and TB, timely treatment of both illnesses, decrease of TB/HIV mortality and efficient prevention of the spread of these infections among the general population. Ensure extensive informing and encouraging of patients to get screened for HIV antibodies and TB in the HCFs of both services, along with the provision of quality counseling services (all regional AIDS Centers);*
- *Provide medical examination of HIV-infected persons aged 15 years and older who were enrolled for medical supervision and care for the first time in their life to determine the absolute or relative CD4 count (at least 90%), markers of viral hepatitis (at least 80%) (all regional AIDS Centers);*
- *Submit explanations regarding HIV-positive children identified on the basis of epidemiological and clinical findings, as well as about fatal cases among children to the State Establishment "Center for Public Health of the Ministry of Health of Ukraine" (all regional AIDS Centers);*
- *Prevent untimely registration and registration of children born to HIV-infected mothers. Carry out a case study of each established negative HIV test result in a child immediately after birth from an HIV-infected mother (all regional AIDS Centers);*
- *Ensure that all children under 14 enrolled on the medical supervision and care on HIV infection are having medical examination at least once in a reporting year and include them*

in the active medical supervision group while reporting routine HIV epidemiological surveillance (all regional AIDS Centers);

- *Regularly reconcile HIV/AIDS reporting data with the responsible specialists of penitentiary institutions and pre-trial detention centers subordinated to the Ministry of Justice of Ukraine during the year. Ensure the formation of reporting data on interregional penitentiary and probation departments of the Ministry of Justice of Ukraine in accordance with the requirements of the Order of the Ministry of Health of Ukraine No. 180 dated 05.03.13 (all regional AIDS Centers);*
- *Strengthen the coordinating role of the regional AIDS Centers in the establishment of timely coverage of HIV-positive persons by medical registration in correctional institutions, pre-trial detention facilities subordinated to the Ministry of Justice of Ukraine, timely exchange of information with other regions regarding HIV-infected persons who change their place of residence compliant to the respective normative framework, with the purpose of prevention of double/overlapping registration of HIV-infected persons (all regional AIDS Centers);*
- *Monitor compliance with the requirements of the orders of the Ministry of Health of Ukraine dated 05.03.2013, No. 180 "On Approval of Forms of Primary Accounting Documentation and Reporting on Monitoring the HIV Epidemic Situation and Instructions for their Filing", dated 03.12.2015, No. 816 "On Amendments to the Order of the Ministry of Health of Ukraine of No. 180 dated 05.03.2013" and to systematically analyze the reasons for the discharging at the regional (local) level (all regional AIDS Centers);*
- *Prevent the practice of ungrounded de-registration of HIV-infected individuals from medical supervision, in order to reach the full coverage of HIV-infected persons with medical supervision, and to obtain a more realistic assessment of the prevalence of HIV and AIDS according to the epidemiological surveillance data (all regional AIDS Centers);*
- *At subregional level develop and implement actions to improve the quality of medical supervision and epidemiological surveillance for HIV-infected persons. To prevent the de-registration of HIV-infected persons because their location is unknown and to minimize the number of patients who have been lost to follow-up for the HCFs for more than 5 years (regional AIDS Centers in Zakarpattya, Zaporizhyya, Kyiv, Kirovohrad, Lviv, Mykolayiv, Odesa, Kherson, Khmelnytsky, Cherkasy oblasts and Kyiv city);*
- *Include in the reporting forms of HIV epidemic situation monitoring the data about persons arriving from other regions, countries and departing from the region in accordance with the requirements of the Order of the Ministry of Health of Ukraine No. 180 dated 05.03.13. Do not include migration of HIV-infected persons within the oblast in the regional report. Provide clarifying information on the number of convicts who migrated during the reporting year within the oblast and were included in the regional report (column 6 of tables 2000 and 2001 form No. 2-HIV/AIDS) (all regional AIDS Centers);*

- *Ensure compliance with the Algorithm of actions when referring a HIV-infected patient for medical supervision between AIDS centers of different regions and the Algorithm of actions when registering a person with a previously established diagnosis of HIV infection in the AIDS service facility in another region under the patient's own request, as set forth in the letter of the Ukrainian center for Socially Dangerous Diseases Control dated 06.06.2015 No. 1331 (Annexes 3, 4 to the letter) (all regional AIDS Centers);*
- *Strengthen interaction with phthisiatric, pathoanatomical services and forensic medical examination for the exchange and verification of data on the causes of death of HIV-infected persons, in particular, formulating a joint opinion on the cause of death from HIV/TB co-infection or directly from TB (all regional AIDS Centers);*
- *Take actions to minimize the number of deaths with unspecified causes, ensure the availability of copies of medical record forms (final death certificate (forms No. 106/0, No. 106-1/0, No. 106-2/0) and/or the postmortem examination protocol (form No. 013/o), Extract from the expert opinion, the Act of forensic research (Form number 171/o)) confirming the disease (pathological condition), which became the direct cause of death and indicated in the form No. 502-2/o (all regional AIDS Centers).*

In order to improve the laboratory component:

- *The directors of Vinnytsya, Dnipropetrovsk, Poltava, Rivne, Kharkiv, Kherson, Cherkasy, Kryvyi Rih and Mariupol city AIDS Centers should immediately resolve the issue of staffing the HCF laboratories with the specialists qualified to provide molecular genetic research;*
- *Strengthen the methodological, educational, control and analytical function of the laboratories of the regional AIDS Centers.*

In order to ensure further development of OST programs:

- *Approximate the average dosage of OST patients to the recommended dose for methadone hydrochloride (tablets and oral solution) – 100 mg/day for the patient, for buprenorphine hydrochloride (sublingual tablets) – 12 mg/day for the patient. If it is not possible to adjust doses to the average recommended dosage within the institution, contact the health departments to make changes to the relevant regional orders and ensure the coverage of OST drugs shortage due to savings in other HCFs within the region (Kharkiv oblast, Kyiv city).*

In order to enhance the PMTCT activities:

- *Carry out routine HIV testing of male partners of HIV-infected pregnant women to detect discordant pairs and immediately initiate ART for all HIV-positive members of discordant couples identified during pregnancy (all regional AIDS Centers).*
- *Take actions on the timely registration of HIV-infected pregnant women medical supervision with the purpose of PMTCT prescription (Vinnytsya, Dnipropetrovsk, Donetsk, Ivano-Frankivsk, Kiev, Odesa, Kherson regions);*

- *Intensify PMTCT among pregnant women who became infected with HIV as a result of injecting drug use (Volyn, Dnipropetrovsk, Donetsk, Zaporizhyya, Kyiv, Kirovohrad, Lviv, Odesa, Poltava, Kharkiv, Khmelnytskyi oblasts, Kyiv city);*
- *Establish cooperation between obstetrician-gynecologists and narcologists on joint medical observation of HIV-infected pregnant women who inject drugs;*
- *Set up a consistent interaction of obstetric and pediatric services with HIV-service NGOs, to develop the procedure and to ensure the effectiveness of the referral system of HIV-positive women from risk groups to AIDS centers in order to be registered for medical supervision and to form an adherence to antiretroviral treatment;*
- *Pay attention to the high proportion of HIV-infected pregnant women who were delivered to the obstetric hospital in the first, intense period of childbirth and postpartum (more than 30%), to intensify cooperation with the obstetric service regarding timely hospitalization of HIV-infected mothers in accordance with the current legislation (Vinnytsya, Dnipropetrovsk, Donetsk, Zhytomyr, Zaporizhyya, Kyiv, Kirovohrad, Lviv, Mykolayiv, Odesa, Kherson, Cherkasy, Chernihiv oblasts, Kyiv city);*
- *Extend the implementation of obstetric practice for conducting elective caesarean sections in HIV-infected pregnant women in order to reduce mother-to-child transmission of HIV in accordance with international standards and recommendations (Vinnytsya, Dnipropetrovsk, Zakarpattya, Kyiv oblast, Zaporizhyya, Kirovohrad, Luhansk, Mykolaiv, Poltava, Ternopil, Kherson, Cherkasy, Chernihiv oblasts, Kyiv city);*
- *Strengthen measures to exclude breastfeeding and provide formula feeding for children born to HIV-infected women (Crimea, Vinnytsya, Dnipropetrovsk, Donetsk, Zakarpattya, Zaporizhyya, Kyiv, Kirovohrad, Luhansk, Mykolaiv, Kherson and Chernihiv oblasts, Sevastopol);*
- *Ensure the timely laboratory diagnostics of HIV infection by PCR and ELISA/IB methods of children born to HIV-infected mothers, in accordance with the current legislation (Crimea, Volyn, Donetsk, Kyiv, Luhansk, Kharkiv oblasts, Sevastopol);*
- *Establish an effective partnership: inter-sectoral – between medical services (obstetric, pediatric, narcological, etc.) and interdepartmental – between medical and social services to provide effective medical and social support for HIV-infected women during pregnancy, childbirth and postpartum (all regional AIDS Centers);*
- *Improve cooperation with social services for working with HIV-infected pregnant women from socially unadapted families at the antenatal stage and immediately after childbirth (all regional AIDS Centers);*
- *Improve obstetric practices based on the principles of mother and child well-being, including assisting HIV-positive women in childbirth and after childbirth. Work on reducing the level of stigmatization of HIV-infected parents and their children who refuse to undergo examination and medical registration of a child at the AIDS Center (all regional AIDS Centers);*

- *Carry out an analysis of each case of HIV infection among children born to HIV-infected women, send the results of the investigation to the State Establishment " Center for Public Health of the Ministry of Health of Ukraine" in accordance with the requirements of the Order of the Ministry of Health of Ukraine No. 612 of 03.08.2012 (all regional AIDS Centers);*
- *Ensure control over the deaths of children with unknown HIV status and conduct their postmortem examination in order to clarify the diagnosis of HIV infection (all regional AIDS Centers);*
- *Carry out data reconciliation for HIV-infected pregnant women and children born to HIV-infected women, according to the reporting forms by the Ministry of Health of Ukraine (Ministry of Health of Ukraine No. 180 dated 05.03.13) and monitoring of PMTCT activities (Ministry of Health of Ukraine Order No. 612 dated 03.08.2012) (all regional AIDS Centers).*

III. State Penitentiary and Probation Service of Ukraine

- *Harmonize the health care policy in prisons with the national health policy and ensure that the health services of the Penitentiary and Prison Service facilities are of the same quality and level as in the civilian sector;*
- *Expand the scope of programs to prevent HIV infection in the Penitentiary and Prison Service facilities and to take comprehensive measures to prevent HIV;*
- *Improve conditions for the detention of prisoners and other reforms of the Penitentiary and Prison Service facilities;*
- *Strengthen cooperation between specialists of the institutions of the Ministry of Internal Affairs of Ukraine and the regional AIDS Service of Ukraine units;*
- *Implement measures aimed at conducting regular continuous medical surveillance for HIV-infected patients in order to improve the quality and extend the life expectancy of patients;*
- *Introduce OST in Penitentiary and Prison Service facilities;*
- *Start implementation of the health information system "HIV-infection in Ukraine" in the Penitentiary and Prison Service of Ukraine facilities;*
- *Develop guidelines on the HIV epidemic situation M&E which will include the Algorithms of patients transfer between the Penitentiary and Prison Service facilities and from the Penitentiary and Prison Service facilities to the AIDS service facilities;*
- *Strengthen the research and analytical capacity in order to obtain up-to-date and reliable epidemiological surveillance data for making strategic decisions in the HIV area (special research, forecasting of the situation, etc.).*

ANNEX

Table 1. Results of HIV prevalence seroepidemiological monitoring based on the results of serologic diagnostics in Ukraine in 2016¹

Codes	Cohorts of persons screened for HIV	Screened ² persons	Detected ³ HIV+ persons	%
100	Citizens of Ukraine – total, including by specific codes:	2 343 383	23 174	0.99
101	persons who had sexual contacts with HIV-infected persons	12 374	1 674	13.53
102	people who inject drugs	163 567	2 309	1.41
103	persons who had homosexual contacts with persons whose HIV status in unknown	33 816	368	1.09
104	persons with STI symptoms or diseases	40 103	422	1.05
105	persons with risky sexual behavior	115 784	1 493	1.29
106	conscripts and applicants to military educational establishments	107 510	387	0.36

Codes	Cohorts of persons screened for HIV	Screened ² persons	Detected ³ HIV+ persons	%
107	persons from other groups at risk of HIV, screened for epidemiological indications	37 758	399	1.06
108	donors	613 410	578	0.09
109.1	pregnant women	412 653	1 314	0.32
111	children born to HIV-infected mothers screened to established final HIV diagnosis aged 18 months and older	2 902	28	0.96
112	prisoners	28 991	1 228	4.24
113	persons having diseases, symptoms and syndromes which are indications for suggesting counseling and testing services of a person seeks medical assistance at a healthcare facility	291 140	6 303	2.16
114	persons screened anonymously	32 494	988	3.04
115	persons at risk of HIV infection caused by medical interventions, screened under epidemiological indications	1 215	0	0
116	persons screened on their own initiative	446 102	2 794	0.63
119	deceased persons	797	93	11.67

¹not including data from the AR of Crimea and ATO area

² number of persons screened for HIV antibodies by serological diagnostics with EIA methods (EIA, RT)

³ number of persons in whom serological markers of HIV were detected during confirmatory serological analysis (EIA, IB), including verification examinations with 2 RT in separate cases according to the Decree of the MoH of Ukraine dated 21.12. 2010 No. 1141, in particular: in healthcare facilities providing HIV counseling and testing services; in maternity clinics while screening women with unknown HIV status in order to prescribe ARV prevention of vertical transmission; while screening persons in prisons to establish their HIV status.

Table 2. Results of HIV prevalence seroepidemiological monitoring based on the results of rapid testing (RT) in Ukraine in 2016¹

Codes	Cohorts of persons screened for HIV	Screened ² persons	testing structure by screening cohorts, %	% of the total number of screened people under the specific code
100	Citizens of Ukraine – total ³ , including by specific codes	402 601	100	17.2
101	persons who had sexual contacts with HIV-infected persons	6 235	1.5	50.4
102	people who inject drugs	149 352	37.1	91.3
103	persons who had homosexual contacts with persons whose HIV status in unknown	33 401	8.3	98.8
104	persons with STI symptoms or diseases	8 726	2.2	21.8
105	persons with risky sexual behavior	55 730	13.8	48.1
107	persons from other groups at risk of HIV, screened for epidemiological indications	9 769	2.4	25.9
109.1	pregnant women screened for the first time regardless of the pregnancy term	6 286	1.6	1.5
109.2	pregnant women repeatedly screened while the first screening under code 109.1 was negative	6 115	1.5	1.6

Codes	Cohorts of persons screened for HIV	Screened ² persons	testing structure by screening cohorts, %	% of the total number of screened people under the specific code
112	prisoners	25 329	6.3	87.4
113	persons having diseases, symptoms and syndromes which are indications for suggesting counseling and testing services of a person seeks medical assistance at a healthcare facility including those screened in:	52 177	13.0	17.9
113/tbc	<i>HCFs providing medical assistance to persons with TB</i>	15 591	3.9	37.5
113/inf	<i>infectious diseases HCFs</i>	8 014	2.0	26.0
113/in	<i>HCFs of other profiles</i>	28 572	7.1	13.1
114	persons screened anonymously	5 992	1.5	18.4
116	persons screened on their own initiative	37 336	9.3	8.4

¹ not including data from the AR of Crimea and ATO area

² number of persons screened by rapid tests in non-governmental organizations, healthcare facilities, prisons, except for screenings within the framework of biobehavioral studies

³ under the complete seroepidemiological monitoring list

Continuation of Table No. 2

Codes	Cohorts of persons screened for HIV	Detected⁴ HIV+ persons	structure of positive results by screening code, %	% of the total number of detected HIV= persons under the respective code
100	Citizens of Ukraine – total ⁵ , including by specific codes	3 907	100.0	16.9
101	persons who had sexual contacts with HIV-infected persons	456	11.7	27.2
102	people who inject drugs	852	21.8	36.9
103	persons who had homosexual contacts with persons whose HIV status in unknown	199	5.1	54.1
104	persons with STI symptoms or diseases	70	1.8	16.6
105	persons with risky sexual behavior	403	10.3	27.0
107	persons from other groups at risk of HIV, screened for epidemiological indications	53	1.4	13.3
109.1	pregnant women screened for the first time regardless of the pregnancy term	78	2.0	5.9
109.2	pregnant women repeatedly screened while the first screening under code 109.1 was negative	2	0.1	6.9

Codes	Cohorts of persons screened for HIV	Detected ⁴ HIV+ persons	structure of positive results by screening code, %	% of the total number of detected HIV= persons under the respective code
112	prisoners	494	12.6	40.2
113	persons having diseases, symptoms and syndromes which are indications for suggesting counseling and testing services of a person seeks medical assistance at a healthcare facility	1 038	26.6	16.5
113/tbc	including those screened in: <i>HCFs providing medical assistance to persons with TB</i>	286	7.3	20.5
113/inf	<i>infectious diseases HCFs</i>	197	5.0	20.6
113/in	<i>HCFs of other profiles</i>	555	14.2	14.0
114	persons screened anonymously	61	1.6	6.2
116	persons screened on their own initiative	168	4.3	6.0

⁴ number of persons in whom serological markers of HIV were detected during confirmatory testing by 2 rapid tests according to the Order of the MoH of Ukraine dated 21.12.2010 No. 1141

⁵ under the complete seroepidemiological monitoring list

Table 3. Results of seroepidemiological monitoring of HIV prevalence among donors in 2016¹

Regions	Donors, total Code 108			Primary (one-time) donors code 108.1		
	screened	positive	%	screened	positive	%
Ukraine	613 410	578	0,09	376 677	549	0,15
Vinnitsya oblast	16 892	4	0.02	14 155	4	0.03
Volyn oblast	25 527	18	0.07	23 450	18	0.08
Dnipropetrovsk oblast	67 928	113	0.17	38 094	109	0.29
Donetsk oblast	28 867	46	0.16	17 750	42	0.24
Zhytomyr oblast	12 288	15	0.12	7 888	15	0.19
Zakarpattya oblast	13 363	7	0.05	13 013	7	0.05
Zaporizhya oblast	42 082	28	0.07	18 589	26	0.14
Ivano-Frankivsk oblast	17 728	17	0.10	13 932	16	0.11
Kyiv oblast	15 388	5	0.03	10 947	5	0.05
Kirovohrad oblast	11 065	20	0.18	7 518	20	0.27
Luhansk oblast	12 052	6	0.05	2 113	4	0.19
Lviv oblast	26 120	17	0.07	24 357	17	0.07
Mykolayiv oblast	29 494	42	0.14	17 716	38	0.21
Odesa oblast	31 829	63	0.20	22 965	63	0.27
Poltava oblast	17 892	13	0.07	9 060	13	0.14
Rivne oblast	12 742	10	0.08	6 794	9	0.13
Sumy oblast	47 746	6	0.01	8 585	4	0.05
Ternopil oblast	11 912	7	0.06	4 561	4	0.09
Kharkiv oblast	31 991	17	0.05	29 278	17	0.06
Kherson oblast	12 885	10	0.08	6 240	9	0.14
Khmelnyskyi oblast	33 067	25	0.08	22 187	25	0.11
Cherkasy oblast	15 484	27	0.17	10 441	26	0.25
Chernivtsi oblast	10 301	4	0.04	3 933	4	0.10
Chernihiv oblast	14 677	16	0.11	7 977	13	0.16
Kyiv city	54 090	42	0.08	35 134	41	0.12

¹ not including data from the AR of Crimea and ATO area

Table 4. Results of seroepidemiological monitoring of HIV prevalence among pregnant women in 2016¹

Regions	Pregnant women (primary screening) code 109.1			Pregnant women aged 15-24 codes 109.1.1 + 109.1.2			Pregnant women (second screening) code 109.2		
	screened	positive	%	screened	positive	%	screened	positive	%
Ukraine	412 653	1 314	0.32	112 359	283	0.25	377 316	29	0.01
Vinnitsya oblast	15 669	23	0.15	5 019	2	0.04	14 399	0	0
Volyn oblast	13 259	15	0.11	4 729	1	0.02	12 226	0	0
Dnipropetrovsk oblast	36 418	189	0.52	11 405	52	0.46	26 902	3	0.01
Donetsk oblast	15 033	135	0.90	2 952	14	0.47	12 666	5	0.04
Zhytomyr oblast	13 039	47	0.36	4 105	14	0.34	11 689	5	0.04
Zakarpattia oblast	17 602	12	0.07	4 352	4	0.09	10 834	0	0
Zaporizhya oblast	17 694	37	0.21	4 360	0	0	15 555	2	0.01
Ivano-Frankivsk oblast	19 899	10	0.05	7 191	6	0.08	15 492	1	0.01
Kyiv oblast	13 371	64	0.48	5 071	18	0.35	17 697	1	0.01
Kirovohrad oblast	9 954	42	0.42	632	15	2.37	8 912	0	0
Luhansk oblast	4 909	20	0.41	958	2	0.21	4 483	0	0
Lviv oblast	26 991	39	0.14	9 537	12	0.13	26 061	0	0

Regions	Pregnant women (primary screening) code 109.1			Pregnant women aged 15-24 codes 109.1.1 + 109.1.2			Pregnant women (second screening) code 109.2		
	screened	positive	%	screened	positive	%	screened	positive	%
Mykolayiv oblast	11 246	59	0.52	2 642	15	0.57	10 686	1	0.01
Odesa oblast	28 657	188	0.66	8 409	48	0.57	27 351	3	0.01
Poltava oblast	13 255	31	0.23	3 750	7	0.19	12 882	2	0.02
Rivne oblast	16 803	17	0.10	3 217	4	0.12	16 627	0	0
Sumy oblast	8 964	16	0.18	3 274	4	0.12	12 295	0	0
Ternopil oblast	10 196	10	0.10	4 647	3	0.06	9 267	0	0
Kharkiv oblast	26 813	51	0.19	6 427	10	0.16	22 682	0	0
Kherson oblast	11 455	42	0.37	3 570	13	0.36	9 823	2	0.02
Khmelnytskyy oblast	13 907	22	0.16	4 627	7	0.15	11 670	0	0
Cherkasy oblast	11 982	36	0.30	3 026	9	0.30	10 284	1	0.01
Chernivtsi oblast	11 505	11	0.10	2 366	0	0	10 065	1	0.01
Chernihiv oblast	8 956	38	0.42	1 661	7	0.42	9 678	1	0.01
Kyiv city	35 076	160	0.46	4 432	16	0.36	37 090	1	0.003

¹ not including data from the AR of Crimea and ATO area

Table 5. Percentage of persons screened for HIV and detected HIV-positive persons from the most-at-risk populations (MARPs) under codes 101.2, 102, 103, 104 and 105.2 From the total number of screened and detected HIV-positive persons (except for donors and pregnant women) in 20161

Regions	Persons screened for HIV			Persons detected HIV-positive		
	Number of screened persons	Among them the number of screened persons from the MARPs	%	Number of screened persons	Among them the number of screened persons from the MARPs	%
Ukraine	1 317 320	265 308	20.1	21 253	3 154	14.8
Vinnytsya oblast	30 344	3 544	11.7	394	56	14.2
Volyn oblast	59 327	3 079	5.2	251	18	7.2
Dnipropetrovsk oblast	139 952	37 069	26.5	3 669	499	13.6
Donetsk oblast	69 580	16 831	24.2	1 846	159	8.6
Zhytomyr oblast	36 055	5 338	14.8	574	80	13.9
Zakarpattia oblast	41 065	1 451	3.5	122	6	4.9
Zaporizhyya oblast	77 413	12 429	16.1	733	108	14.7
Ivano-Frankivsk oblast	30 011	1 662	5.5	215	37	17.2
Kyiv oblast	44 655	11 404	25.5	1 213	395	32.6
Kirovohrad oblast	20 842	1 501	7.2	565	74	13.1
Luhansk oblast	39 648	4 170	10.5	289	39	13.5
Lviv oblast	35 446	9 831	27.7	509	94	18.5
Mykolayiv oblast	55 017	13 493	24.5	1 084	212	19.6

HIV infection in Ukraine

Regions	Persons screened for HIV			Persons detected HIV-positive		
	Number of screened persons	Among them the number of screened persons from the MARPs	%	Number of screened persons	Among them the number of screened persons from the MARPs	%
Odesa oblast	110 522	32 048	29.0	3 089	183	5.9
Poltava oblast	27 808	3 549	12.8	417	66	15.8
Rivne oblast	47 310	4 260	9.0	289	34	11.8
Sumy oblast	29 802	8 193	27.5	239	43	18.0
Ternopil oblast	16 644	2 271	13.6	110	7	6.4
Kharkiv oblast	91 703	18 561	20.2	707	103	14.6
Kherson oblast	39 991	6 678	16.7	593	61	10.3
Khmelnytskyi oblast	29 228	5 832	20.0	261	29	11.1
Cherkasy oblast	65 041	12 721	19.6	606	101	16.7
Chernivtsi oblast	36 820	4 281	11.6	130	18	13.8
Chernihiv oblast	27 536	4 298	15.6	440	56	12.7
Kyiv city	115 560	40 814	35.3	2 908	676	23.2

¹ not including data from the AR of Crimea and ATO area

Table 6. Results of seroepidemiological monitoring of HIV prevalence among most-at-risk populations in 2016¹

Regions	People who inject drugs, 102				Sex workers, 105.2			
	screened		detected	%	screened		detected	%
	total	incl. by rapid tests			total	incl. by rapid tests		
Ukraine	163 567	149 352	2 309	1.4	27 426	26 046	39	0.1
Vinnitsya oblast	2 451	2 198	37	1.5	340	340	6	1.8
Volyn oblast	1 294	1 147	7	0.5	430	413	1	0.2
Dnipropetrovsk oblast	22 040	19 565	388	1.8	2 984	2 973	1	0.0
Donetsk oblast	14 356	12 752	133	0.9	846	254	8	0.9
Zhytomyr oblast	3 692	3 396	59	1.6	576	574	0	0.0
Zakarpattya oblast	505	442	2	0.4	171	166	0	0.0
Zaporizhya oblast	6 685	5 753	87	1.3	700	679	2	0.3
Ivano-Frankivsk oblast	500	205	25	5.0	2	1	2	100.0
Kyiv oblast	9 002	8 646	340	3.8	369	89	6	1.6
Kirovohrad oblast	173	68	46	26.6	6	0	0	0.0
Luhansk oblast	3 741	3 741	38	1.0	12	12	0	0.0
Lviv oblast	6 279	5 650	64	1.0	1 155	1 155	0	0.0

Regions	People who inject drugs, 102				Sex workers, 105.2			
	screened		detected	%	screened		detected	%
	total	incl. by rapid tests			total	incl. by rapid tests		
Mykolayiv oblast	6 716	5 921	178	2.7	2 095	2 082	1	0.0
Odesa oblast	21 538	21 111	114	0.5	4 398	4 397	1	0.0
Poltava oblast	2 249	1 233	51	2.3	299	284	0	0.0
Rivne oblast	2 598	2 310	20	0.8	365	360	0	0.0
Sumy oblast	4 990	4 472	29	0.6	1 097	1 096	0	0.0
Ternopil oblast	994	894	4	0.4	279	279	0	0.0
Kharkiv oblast	9 729	9 150	65	0.7	2 648	2 648	0	0.0
Kherson oblast	4 438	3 939	50	1.1	553	551	0	0.0
Khmelnytskyi oblast	3 559	3 304	11	0.3	610	541	0	0.0
Cherkasy oblast	8 801	8 324	87	1.0	1 285	1 181	0	0.0
Chernivtsi oblast	3 030	2 231	16	0.5	350	350	0	0.0
Chernihiv oblast	2 676	2 396	48	1.8	245	26	1	0.4
Kyiv city	21 531	20 504	410	1.9	5 611	5 595	10	0.2

¹ not including data from the AR of Crimea and ATO area

Continuation of Table No. 6

Regions	Persons who had homosexual contacts, codes 101.2+103				persons with STI symptoms or diseases, 104			
	screened		detected	%	screened		detected	%
	total	incl. by rapid tests			total	incl. by rapid tests		
Ukraine	34 212	33 662	384	1.1	40 103	8 726	422	1.1
Vinnytsya oblast	503	493	8	1.6	250	10	5	2.0
Volyn oblast	353	326	5	1.4	1 002	0	5	0.5
Dnipropetrovsk oblast	3 591	3 540	16	0.4	8 454	2 594	94	1.1
Donetsk oblast	795	779	4	0.5	834	46	14	1.7
Zhytomyr oblast	221	205	2	0.9	849	398	19	2.2
Zakarpattya oblast	12	1	2	16.7	763	413	2	0.3
Zaporizhya oblast	1 993	1 950	9	0.5	3 051	303	10	0.3
Ivano-Frankivsk oblast	12	1	4	33.3	1 148	157	6	0.5
Kyiv oblast	1 300	1 291	33	2.5	733	550	16	2.2
Kirovohrad oblast	1	0	1	100.0	1 321	173	27	2.0
Luhansk oblast	10	10	0	0.0	407	407	1	0.2

Regions	Persons who had homosexual contacts, codes 101.2+103				persons with STI symptoms or diseases, 104			
	screened		detected	%	screened		detected	%
	total	incl. by rapid tests			total	incl. by rapid tests		
Lviv oblast	1 689	1 648	13	0.8	708	35	17	2.4
Mykolayiv oblast	1 253	1 250	1	0.1	3 429	1 840	32	0.9
Odesa oblast	3 984	3 943	20	0.5	2 128	733	48	2.3
Poltava oblast	25	6	7	28.0	976	195	8	0.8
Rivne oblast	607	600	2	0.3	690	0	12	1.7
Sumy oblast	469	440	1	0.2	1 637	120	13	0.8
Ternopil oblast	442	440	1	0.2	556	4	2	0.4
Kharkiv oblast	1 716	1 687	17	1.0	4 468	63	21	0.5
Kherson oblast	517	515	0	0.0	1 170	113	11	0.9
Khmelnytskyi oblast	5	0	1	20.0	1 658	0	17	1.0
Cherkasy oblast	835	803	2	0.2	1 800	241	12	0.7
Chernivtsi oblast	715	710	1	0.1	186	0	1	0.5
Chernihiv oblast	557	552	2	0.4	820	71	5	0.6
Kyiv city	12 607	12 472	232	1.8	1 065	260	24	2.3

Table 7. HIV incidence in Ukraine in 2014-2016 1,2

Regions	2014			2015			2016		
	absolute number	per 100 000 people	growth rate, %	absolute number	per 100 000 people	growth rate %	absolute number	per 100 000 people	growth rate %
Ukraine	19 273	44.8	-5.0	15869	37.0	-17.4	17 066	40.0	8.0
Vinnitsya oblast	392	24.3	+25.2	303	18.9	-22.3	299	18.7	-0.7
Volyn oblast	264	25.3	-1.1	277	26.6	+4.9	254	24.4	-8.3
Dnipropetrovsk oblast	3 184	96.9	-7.7	2 881	88.2	-9.0	3 085	95.1	7.8
Donetsk oblast	3 043	70.4	-16.2	1 023	23.9	-66.1	1 432	33.6	40.8
Zhytomyr oblast	403	32.0	-4.7	462	36.9	+15.3	455	36.5	-1.0
Zakarpattia oblast	83	6.6	+2.5	71	5.6	-14.5	105	8.3	47.9
Zaporizhzhya oblast	612	34.5	+1.2	573	32.6	-5.8	719	41.1	26.4
Ivano-Frankivsk oblast	184	13.3	+15.7	180	13.0	-2.2	166	12.0	-7.7
Kyiv oblast	983	56.9	+35.2	973	56.2	-1.2	1 075	62.0	10.3
Kirovohrad oblast	458	46.5	+32.7	519	53.1	+14.2	431	44.4	-16.4
Luhansk oblast	518	23.2	-43.0	183	8.3	-64.4	256	11.6	40.7
Lviv oblast	490	19.3	+17.3	454	17.9	-7.3	490	19.3	8.0

Regions	2014			2015			2016		
	absolute number	per 100 000 people	growth rate, %	absolute number	per 100 000 people	growth rate %	absolute number	per 100 000 people	growth rate %
Mykolayiv oblast	1 086	93.1	+0.5	863	74.3	-20.2	1 031	89.3	20.2
Odesa oblast	2 622	109.4	-4.7	2 382	99.5	-9.0	2 157	90.3	-9.3
Poltava oblast	419	28.8	-17.5	449	31.1	+7.9	401	28.0	-10.0
Rivne oblast	258	22.2	+1.6	249	21.4	-3.6	253	21.8	1.6
Sumy oblast	202	17.9	-1.9	224	20.0	+11.9	203	18.3	-8.6
Ternopil oblast	106	9.9	-19.6	116	10.9	+9.8	130	12.2	12.6
Kharkiv oblast	537	19.6	-16.9	526	19.3	-1.7	618	22.8	18.1
Kherson oblast	531	49.6	-4.7	521	48.9	-1.4	583	55.0	12.5
Khmelnyskyi oblast	285	21.8	-14.7	194	14.9	-31.6	200	15.5	3.7
Cherkasy oblast	605	48.2	+32.6	541	43.4	-10.0	566	45.7	5.4
Chernivtsi oblast	114	12.5	+5.6	98	10.8	-14.1	97	10.7	-0.9
Chernihiv oblast	511	48.1	+0.2	498	47.4	-1.5	462	44.4	-6.3
Kyiv city	1 383	48.1	-1.6	1 309	45.2	-6.0	1 598	55.0	21.6

¹ including children born to HIV-infected mothers with unknown HIV status

² not including data from the AR of Crimea and ATO area

Table 8. Number of HIV-infected persons who arrived from Donetsk and Luhansk oblasts, AR of Crimea and were enrolled under medical supervision in the AIDS service facilities in 2015-2016

Regions	2015			2016					
	Enrolled under supervision	including those arrived from		Enrolled under supervision	including those arrived from		enrolled with the diagnosis first established in the life		
		Donetsk oblast	Luhansk oblast		AR of Crimea	Donetsk oblast		Luhansk oblast	AR of Crimea
Ukraine	731	572	127	32	504	321	81	17	85
Vinnitsya oblast	15	11	4	0	8	6	0	1	1
Volyn oblast	2	2	0	0	1	1	0	0	0
Dnipropetrovsk oblast	109	93	16	0	28	23	1	2	2
Donetsk oblast ¹		no data			137	116	4	0	17
Zhytomyr oblast	15	11	2	2	6	2	2	2	0
Zakarpattia oblast	6	5	0	1	4	4	0	0	0
Zaporizhya oblast	118	107	8	3	49	35	5	0	9
Ivano-Frankivsk oblast	11	10	0	1	0	0	0	0	0
Kyiv oblast	35	26	9	0	14	6	1	3	4
Kirovohrad oblast	13	8	3	2	3	1	2	0	0
Luhansk oblast ¹	23	2	21		35	4	24	0	7

Regions	2015			2016					
	Enrolled under supervision	including those arrived from		Enrolled under supervision	including those arrived from			enrolled with the diagnosis first established in the life	
		Donetsk oblast	Luhansk oblast		AR of Crimea	Donetsk oblast	Luhansk oblast		AR of Crimea
Lviv oblast	22	16	3	3	12	5	2	1	4
Mykolayiv oblast	4	2	2	0	16	9	6	1	0
Odesa oblast	45	40	4	1	25	19	6	0	0
Poltava oblast	50	45	4	1	22	14	4	0	4
Rivne oblast	4	4	0	0	0	0	0	0	0
Sumy oblast	25	19	6	0	5	4	1	0	0
Ternopil oblast	8	7	1	0	3	2	0	1	0
Kharkiv oblast	47	29	13	5	52	31	17	4	0
Kherson oblast	12	10	0	2	8	8	0	0	0
Khmelnitskyi oblast	20	17	3	0	1	0	0	1	0
Cherkasy oblast	0	0	0	0	10	9	1	0	0
Chernivtsi oblast	0	0	0	0	4	3	1	0	0
Chernihiv oblast	11	9	2	0	5	3	1	0	1
Kyiv city	136	99	26	11	56	16	3	1	36

¹ based on the data of HCFs from the territory controlled by the government of Ukraine

Table 9. Persons aged 15-24 first diagnosed with HIV in 2014-2016 pp¹

Regions	2014		2015		2016	
	incl. persons aged 15-24	% of the new HIV cases	incl. persons aged 15-24	% of the new HIV cases	incl. persons aged 15-24	% of the new HIV cases
Ukraine	1 298	6.7	909	5.7	884	5.2
Vinnitsya oblast	28	7.1	22	7.3	20	6.7
Volyn oblast	20	7.6	21	7.6	10	3.9
Dnipropetrovsk oblast	143	4.5	128	4.4	112	3.6
Donetsk oblast ¹	242	8.0	56	5.5	67	4.7
Zhytomyr oblast	31	7.7	31	6.7	35	7.7
Zakarpattya oblast	4	4.8	3	4.2	9	8.6
Zaporizhya oblast	38	6.2	38	6.6	33	4.6
Ivano-Frankivsk oblast	22	12.0	8	4.4	13	7.8
Kyiv oblast	74	7.5	54	5.5	48	4.5
Kirovohrad oblast	28	6.1	19	3.7	33	7.7
Luhansk oblast ¹	42	8.1	6	3.3	11	4.3
Lviv oblast	50	10.2	32	7.0	38	7.8

Regions	2014		2015		2016	
	incl. persons aged 15-24	% of the new HIV cases	incl. persons aged 15-24	% of the new HIV cases	incl. persons aged 15-24	% of the new HIV cases
Mykolayiv oblast	32	2.9	42	4.9	51	4.9
Odesa oblast	207	7.9	149	6.3	109	5.1
Poltava oblast	32	7.6	24	5.3	25	6.2
Rivne oblast	22	8.5	20	8.0	21	8.3
Sumy oblast	17	8.4	17	7.6	6	3.0
Ternopil oblast	8	7.5	2	1.7	10	7.7
Kharkiv oblast	41	7.6	41	7.8	36	5.8
Kherson oblast	26	4.9	26	5.0	29	5.0
Khmelnitskyi oblast	18	6.3	11	5.7	10	5.0
Cherkasy oblast	55	9.1	30	5.5	31	5.5
Chernivtsi oblast	9	7.9	6	6.1	5	5.2
Chernihiv oblast	32	6.3	20	4.0	19	4.1
Kyiv city	77	5.6	103	7.9	103	6.4

¹ based on the data of HCFs from the territory controlled by the government of Ukraine

Table 10. Structure of HIV transmission modes among the citizens of Ukraine¹

Transmission mode	Persons enrolled under medical supervision who were first diagnosed with HIV			Number of persons diagnosed with HIV under supervision at the end of the year		
	2014	2015	2016	2014	2015	2016
Total number of infected people	19 273	15 869	17066	137 970	126 604	132945
including: <i>infected by sexual transmission</i>	10 925	9 411	10 506	72 561	69 054	76 110
among them:						
<i>homosexual</i>	277	368	436	1 221	1 368	1 733
<i>heterosexual</i>	10 648	9 043	10 070	71 340	67 686	74 377
parenteral	4 674	3 450	3 732	53 976	47 826	47 580
among them because of:						
<i>injecting drug use</i>	4 670	3 449	3 728	53 920	47 776	47 531
<i>blood or blood components transfusion</i>	0	0	1	13	11	11
<i>transplantation of donor organs, cells, liquids, biological material</i>	0	0	0	0	0	0
<i>other medical interventions</i>	0	0	0	10	8	8
<i>workplace exposure</i>	0	0	0	1	1	1
<i>other non-medical interventions</i>	4	1	3	32	30	29
children born to a HIV-positive woman	3 600	2 967	2 808	9 738	8 540	8 383
among them:						
<i>HIV diagnosis confirmed</i>	122	83	76	3036	2 857	3 058
<i>HIV diagnosis being under confirmation</i>	3 478	2 884	2 732	6 702	5 683	5 325
transmission mode not identified	74	41	20	1 695	1 184	872

¹ not including data from the AR of Crimea and ATO area

Table 11. Officially registered new cases of HIV among people who inject drugs (PWID), their rate from the total number of new cases

Regions	1997 ¹		2008 ²		2016 ³	
	PWID	%	PWID	%	PWID	%
Ukraine (without AR of Crimea and Sevastopol)	6 966	84.3	6 558	36.9	3 728	21.8
Ukraine (with AR of Crimea and Sevastopol)	7 448	83.6	7 009	37.0		
AR of Crimea	376	71.9	354	35.3		
Vinnytsya oblast	37	72.5	98	31.5	31	10.4
Volyn oblast	90	94.7	71	29.1	36	14.2
Dnipropetrovsk oblast	2 042	93.1	1 316	42.7	838	27.2
Donetsk oblast ¹	1 710	81.8	1 295	32.4	221	15.4
Zhytomyr oblast	50	89.3	134	39.4	87	19.1
Zakarpattia oblast	21	75.0	3	7.1	3	2.9
Zaporizhyya oblast	264	89.2	188	35.7	183	25.5
Ivano-Frankivsk oblast	18	90.0	51	30.7	26	15.7
Kyiv oblast	71	89.9	236	33.7	370	34.4
Kirovohrad oblast	16	76.2	53	22.2	75	17.4
Luhansk oblast ¹	147	86.0	295	43.5	50	19.5
Lviv oblast	51	82.3	155	49.2	146	29.8
Mykolayiv oblast	268	85.6	454	38.2	181	17.6
Odesa oblast	769	67.3	431	27.7	283	13.1
Poltava oblast	213	93.0	152	40.2	125	31.2
Rivne oblast	13	68.4	102	47.2	28	11.1
Sumy oblast	19	82.6	55	29.9	40	19.7
Ternopil oblast	30	85.7	68	52.7	14	10.8
Kharkiv oblast	205	74.0	218	42.2	173	28.0
Kherson oblast	64	71.9	233	39.6	119	20.4
Khmelnitskyi oblast	40	81.6	77	38.3	20	10.0
Cherkasy oblast	188	82.5	134	37.5	146	25.8
Chernivtsi oblast	80	94.1	19	21.1	15	15.5

Regions	19971		2008 ²		2016 ³	
	PWID	%	PWID	%	PWID	%
Chernihiv oblast	102	94.4	123	28.1	97	21.0
Kyiv city	458	90.7	597	47.5	421	26.3
Sevastopol city	106	85.5	97	43.7		

¹ the year with maximum recorded number of people in the entire period of HIV epidemiological surveillance in Ukraine

² the year when the prevailing HIV transmission mode in Ukraine shifted from the artificial parenteral one to the sexual one, predominantly heterosexual

³ not including data from the AR of Crimea and ATO area

Table 12. Associated pathologies and conditions in people with the HIV diagnosis established for the first time in their lifetime (regardless of the diseases stage) aged 15 and older enrolled under the medical supervision in Ukraine during 2016¹

Indicator name	Absolute number	Ratio,%
Total number of HIV-infected persons aged 15 and older	14 249	
including:		
1. <i>Screened for Hepatitis B markers, among them – hepatitis B markers detected</i>	10 869	76.3
	1 202	11.1
2. <i>Screened for Hepatitis C markers, among them – hepatitis C markers detected</i>	10 686	75.0
	3 080	28.8
3. Screened for sexually transmitted infections (STI), among them:	11 714	82.2
<i>with STI</i>	3 413	29.1
<i>number of persons with syphilis</i>	151	1.3
4. Persons with alcohol and drug dependence data, among them:	4 309	30.2
<i>with alcohol dependence</i>	1 901	44.1
<i>with dependence of non-injecting drugs, psychotropic substances and precursors</i>	1 292	30.0
<i>active PWID</i>	1 201	27.9
5. Percentage of active PWID among the persons diagnosed HIV-positive for the first time in their life who infected parenterally by using injectable drugs		32.2

¹ not including data from the AR of Crimea and ATO area

Table 13. Indicators of timeliness of taking persons with HIV under medical supervision and regularity of medical supervision in 2016¹

Regions	Coverage of HIV-infected persons with medical supervision from the total number of detected cases, seroepidemiological monitoring data, %	HIV-infected persons aged 15 and older (new cases)			Persons aged 15 and older under medical supervision, analysis of CD4, %	Active medical supervision group ² , %
		% of persons enrolled under medical supervision		Coverage of persons with absolute or relative CD4 count analysis, %		
		in III-IV clinical stages of HIV	by CD4 immunosuppression grade 200-349 cells/mcl and < 200 cells/mcl			
Ukraine	73.6	55.6	50.8	88.2	72.5	79.8
Vinnitsya oblast	71.0	59.6	49.6	84.6	75.5	85.0
Volyn oblast	89.4	45.5	58.2	91.1	86.7	81.9
Dnipropetrovsk oblast	77.6	57.7	45.3	75.0	59.5	76.7
Donetsk oblast ¹	70.5	53.7	45.2	73.9	68.4	77.4
Zhytomyr oblast	71.0	45.6	47.2	89.4	85.5	89.2
Zakarpattia oblast	74.5	54.2	56.6	85.5	73.3	84.1
Zaporizhya oblast	89.9	54.1	53.2	89.8	75.3	80.3
Ivano-Frankivsk oblast	68.3	30.8	44.8	76.9	46.2	81.0
Kyiv oblast	83.8	53.8	48.0	96.2	82.9	83.0
Kirovohrad oblast	68.7	45.2	49.3	99.4	92.2	80.0
Luhansk oblast ¹	81.3	51.7	47.3	77.3	76.0	86.5
Lviv oblast	86.7	44.1	51.3	100.0	74.3	69.0

Regions	Coverage of HIV-infected persons with medical supervision from the total number of detected cases, seroepidemiological monitoring data, %	HIV-infected persons aged 15 and older (new cases)			Persons aged 15 and older under medical supervision, analysis of CD4, %	Active medical supervision group ² , %
		% of persons enrolled under medical supervision		Coverage of persons with absolute or relative CD4 count analysis, %		
		in III-IV clinical stages of HIV	by CD4 immunosuppression grade 200-349 cells/mcl and < 200 cells/mcl			
Mykolayiv oblast	86.9	51.1	67.1	99.1	69.5	74.0
Odesa oblast	64.5	75.2	56.3	95.3	70.2	79.1
Poltava oblast	86.6	54.0	50.4	87.5	65.2	74.6
Rivne oblast	80.1	38.7	51.3	85.4	90.0	84.3
Sumy oblast	77.8	47.3	49.1	89.7	83.7	79.0
Ternopil oblast	102.43	42.5	27.4	97.3	92.1	89.0
Kharkiv oblast	79.7	68.5	52.9	98.1	95.7	96.3
Kherson oblast	90.1	57.5	35.8	73.1	70.2	72.1
Khmelnitskyi oblast	64.9	63.4	47.8	100.0	66.8	78.9
Cherkasy oblast	84.5	40.2	53.4	90.3	82.3	83.3
Chernivtsi oblast	66.4	41.4	51.4	100.0	82.5	85.2
Chernihiv oblast	93.3	55.6	49.1	96.6	66.8	79.0
Kyiv city	51.4	49.7	57.3	96.7	85.6	86.6

1 not including data from the AR of Crimea and ATO area

2.active supervision group – persons who passed medical examination not less than once in the current year

3 the rate exceeds 100% at the expense of enrolling persons diagnosed with HIV in previous years

Table 14. HIV incidence in Ukraine in 2014-2016¹

Regions	2014			2015			2016		
	absolute number	per 100 000 people	growth rate %/o	absolute number	per 100 000 people	growth rate %/o	absolute number	per 100 000 people	growth rate %/o
Ukraine	9 844	22.9	+10.1	8468	19.8	-13.7	8 852	20.7	5.0
Vinnytsya oblast	223	13.8	+30.4	183	11.4	-17.5	167	10.5	-8.2
Volyn oblast	144	13.8	+30.8	128	12.3	-11.2	128	12.3	0
Dnipropetrovsk oblast	2 120	64.5	+2.4	2 047	62.7	-2.9	1 982	61.1	-2.5
Donetsk oblast ¹	1 882	43.5	-4.6	645	15.1	-65.4	871	20.5	35.9
Zhytomyr oblast	185	14.7	-8.1	216	17.3	+17.5	205	16.5	-4.6
Zakarpattya oblast	38	3.0	+8.4	52	4.1	+36.7	54	4.3	3.9
Zaporizhya oblast	386	21.8	-0.3	376	21.4	-2.0	447	25.6	19.7
Ivano-Frankivsk oblast	113	8.2	-7.3	85	6.1	-24.8	65	4.7	-23.4
Kyiv oblast	325	18.8	-0.6	408	23.6	+25.3	467	26.9	14.3
Kirovohrad oblast	134	13.6	+78.7	230	23.5	+72.9	162	16.7	-29.1
Luhansk oblast ¹	204	9.1	-43.5	102	4.6	-49.6	133	6.0	31.1
Lviv oblast	184	7.2	-12.0	189	7.5	+2.8	176	6.9	-6.8

Regions	2014			2015			2016		
	absolute number	per 100 000 people	growth rate %	absolute number	per 100 000 people	growth rate %	absolute number	per 100 000 people	growth rate %
Mykolayiv oblast	463	39.7	+61.9	371	31.9	-19.5	439	38.0	19.0
Odesa oblast	1 433	59.8	+131.5	1 407	58.8	-1.7	1 428	59.8	1.7
Poltava oblast	201	13.8	-16.6	255	17.7	+27.7	209	14.6	-17.4
Rivne oblast	78	6.7	+14.7	86	7.4	+10.1	100	8.6	16.2
Sumy oblast	96	8.5	+4.3	99	8.8	+4.0	91	8.2	-7.3
Ternopil oblast	54	5.0	+25.6	41	3.8	-23.8	47	4.4	15.2
Kharkiv oblast	212	7.8	-26.1	204	7.5	-3.4	271	10.0	33.5
Kherson oblast	174	16.3	-1.7	187	17.6	+8.0	212	20.0	14.0
Khmelnytskyi oblast	157	12.0	+14.6	128	9.9	-18.1	138	10.7	8.4
Cherkasy oblast	284	22.6	+10.1	261	20.9	-7.5	249	20.1	-3.9
Chernivtsi oblast	28	3.1	-6.7	50	5.5	+78.4	38	4.2	-23.9
Chernihiv oblast	227	21.4	+17.0	238	22.6	+5.9	238	22.9	1.0
Kyiv city	499	17.3	+6.2	480	16.6	-4.4	535	18.4	11.0

¹ not including data from the AR of Crimea and ATO area

Table 15. Persons with TB among those diagnosed with AIDS for the first time in their life in Ukraine, 2015-2016¹

Regions	2015			2016		
	Number of people with AIDS diagnosed with TB	% from the new AIDS cases	% of first diagnosed TB among TB/HIV co-infected patients	Number of people with AIDS diagnosed with TB	% from the new AIDS cases	% of first diagnosed TB among TB/HIV co-infected patients
Ukraine	4 470	52.8	83.1	4 938	55.8	80.5
Vinnitsya oblast	51	27.9	82.4	75	44.9	89.3
Volyn oblast	30	23.4	76.7	30	23.4	83.3
Dnipropetrovsk oblast	846	41.3	80.9	798	40.3	69.9
Donetsk oblast ¹	236	36.6	88.1	313	35.9	92.0
Zhytomyr oblast	123	56.9	87.0	120	58.5	85.8
Zakarpattya oblast	23	44.2	95.7	24	44.4	100.0
Zaporizhya oblast	194	51.6	49.5	172	38.5	80.2
Ivano-Frankivsk oblast	62	72.9	75.8	47	72.3	78.7
Kyiv oblast	171	41.9	94.2	202	43.3	99.0
Kirovohrad oblast	71	30.9	100.0	77	47.5	100.0
Luhansk oblast ¹	53	52.0	90.6	64	48.1	93.8
Lviv oblast	136	72.0	100.0	98	55.7	100.0

Regions	2015			2016		
	Number of people with AIDS diagnosed with TB	% from the new AIDS cases	% of first diagnosed TB among TB/HIV co-infected patients	Number of people with AIDS diagnosed with TB	% from the new AIDS cases	% of first diagnosed TB among TB/HIV co-infected patients
Mykolayiv oblast	368	99.2	56.3	360	82.0	57.2
Odesa oblast	976	69.4	88.0	1 256	88.0	75.9
Poltava oblast	71	27.8	84.5	97	46.4	89.7
Rivne oblast	42	48.8	100.0	49	49.0	100.0
Sunny oblast	73	73.7	80.8	65	71.4	84.6
Ternopil oblast	22	53.7	100.0	35	74.5	100.0
Kharkiv oblast	110	53.9	82.7	129	47.6	82.2
Kherson oblast	136	72.7	97.8	156	73.6	96.8
Khmelnytskyi oblast	70	54.7	98.6	76	55.1	94.7
Cherkasy oblast	137	52.5	97.8	155	62.2	97.4
Chernivtsi oblast	45	90.0	91.1	20	52.6	55.0
Chernihiv oblast	96	40.3	93.8	132	55.5	82.6
Kyiv city	328	68.3	79.6	388	72.5	80.7

¹ not including data from the AR of Crimea and ATO area

Table 16. Patients with TB among the persons with AIDS under medical supervision¹

Regions	as of 01.01.2016			as of 01.01.2017		
	Number of people with AIDS diagnosed with TB	% from the new AIDS cases	% of first diagnosed TB among TB/HIV co-infected patients	Number of people with AIDS diagnosed with TB	% from the new AIDS cases	% of first diagnosed TB among TB/HIV co-infected patients
Ukraine	12 566	36.9	28.5	12 948	33.4	27.4
Vinnytsya oblast	360	36.4	18.1	440	40.2	10.2
Volyn oblast	53	9.6	41.5	64	10.3	46.9
Dnipropetrovsk oblast	3 211	45.0	24.0	3 544	44.4	21.8
Donetsk oblast	1 371	33.2	20.3	1 476	31.2	16.9
Zhytomyr oblast	479	62.9	22.3	543	62.7	22.1
Zakarpattya oblast	30	24.2	83.3	37	23.3	51.4
Zaporizhya oblast	271	20.5	31.7	293	18.8	37.5
Ivano-Frankivsk oblast	50	13.9	40.0	50	13.0	24.0
Kyiv oblast	511	28.2	46.4	560	25.8	50.5
Kirovohrad oblast	308	71.1	37.0	153	31.2	100.0
Luhansk oblast	180	45.2	27.2	109	23.7	48.6
Lviv oblast	687	74.8	19.8	772	76.3	12.7

Regions	as of 01.01.2016			as of 01.01.2017		
	Number of people with AIDS diagnosed with TB	% from the new AIDS cases	% of first diagnosed TB among TB/HIV co-infected patients	Number of people with AIDS diagnosed with TB	% from the new AIDS cases	% of first diagnosed TB among TB/HIV co-infected patients
Mykolayiv oblast	374	30.1	52.7	388	25.7	53.1
Odesa oblast	1 054	19.3	49.0	713	11.2	47.4
Poltava oblast	111	11.7	38.7	112	10.8	59.8
Rivne oblast	194	64.5	21.6	42	11.7	78.6
Sumy oblast	74	19.2	37.8	88	20.6	31.8
Ternopil oblast	55	35.3	100.0	73	42.2	100.0
Kharkiv oblast	205	29.8	42.0	185	21.8	46.5
Kherson oblast	225	28.0	23.1	201	22.4	60.2
Khmelnytskyi oblast	262	42.8	21.4	324	48.7	14.5
Cherkasy oblast	628	62.5	19.4	713	63.8	19.9
Chernivtsi oblast	152	63.9	25.0	159	61.9	28.9
Chernihiv oblast	177	21.4	48.0	187	19.3	49.7
Kyiv city	1 544	64.5	22.9	1 722	67.3	18.6

¹ not including data from the AR of Crimea and ATO area

Table 17. AIDS mortality in Ukraine in 2014-2016¹

Regions	2014			2015			2016		
	absolute number	per 100 000 people	growth rate %	absolute number	per 100 000 people	growth rate %	absolute number	per 100 000 people	growth rate %
Ukraine	3 426	8.0	+1.8	3032	7.1	-11.2	3 253	7.6	7.7
Vinnitsya oblast	52	3.2	-7.1	44	2.7	-15.0	51	3.2	16.6
Volyn oblast	49	4.7	-21.0	59	5.7	+20.3	55	5.3	-6.7
Dnipropetrovsk oblast	928	28.2	-0.2	920	28.2	-0.3	1 007	31.0	10.2
Donetsk oblast	719	16.6	+11.0	337	7.9	-52.7	347	8.2	3.6
Zhytomyr oblast	83	6.6	+1.2	87	6.9	+5.4	88	7.1	1.7
Zakarpattya oblast	10	0.8	-16.7	12	1.0	+19.9	10	0.8	-16.7
Zaporizhya oblast	130	7.3	+7.4	155	8.8	+20.0	143	8.2	-7.1
Ivano-Frankivsk oblast	32	2.3	-22.0	29	2.1	-9.4	32	2.3	10.5
Kyiv oblast	56	3.2	-12.5	106	6.1	+88.9	113	6.5	6.5
Kirovohrad oblast	65	6.6	+3.2	91	9.3	+41.0	104	10.7	15.1
Luhansk oblast	108	4.8	-24.5	41	1.9	-61.7	42	1.9	3.0

Regions	2014			2015			2016		
	absolute number	per 100 000 people	growth rate %	absolute number	per 100 000 people	growth rate %	absolute number	per 100 000 people	growth rate %
Lviv oblast	75	3.0	-5.1	78	3.1	+4.1	73	2.9	-6.4
Mykolayiv oblast	131	11.2	+11.0	112	9.6	-14.1	132	11.4	18.6
Odesa oblast	366	15.3	+26.2	326	13.6	-10.8	334	14.0	2.7
Poltava oblast	87	6.0	+8.8	95	6.6	+9.9	78	5.4	-17.3
Rivne oblast	20	1.7	+17.6	23	2.0	+14.9	30	2.6	30.4
Sumy oblast	14	1.2	-26.3	21	1.9	+51.3	26	2.3	24.8
Ternopil oblast	23	2.1	+43.8	17	1.6	-25.8	15	1.4	-11.4
Kharkiv oblast	34	1.2	-55.8	58	2.1	+71.2	63	2.3	9.2
Kherson oblast	33	3.1	-10.8	35	3.3	+6.6	74	7.0	112.6
Khmelnytskyi oblast	55	4.2	+14.6	44	3.4	-19.6	57	4.4	30.3
Cherkasy oblast	67	5.3	-18.3	75	6.0	+12.7	72	5.8	-3.3
Chernivtsi oblast	16	1.8	+23.1	13	1.4	-18.8	18	2.0	38.6
Chernihiv oblast	74	7.0	-3.9	71	6.8	-3.0	88	8.5	25.2
Kyiv city	199	6.9	+3.6	183	6.3	-8.6	201	6.9	9.4

¹ not including data from the AR of Crimea and ATO area

Table 18. Causes of death of HIV-infected persons in Ukraine in 2015-2016¹

New cases of death	2015			2016		
	Total	received ART		Total	received ART	
		total	% of those who needed it		total	% of those who needed it
In total deceased persons, among them:	4 990	1 976	45.3	5305	2303	48.6
directly related to HIV	3 154	1 278	40.5	3338	1516	45.4
among them:						
<i>in III clinical stage of HIV</i>	122	29	23.8	85	32	37.6
<i>in IV clinical stage of HIV</i>	3 032	1 249	41.2	3253	1484	45.6
including because of:						
<i>TB/HIV co-infection</i>	1 675	799	47.7	1694	806	47.6
not related to HIV	1 821	694	57.8	1938	778	56.6
including because of:						
<i>TB</i>	114	42	44.2	83	29	35.8
<i>viral hepatitis B and/or C, viral cirrhosis</i>	373	140	53.2	307	117	53.7
other diseases	1 068	397	59.1	1247	501	56.8
other reasons	266	115	67.6	301	131	67.5
Cause of death unknown	15	4	57.1	29	9	42.9
Percentage of PWID among the deceased persons	45.2			42.2		

¹ not including data from the AR of Crimea and ATO area

Table 19. Prevalence of HIV/AIDS among the citizens of Ukraine as of 01.01.2017 (based on medical supervision data, per 100,000 people)

Regions	HIV-infected	HIV prevalence	Persons with AIDS	AIDS prevalence
Ukraine	132 945	313.3	38 730	91.3
Vinnitsya oblast	2 642	166.6	1 094	69.0
Volyn oblast	2 018	194.1	623	59.9
Dnipropetrovsk oblast	26 338	815.1	7 986	247.1
Donetsk oblast ¹	13 305	314.2	4 727	111.6
Zhytomyr oblast	3 044	244.7	866	69.6
Zakarpattia oblast	484	38.5	159	12.7
Zaporizhya oblast	4 364	250.7	1 558	89.5
Ivano-Frankivsk oblast	953	69.2	385	28.0
Kyiv oblast	6 453	373.4	2 170	125.6
Kirovohrad oblast	2 590	269.5	490	51.0
Luhansk oblast ¹	2 072	94.5	460	21.0
Lviv oblast	3 263	129.6	1 012	40.2
Mykolayiv oblast	8 381	728.4	1 510	131.2
Odesa oblast	19 731	830.2	6 383	268.6
Poltava oblast	3 358	236.5	1 037	73.0
Rivne oblast	1 777	153.1	359	30.9
Sumy oblast	1 411	127.9	427	38.7
Ternopil oblast	983	93.0	173	16.4
Kharkiv oblast	3 725	138.6	847	31.5
Kherson oblast	4 214	399.3	897	85.0
Khmelnyskyy oblast	1 985	154.6	665	51.8
Cherkasy oblast	3 504	284.8	1 118	90.9
Chernivtsi oblast	870	96.1	257	28.4
Chernihiv oblast	3 742	364.2	968	94.2
Kyiv city	11 738	409.5	2 559	89.3

¹ not including data from the AR of Crimea and ATO area

Table 20. Accounting of children aged 0-18 in the healthcare facilities carrying out medical supervision for PLWH in Ukraine in 2016¹

Regions	New cases in 2016						Under medical supervision as of 01.01.2017			
	HIV cases ²			AIDS			HIV-infected children ²			incl. with AIDS
	0-18	including		0-14	15-17		0-18	including		
		0-14	15-17		0-14	15-17				
Ukraine	2 855	2 817	38	70	64	8 339	7 868	471	821	
Vinnitsya oblast	71	71	0	2	0	205	198	7	30	
Volyn oblast	41	41	0	0	1	119	112	7	10	
Dnipropetrovsk oblast	417	410	7	13	11	1 337	1 230	107	160	
Donetsk oblast ¹	294	291	3	14	11	682	656	26	67	
Zhytomyr oblast	96	95	1	0	2	223	220	3	27	
Zakarpattia oblast	22	22	0	0	3	48	46	2	5	
Zaporizhya oblast	106	104	2	2	2	222	210	12	23	
Ivano-Frankivsk oblast	23	23	0	0	0	52	49	3	12	
Kyiv oblast	171	169	2	5	4	477	419	58	89	
Kirovohrad oblast	90	88	2	1	0	319	311	8	18	
Luhansk oblast ¹	49	49	0	3	1	110	103	7	6	
Lviv oblast	78	77	1	1	2	240	237	3	14	

Regions	New cases in 2016						Under medical supervision as of 01.01.2017						
	HIV cases ²			AIDS			Deaths			HIV-infected children ²			
	0-18	including		0-18	0-14	15-17	0-18	0-14	15-17	0-18	including		incl. with AIDS
		0-14	15-17								0-14	15-17	
Mykolayiv oblast	153	150	3	3	3	4	439	401	38	19			
Odesa oblast	405	396	9	8	8	8	1 626	1 532	94	89			
Poltava oblast	66	66	0	0	0	2	192	178	14	12			
Rivne oblast	54	54	0	0	0	3	113	112	1	7			
Sumy oblast	38	38	0	1	0	0	107	105	2	5			
Terнопil oblast	17	17	0	2	0	0	35	35	0	7			
Kharkiv oblast	97	94	3	2	2	2	265	252	13	14			
Kherson oblast	103	103	0	1	1	1	285	273	12	16			
Khmelnytskyi oblast	39	39	0	2	2	2	153	148	5	45			
Cherkasy oblast	82	81	1	3	0	0	224	207	17	28			
Chernivtsi oblast	27	27	0	0	0	1	135	133	2	54			
Chernihiv oblast	83	81	2	0	0	3	209	200	9	13			
Kyiv city	233	231	2	7	1	1	522	501	21	51			

¹ not including data from the AR of Crimea and ATO area

² including children born to HIV-infected mothers with unsure HIV status

Table 21. Accounting of children born to HIV-infected persons in the healthcare facilities carrying out medical supervision for PLWH in Ukraine in 2016¹

Regions	New cases in 2016		De-registered in connection with the absence of HIV infection	are under supervision as of 01.01.2017 ²		
	Children born to HIV-infected women ²	AIDS		HIV-infected children	incl. with AIDS	children with HIV diagnosis under confirmation
Ukraine	2808	67	2 853	3058	845	5325
Vinnitsya oblast	71	2	54	49	32	158
Volyn oblast	41	0	49	43	11	77
Dnipropetrovsk oblast	411	13	507	657	185	724
Donetsk oblast	291	13	264	282	70	399
Zhytomyr oblast	94	0	86	52	23	164
Zakarpattia oblast	21	0	14	9	3	36
Zaporizhya oblast	104	2	83	69	23	155
Ivano-Frankivsk oblast	23	0	27	23	10	27
Kyiv oblast	166	3	153	162	77	303
Kirovohrad oblast	88	1	90	112	16	207
Luhansk oblast	49	3	49	38	7	67
Lviv oblast	77	1	81	55	13	183

Regions	New cases in 2016		De-registered in connection with the absence of HIV infection	are under supervision as of 01.01.2017 ²		
	Children born to HIV-infected women ²	AIDS		HIV-infected children	incl. with AIDS	children with HIV diagnosis under confirmation
Mykolayiv oblast	148	2	185	195	18	249
Odesa oblast	397	9	398	505	95	1 140
Poltava oblast	66	0	76	71	13	125
Rivne oblast	54	0	49	23	7	89
Sumy oblast	37	2	30	29	5	76
Ternopil oblast	17	2	22	7	6	27
Kharkiv oblast	93	1	81	64	14	199
Kherson oblast	102	1	100	95	16	188
Khmelnytskyi oblast	39	2	47	52	47	104
Cherkasy oblast	81	3	88	93	28	131
Chernivtsi oblast	27	0	22	99	54	36
Chernihiv oblast	81	0	84	89	15	121
Kyiv city	230	7	214	185	57	340

¹ not including data from the AR of Crimea and ATO area

² including children born to HIV-infected mothers with unsure HIV status

Table 22. Mother-to-child transmission (MTCT) incidence (based on the results of cohort surveillance of 2012, 2013, 2014)¹

Regions	2012		2013		2014		IMTCT, av ² %
	HIV-infected children	MTCT rate, %	HIV-infected children	MTCT rate, %	HIV-infected children	MTCT rate, %	
Ukraine	149	4,31	111	3,91	98	3,32	4,0
Vinnitsya oblast	8	13.11	2	2.86	1	1.47	5.32
Volyn oblast	1	1.89	1	1.89	0	0.0	1.42
Dnipropetrovsk oblast	33	5.96	28	5.89	16	3.54	5.48
Donetsk oblast	37	6.01	10	4.05	8	3.27	5.22
Zhytomyr oblast	3	2.83	0	0.0	1	1.06	1.41
Zakarpattia oblast	0	0.0	1	10.0	0	0.0	2.50
Zaporizhyya oblast	4	4.08	1	1.1	4	3.64	3.10
Ivano-Frankivsk oblast	0	0.0	1	4.0	1	3.45	2.44
Kyiv oblast	4	2.96	8	5.84	9	5.96	5.22
Kirovohrad oblast	5	5.62	8	8.89	6	6.25	7.42
Luhansk oblast	2	1.47	2	5.13	2	3.92	2.73
Lviv oblast	0	0.0	1	1.32	3	3.09	1.65
Mykolayiv oblast	8	3.67	7	3.74	6	3.14	3.65

Regions	2012		2013		2014		IMTCT, av ² %
	HIV- infected children	MTCT rate, %	HIV- infected children	MTCT rate, %	HIV- infected children	MTCT rate, %	
Odesa oblast	21	4.64	18	4.85	15	3.40	4.46
Poltava oblast	1	1.52	3	4.0	2	2.53	2.80
Rivne oblast	3	6.25	2	3.7	0	0.0	3.33
Sumy oblast	4	10.81	0	0.0	0	0.0	3.74
Ternopil oblast	0	0.0	1	7.14	0	0.0	2.17
Kharkiv oblast	0	0.0	1	1.01	3	4.29	1.52
Kherson oblast	1	0.98	2	1.87	4	3.54	2.22
Khmelnyskyi oblast	1	1.75	0	0.0	0	0.0	0.60
Cherkasy oblast	4	4.08	4	4.3	2	2.04	2.87
Chernivtsi oblast	0	0.0	0	0.0	1	4.35	1.82
Chernihiv oblast	4	4.82	4	4.12	3	3.23	4.20
Kyiv city	5	2.46	6	2.74	11	4.58	3.44

¹ without data of the reporting form №63-1 of AR of the Crimea and the ATO area

² IMTCT – the average calculated by enlarging intervals, taking into account the number of children with established HIV status and HIV-infected children for 2012-2014 in each region and Ukraine in general. This method is used for the surveillance which do not always allow establishing a clear tendency regarding a certain event within a lengthy period of time.

Table 23. Indicators of the situation with PMTCT program fulfillment in Ukraine in 2016

Regions	Indicators of PMTCT program fulfillment in 2016													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
	Number of HIV-infected pregnant women (new cases in 2016)	Percentage of pregnant women in who HIV-positive status was established after 26 weeks, in childbirth, after giving birth (among new cases)	Percentage of HIV-infected pregnant women who received ARV prevention/ART	Number of childbirths of HIV-infected women	Percentage of HIV-infected women delivered to the maternity inpatient clinic before childbirth	Percentage of HIV-infected women delivering by C-section	Percentage of HIV-infected pregnant women continuing ART after childbirth	Number of live babies born to HIV-positive women	Percentage of children born to a HIV-positive women who received prevention	Percentage of children born to HIV-infected women on formula feeding	Percentage of children born to HIV-infected woman covered with early prevention (PCR DNA)	Number of new cases of HIV in children born to HIV-infected women in 2016 (based on PCR DNA, RNA diagnostics)	MTCT level in 2016, based on RNA diagnostics	Number and percentage of HIV-infected children under 18 enrolled on medical supervision and living with families (with parents, relatives, adopted)
A														
Ukraine	2814	26.6	95.6	2 710	62.1	35.3	73.6	2 733	97.3	99.2	87.3	57	2.6	2790 / 92.6%
Vinnitsya oblast	70	60.9	97.2	71	50.7	11.3	69.0	70	98.6	98.6	93.7	1	1.7	41 / 87.2%
Volyn oblast	41	20.0	100.0	42	73.8	45.2	92.9	41	97.6	100.0	65.8	2	7.7	36 / 85.7%
Dnipropetrovsk oblast	436	38.4	93.7	414	60.6	28.3	70.3	412	96.8	99.0	84.0	9	3.1	551 / 89.9%
Donetsk oblast	292	36.5	95.2	269	63.2	33.5	58.7	269	97.0	98.5	78.0	3	1.3	242 / 85.5
Zhytomyr oblast	87	4.9	100.0	89	64.0	53.9	75.3	93	100.0	100.0	100.0	0	0.0	57 / 96.6
Zakarpattya oblast	18	50.0	88.9	18	16.7	27.8	83.3	21	95.2	90.5	69.2	0	0.0	8 / 66.7
Zaporizhyya oblast	87	27.3	96.9	98	51.0	37.8	87.8	99	98.0	99.0	98.8	3	3.7	65 / 97.0%
Ivano-Frankivsk oblast	20	36.4	95.5	22	95.5	59.1	95.5	22	90.9	95.5	95.0	0	0.0	25 / 100%
Kyiv oblast	113	36.9	99.1	112	61.6	23.2	0.0	121	96.7	100.0	69.1	3	4.6	173 / 99.4%
Kirovohrad oblast	93	7.1	94.4	89	66.3	28.1	95.5	88	95.5	98.9	77.3	1	1.5	105 / 93.8%

Regions	Indicators of PMTCT program fulfillment in 2016													
	Number and percentage of HIV-infected children under 18 enrolled on medical supervision and living with families (with parents, relatives, adopted)	MTCT level in 2016, based on RNA diagnostics	Number of new cases of HIV in children born to HIV-infected women in 2016 (based on PCR DNA, RNA diagnostics)	Percentage of children born to HIV-infected woman covered with early prevention (PCR DNA)	Percentage of children born to HIV-infected women on formula feeding	Percentage of children born to a HIV-positive women who received prevention	Number of live babies born to HIV-positive women	Percentage of HIV-infected pregnant women continuing ART after childbirth	Percentage of HIV-infected women delivering by C-section	Percentage of HIV-infected women delivered to the maternity inpatient clinic before childbirth	Number of childbirths of HIV-infected women	Percentage of HIV-infected pregnant women who received ARV prevention/ART	Percentage of pregnant women in who HIV-positive status was established after 26 weeks, in childbirth, after giving birth (among new cases)	Number of HIV-infected pregnant women (new cases in 2016)
Luhansk oblast	40 / 93.0%	2.3	1	93.3	100.0	98.0	50	94.3	30.2	77.4	53	94.3	27.3	57
Lviv oblast	52 / 91.2%	3.0	2	89.0	98.7	97.4	76	82.4	45.9	54.1	74	93.2	25.0	64
Mykolayiv oblast	179 / 94.2%	2.8	4	96.5	100.0	98.6	144	89.9	27.3	40.3	139	98.6	18.3	156
Odesa oblast	437 / 89.9 %	3.0	11	95.1	99.2	98.4	385	72.1	55.4	68.7	383	96.3	33.5	427
Poltava oblast	64 / 95.50%	0.0	0	70.0	100.0	100.0	64	100.0	31.7	88.9	63	100.0	10.0	68
Rivne oblast	23 / 95.8%	0.0	0	85.1	100.0	100.0	54	60.8	37.3	70.6	51	98.0	0.0	52
Sumy oblast	25 / 80.6%	2.8	1	97.2	97.3	97.3	37	92.1	57.9	97.4	38	97.4	0.0	40
Ternopil oblast	7 / 97.5%	0.0	0	93.3	100.0	100.0	17	86.7	20.0	80.0	15	100.0	0.0	13
Kharkiv oblast	66 / 100%	2.0	1	65.3	98.9	97.8	93	69.9	36.6	75.3	93	97.8	14.3	108
Kherson oblast	97 / 100%	5.6	5	91.6	100.0	98.0	101	83.3	26.5	61.8	102	95.1	29.5	107
Khmelnitskyi oblast	48 / 98%	0.0	0	82.1	100.0	97.4	39	56.4	53.8	97.4	39	97.4	18.2	42
Cherkasy oblast	85 / 91.4%	6.0	3	88.7	100.0	100.0	78	80.2	28.4	53.1	81	100.0	13.5	98
Chernivtsi oblast	99 / 100%	7.1	1	77.8	100.0	100.0	24	95.8	45.8	83.3	24	95.8	16.7	25
Chernihiv oblast	86 / 97.7%	0.0	0	96.0	100.0	97.5	81	69.1	27.2	38.3	81	90.1	20.5	83
Kyiv city	179 / 98.4%	2.5	6	92.9	99.6	92.1	254	85.6	26.8	52.0	250	91.2	16.7	217

Table 24. Information about facilities and organizations providing ART to persons with HIV/AIDS by regions of Ukraine

Region	Number of ART sites as of the end of 2015	Number of ART sites as of the end of 2016	Dynamics of the number of ART sites change in 2016
Ukraine	235	266	+31
Vinnitsya oblast	6	6	
Volyn oblast	4	5	+1
Dnipropetrovsk oblast	37	40	+3
Donetsk oblast	21	22	+1
Zhytomyr oblast	5	5	
Zakarpattia oblast	1	1	
Zaporizhya oblast	7	11	+4
Ivano-Frankivsk oblast	1	7	+6
Kyiv oblast	11	18	+7
Kirovohrad oblast	2	5	+3
Luhansk oblast	5	5	
Lviv oblast	8	8	
Mykolayiv oblast	9	12	+3
Odesa oblast	34	32	-2
Poltava oblast	12	11	-1
Rivne oblast	7	7	
Sumy oblast	5	5	
Ternopil oblast	3	3	
Kharkiv oblast	11	11	
Kherson oblast	10	10	
Khmelnyskyy oblast	7	8	+1
Cherkasy oblast	20	20	
Chernivtsi oblast	1	1	
Chernihiv oblast	3	5	+2
Kyiv city	3	6	+3
Okhmatdyt	1	1	
Epidemiological Institute of the National Academy of Medical Sciences of Ukraine	1	1	

¹ not including data from the AR of Crimea and ATO area

Table 25. Total number of the confidence cabinets and facilities operating as confidence cabinets

Region	Total number of confidence cabinets	On the basis of AIDS centers	Independent facilities of other HCFs	On the basis of infection diseases departments	On the basis of other HCF cabinets
Vinnitsya oblast	36	1	9	26	
Volyn oblast	20	1	3	14	2
Dnipropetrovsk oblast	40	1	33	6	
Donetsk oblast	24	2	22		
Zhytomyr oblast	29	1	1	27	
Zakarpattia oblast	14	1	12	1	
Zaporizhyya oblast	29	3	13	12	1
Ivano-Frankivsk oblast	17	1	16		
Kyiv oblast	35	2	25	8	
Kirovohrad oblast	24			23	1
Luhansk oblast	16	1	14	1	
Lviv oblast	50	1	20	23	6
Mykolayiv oblast	35	1	14	12	8
Odesa oblast	50	11	31	3	5
Poltava oblast	27	1	10	14	2
Rivne oblast	17	1	2	9	5
Sumy oblast	25	1	8	16	
Ternopil oblast	21	1		20	
Kharkiv oblast	31	1	22	7	1
Kherson oblast	24	1	6	17	
Khmelnytskyi oblast	23	1	20	2	
Cherkasy oblast	28	1	26	1	
Chernivtsi oblast	16	1	1	14	
Chernihiv oblast	28	1	9	13	5
Kyiv city	5	5			
Total	665	42	317	269	36

Table 26. Total number of patients with HIV/AIDS receiving ART as of 01.01.2017¹

Region/organization	MoH and NAMS of Ukraine						Penitentiary Service of Ukraine		Total (MoH, NAMS and PS)
	Adults			Children			Total, MoH and NAMS of Ukraine	Adults	
	State budget	Global Fund Round 10	PEPFAR	State budget	Total, MoH and NAMS of Ukraine				
Total	39 062	22 324	8 303	2 848	72 537	2 243	74 780		
Vinnitsya oblast	875	511	139	43	1 568	43	1 611		
Volyn oblast	622	290	103	39	1 054	25	1 079		
Dnipropetrovsk oblast	5 247	4 407	1 964	561	12 179	447	12 626		
Donetsk oblast	3 773	1 396	601	246	6 016	116	6 132		
Zhytomyr oblast	756	558	187	56	1 557	59	1 616		
Zakarpattya oblast	176	39	38	11	264	0	264		
Zaporizhya oblast	1 284	808	262	65	2 419	79	2 498		
Ivano-Frankivsk oblast	511	111	42	22	686	6	692		
Kyiv oblast	1 415	1 232	650	153	3 450	210	3 660		
Kirovohrad oblast	594	427	234	87	1 342	27	1 369		
Luhansk oblast	1 014	340	66	43	1 463	13	1 476		
Lviv oblast	684	702	114	54	1 554	118	1 672		
Mykolayiv oblast	3 787	1 061	263	185	5 296	174	5 470		

Region/organization	MoH and NAMS of Ukraine						Penitentiary Service of Ukraine		Total (MoH, NAMS and PS)
	Adults			Children		Total, MoH and NAMS of Ukraine	Adults	Global Fund Round 10	
	State budget	Global Fund Round 10	PEPFAR	State budget					
				State budget	State budget				
Odesa oblast	5 521	3 086	1 008	424	10 039	153	10 192		
Poltava oblast	1 183	481	208	62	1 934	116	2 050		
Rivne oblast	428	290	166	23	907	54	961		
Sumy oblast	389	202	78	30	699	33	732		
Ternopil oblast	507	104	50	6	667	35	702		
Kharkiv oblast	953	984	137	62	2 136	184	2 320		
Kherson oblast	1 229	801	127	93	2 250	152	2 402		
Khmelnitskyi oblast	540	335	97	46	1 018	48	1 066		
Cherkasy oblast	764	655	325	86	1 830	92	1 922		
Chernivtsi oblast	228	105	37	95	465	0	465		
Chernihiv oblast	1 058	641	252	80	2 031	59	2 090		
Kyiv city	3 505	1 985	1 028	175	6 693		6 693		
Okhmatdyt	79	10	6	101	196		196		
Epidemiological Institute of the National Academy of Medical Sciences of Ukraine	1 940	763	121	0	2 824		2 824		

¹ not including data from the AR of Crimea and ATO area

Table 27. Comparative table of the number of persons who received ART in the health facilities of the MoH of Ukraine and NAMS of Ukraine as of 01.01.2016 and 01.01.2017¹

Region/organization	Number of persons who received ART		increase during the year (abs)	increase during the year
	as of 01.01.2016	as of 01.01.2017		
Total	60 753	74 780	14 027	23%
Vinnitsya oblast	1 318	1 611	293	22%
Volyn oblast	898	1 079	181	20%
Dnipropetrovsk oblast	10 276	12 626	2 350	23%
Donetsk oblast	4 969	6 132	1 163	23%
Zhytomyr oblast	1 290	1 616	326	25%
Zakarpattia oblast	198	264	66	33%
Zaporizhyya oblast	2 023	2 498	475	23%
Ivano-Frankivsk oblast	623	692	69	11%
Kyiv oblast	2 504	3 660	1 156	46%
Kirovohrad oblast	1 034	1 369	335	32%
Luhansk oblast	1 247	1 476	229	18%
Lviv oblast	1 395	1 672	277	20%
Mykolayiv oblast	4 964	5 470	506	10%
Odesa oblast	8 070	10 192	2 122	26%
Poltava oblast	1 715	2 050	335	20%
Rivne oblast	703	961	258	37%
Sumy oblast	626	732	106	17%
Ternopil oblast	572	702	130	23%
Kharkiv oblast	1 919	2 320	401	21%
Kherson oblast	2 029	2 402	373	18%
Khmelnytskyi oblast	916	1 066	150	16%
Cherkasy oblast	1 451	1 922	471	32%
Chernivtsi oblast	425	465	40	9%
Chernihiv oblast	1 663	2 090	427	26%
Kyiv city	5 021	6 693	1 672	33%

Region/organization	Number of persons who received ART		increase during the year (abs)	increase during the year
	as of 01.01.2016	as of 01.01.2017		
Okhmatdyt	219	196	-23	-11%
Epidemiological Institute of the National Academy of Medical Sciences of Ukraine	2 685	2 824	139	5%

¹ not including data from the AR of Crimea and ATO area

Table 28. Total number of people with HIV and patients with AIDS who receive and need ART in healthcare facilities of the MoH and NAMS of Ukraine as of 01.01.2017¹ (based on the data of the reporting form № 56)*

Name	Number of persons receiving ART	Number of persons who need ART (do not receive)	Number of persons who need ART (incl. receive)
Total	74 780	10 201	84 981
including:			
<i>adults aged 18 and older, total</i>	71 932	10 156	82 088
<i>among them: men</i>	37 961	6 138	44 099
<i>women</i>	33 971	4 018	37 989
children aged 0-18, total:	2 848	45	2 893
<i>among them: men</i>	1 346	23	1 369
<i>women</i>	1 502	22	1 524
<i>including:</i>			
<i>children aged 0-3, inclusive,</i>	329		329
<i>children aged 4-10, inclusive</i>	1 275		1 275
<i>children aged 11-14, inclusive</i>	828		829
<i>children aged 15-18, inclusive</i>	416		415
Number of persons with active TB	5 364	643	6 007
Number of persons with active PWID	7 472	1 005	8 477

¹ not including data from the AR of Crimea and ATO area

Table 29. Characteristics of the cohort of patients who initiated ART In 2015, after 12 months after the ART start (based on the data of the reporting form No. 57)¹

Region/organization	Percentage of persons receiving ART in 12 months after the start of the therapy	Percentage of deceased persons in 12 months	Percentage of persons who interrupted ART, total
Total	85.92%	6.46%	7.62%
Vinnitsya oblast	86.21%	3.45%	10.34%
Volyn oblast	84.91%	8.18%	6.92%
Dnipropetrovsk oblast	83.70%	6.99%	9.31%
Donetsk oblast	77.58%	12.37%	10.04%
Zhytomyr oblast	85.26%	7.37%	7.37%
Zakarpattia oblast	85.71%	12.70%	1.59%
Zaporizhya oblast	77.53%	9.38%	13.09%
Ivano-Frankivsk oblast	76.03%	6.61%	17.36%
Kyiv oblast	93.50%	3.34%	3.16%
Kirovohrad oblast	70.96%	7.59%	21.45%
Luhansk oblast	89.14%	8.00%	2.86%
Lviv oblast	87.73%	6.82%	5.45%
Mykolayiv oblast	81.79%	8.39%	9.82%
Odesa oblast	95.28%	3.67%	1.06%
Poltava oblast	83.33%	8.70%	7.97%
Rivne oblast	90.22%	3.26%	6.52%
Sumy oblast	81.20%	4.27%	14.53%
Ternopil oblast	91.18%	8.82%	0.00%
Kharkiv oblast	83.33%	7.23%	9.43%
Kherson oblast	81.45%	7.80%	10.75%
Khmelnyskyy oblast	85.29%	8.24%	6.47%
Cherkasy oblast	86.77%	6.77%	6.45%
Chernivtsi oblast	70.83%	7.29%	21.88%
Chernihiv oblast	85.23%	9.40%	5.37%
Kyiv city	95.28%	2.55%	2.17%
Okhmatdyt	100.00%	0.00%	0.00%
Epidemiological Institute of the National Academy of Medical Sciences of Ukraine	86.82%	0.86%	12.32%

¹ not including data from the AR of Crimea and ATO area

Table 30. Laboratory research in the AIDS centers in 2016

No	Name of the oblast/facility	CD4, number of laboratories in the region/ equipment units in the facility	VL, number of laboratories in the region/equipment units in the facility	Pro-virus RNA	Confirmatory HIV testing
1	Vinnytsya	1	1	0 – the analysis is provided in Kyiv city AIDS Center	yes
2	Volyn	1 – the analysis is provided on the basis of oblast AIDS Center (portable analyzer) and Rivne AIDS Center	0 – the analysis is provided in Rivne oblast AIDS Center	0 – the analysis is provided in Iva-no-Frankivsk oblast AIDS Center	yes
3	Dnipropetrovsk	yes, 3 laboratories: Dnipropetrovsk oblast AIDS Center, Dnipropetrovsk city AIDS Center and Kryhyi Rih city AIDS Center	yes, 2 laboratories: Dnipropetrovsk oblast AIDS Center and Kryhyi Rih city AIDS Center	1	yes, 2 laboratories: Dnipropetrovsk oblast AIDS Center and Kryhyi Rih city AIDS Center
4	Donetsk	1	1	0- the analysis is provided in Kyiv City AIDS Center	yes, 2 laboratories: Slovyansk city AIDS Center and Mariupol city AIDS Center
5	Zhytomyr	0 – the analysis is provided in Kyiv City AIDS Center and (partially) on the basis of oblast AIDS Center (portable analyzer)	0 – the analysis is provided in Kyiv City AIDS Center	0 – the analysis is provided in Kyiv City AIDS Center	yes
6	Zakarpattya	1	1	0 – the analysis is provided in Iva-no-Frankivsk oblast AIDS Center	yes

No	Name of the oblast/facility	CD4, number of laboratories in the region/equipment units in the facility	VL, number of laboratories in the region/equipment units in the facility	Pro-virus RNA	Confirmatory HIV testing
7	Zaporizhya	1	1	0 – the analysis is provided in Dnipropetrovsk oblast AIDS Center	yes
8	Ivano-Frankivsk	1	1	0 – the analysis is provided by the SE "Center for Public Health of the MoH of Ukraine"	yes
9	Kyiv	1 – on the basis of the oblast hospital	0 – the analysis is provided by the SE "Center for Public Health of the MoH of Ukraine"	0 – the analysis is provided in Kyiv oblast AIDS Center	yes
10	Kirovohrad	0 – analysis is provided in Odesa oblast AIDS Center	0 – analysis is provided in Odesa oblast AIDS Center	0 – analysis is provided in Odesa oblast AIDS Center	yes
11	Luhansk	0 – analysis is provided in Kharkiv oblast AIDS Center	0 – analysis is provided in Kharkiv oblast AIDS Center	0 – analysis is provided in Kharkiv oblast AIDS Center	0 – analysis is provided in Kharkiv oblast AIDS Center
12	Lviv	1	1	0 – the analysis is provided in Ivano-Frankivsk oblast AIDS Center	yes
13	Mykolayiv	1	1	0 – analysis is provided in Odesa oblast AIDS Center	yes

No	Name of the oblast/facility	CD4, number of laboratories in the region/ equipment units in the facility	VL, number of laboratories in the region/equipment units in the facility	Pro-virus RNA	Confirmatory HIV testing
14	Odesa	2	1	1	yes (on the basis of the SE "Odesa Oblast Laboratory center of the Sanitary and Epidemiological Service of Ukraine")
15	Poltava	1	1	1	yes
16	Rivne	1	1	0 – the analysis is provided in Iva-no-Frankivsk oblast AIDS Center	yes
18	Ternopil	1	0 – the analysis is provided in Iva-no-Frankivsk oblast AIDS Center	0 – the analysis is provided in Iva-no-Frankivsk oblast AIDS Center	yes
20	Kherson	1	1	0 – the analysis is provided in Odesa oblast AIDS Center	yes
21	Khmelnytsky	1	0 – the analysis is provided in Vinnytsya oblast AIDS Center	0 – the analysis is provided in Iva-no-Frankivsk oblast AIDS Center	yes

No	Name of the oblast/facility	CD4, number of laboratories in the region/equipment units in the facility	VL, number of laboratories in the region/equipment units in the facility	Pro-virus RNA	Confirmatory HIV testing
22	Cherkasy	1	1	0 – the analysis is provided in Kyiv city AIDS Center	yes
23	Chernivtsi	0 – the analysis is provided in Ternopil oblast AIDS Center	0 – the analysis is provided in Zakarpattya and Ivano-Frankivsk oblast AIDS Center	0 – the analysis is provided in Ivano-Frankivsk oblast AIDS Center	yes
24	Chernihiv	1	0 – the analysis is provided by the SE "Center for Public Health of the MoH of Ukraine"	0 – the analysis is provided in Kyiv city AIDS Center	yes
25	Kyiv	2	1	1	yes
26	UCDC	2	1	0	0
27	Institute of Epidemiology and Infectious Diseases of the NAMS of Ukraine	1	1	0	No
Total		26	17	5	24

Table 31. Coverage with the testing on determining the CD4 count in HIV-infected persons and results of examinations of Ukrainian patients in 2016

Structure of the examined patients	Total number of examinations	% of examinations	Number of patients as of 01.01.2017	Number of patients examined at least once during the year	% of coverage with the examinations
Total, among them:	133 952	100.0	132 945	73 937	55.6
patients on ART	101 960	76.1	74 780	47 537	63.6
patients without ART	29 660	22.1	58 165	24 733	42.5
HIV-infected pregnant women	2 332	1.7	2 808*	1 667	59.4

*according to the number of newborn babies

Examined during the calendar year	Structure of examinations, %	In total examined persons, including,	receive ART		do not receive ART			
			number of patients	% of the examined persons	number of patients	% of the examined persons	number of pregnant women	% of the examined persons
For the first time	8.1	10 905	0	0	10 429	35.2	476	20.4
First	47.1	63 037	47 537	46.6	14 309	48.2	1 191	51.1
Second	37.2	49 821	44 666	43.8	4 567	15.4	588	25.2
Third	7.6	10 194	9 757	9.6	360	1.2	77	3.3
Total number of screenings	100	133 957	101 960	100	29 665	100	2 332	100

Table 32. Results of analysis on determining CD4 count of HIV-infected persons at enrolment under medical supervision in 2016

Region/organization	Number of patients screened for the first time while enrolling under medical supervision	among them with CD4 immunosuppression level					
		0-350 cells/mcl	%	351-500 cells/mcl	%	more than 500 cells/mcl	%
Ukraine	10 900	6 262	57.4	2 330	21.4	2 308	21.2
Vinnytsya oblast	14	4	28.6	8	57.1	2	14.3
Volyn oblast	181	110	60.8	44	24.3	27	14.9
Dnipropetrovsk oblast	1 642	1 031	62.8	287	17.5	324	19.7
Donetsk oblast	897	339	37.8	472	52.6	85	9.5
Zhytomyr oblast	186	94	50.5	42	22.6	51	27.4
Zakarpattya oblast	101	68	67.3	12	11.9	21	20.8
Zaporizhya oblast	465	254	54.6	100	21.5	111	23.9
Ivano-Frankivsk oblast	14	8	57.1	3	21.4	3	21.4
Kyiv oblast	513	258	50.3	135	26.3	120	23.4
Kirovohrad oblast	21	12	57.1	1	4.8	8	38.1
Luhansk oblast	56	25	44.6	15	26.8	15	26.8
Lviv oblast	635	379	59.7	99	15.6	157	24.7

Region/organization	Number of patients screened for the first time while enrolling under medical supervision	among them with CD4 immunosuppression level					
		0-350 cells/ mcl	%	351-500 cells/mcl	%	more than 500 cells/mcl	%
Mykolayiv oblast	788	518	65.7	130	16.5	140	17.8
Odesa oblast	1 636	980	59.9	304	18.6	352	21.5
Poltava oblast	77	43	55.8	13	16.9	22	28.6
Rivne oblast	164	85	51.8	42	25.6	37	22.6
Sumy oblast	121	65	53.7	16	13.2	40	33.1
Ternopil oblast	156	97	62.2	18	11.5	41	26.3
Kharkiv oblast	603	344	57.0	113	18.7	146	24.2
Kherson oblast	769	483	62.8	142	18.5	144	18.7
Khmelnyskyy oblast	121	63	52.1	31	25.6	27	22.3
Cherkasy oblast	0	0	0.0	0	0.0	0	0.0
Chernivtsi oblast	0	0	0.0	0	0.0	0	0.0
Chernihiv oblast	269	138	51.3	57	21.2	74	27.5
Kyiv city	1 462	864	59.1	238	16.3	360	24.6
Okhmatdyt	9	1	11.1	7	77.8	1	11.1

Table 33. Coverage with testing on determining viral load for HIV-infected persons in Ukraine in 2016

Structure of the examined patients	Total number of examinations	% of examinations	Number of patients as of 01.01.2017	Number of patients examined at least once during the year	% of coverage with the examinations
Total, among them:	98 561	100	132 945	69 118	52.0
patients on ART	76 194	77.3	74 780	52 871	70.7
patients without ART	15 288	20.1	58 165	13 885	23.9
HIV-infected pregnant women	3 038	19.9	2 808*	2 362	84.1

*according to the number of newborn babies

Examined during the calendar year	Structure of examinations, %	In total examined persons, including.	receive ART		do not receive ART			
			number of patients	% of the examined persons	number of patients	% of the examined persons	number of pregnant women	% of the examined persons
First	70.1	69 118	52 871	69.4	13 885	90.8	2 362	77.7
Second	24.0	23 646	21 895	28.7	1 109	7.3	642	21.1
Third	1.2	12 221	1 165	1.5	38	0.2	18	0.6
Confirmation of the results	0.5	535	263	0.3	256	1.7	16	0.5
Total number of persons	100.0	98 561	76 194	100.0	15 288	100.0	3 038	100.0

Table 34. Summary data on virologic efficiency of ART for 2016

Region/ organization	Total number of screened persons, absolute No.	including with VL level (RNA copies/ml)					
		Efficiency		"Bleeps"		Failure	
		VL <40 copies/ml		VL from 40-1000 copies/ml		VL >1000 copies/ml	
		abs. no	%	abs. no	%	abs. no	%
Ukraine	49 497	39 699	80.2	5 047	10.2	4 598	9.3
Vinnitsya oblast	1 000	889	88.9	71	7.1	40	4.0
Volyn oblast	737	579	78.6	71	9.6	87	11.8
Dnipropetrovsk oblast	6 094	5 303	87.0	426	7.0	365	6.0
Donetsk oblast	2 863	1 248	43.6	1 282	44.8	333	11.6
Zhytomyr oblast	1 419	1 119	78.9	147	10.4	153	10.8
Zakarpattia oblast	190	137	72.1	23	12.1	30	15.8
Zaporizhya oblast	1 987	1 697	85.4	142	7.1	192	9.7
Ivano-Frankivsk oblast	613	476	77.7	72	11.7	65	10.6
Kyiv oblast	993	739	74.4	95	9.6	159	16.0
Kirovohrad oblast	2 307	2 025	87.8	114	4.9	168	7.3
Luhansk oblast	1 103	854	77.4	99	9.0	150	13.6
Lviv oblast	1 385	1 033	74.6	157	11.3	195	14.1
Mykolayiv oblast	4 451	3 566	80.1	398	8.9	487	10.9

Region/ organization	Total number of screened persons, absolute No.	including with VL level (RNA copies/ml)					
		Efficiency		"Bleeps"		Failure	
		VL <40 copies/ml		VL from 40-1000 copies/ml		VL >1000 copies/ml	
		abs. no	%	abs. no	%	abs. no	%
Odesa oblast	9 114	7 268	79.7	760	8.3	1 086	11.9
Poltava oblast	950	779	82.0	91	9.6	66	6.9
Rivne oblast	675	369	54.7	53	7.9	70	10.4
Sumy oblast	469	399	85.1	28	6.0	42	9.0
Ternopil oblast	246	144	58.5	56	22.8	46	18.7
Kharkiv oblast	1 554	1 323	85.1	106	6.8	125	8.0
Kherson oblast	1 503	1 299	86.4	84	5.6	120	8.0
Khmelnyskyi oblast	203	151	74.4	23	11.3	29	14.3
Cherkasy oblast	939	787	83.8	85	9.1	67	7.1
Chernivtsi oblast	240	215	89.6	7	2.9	18	7.5
Chernihiv oblast	1 570	1 306	83.2	92	5.9	172	11.0
Kyiv city	6 693	5 809	86.8	556	8.3	328	4.9
Okhmatdyt	199	185	93.0	9	4.5	5	2.5
Institute of Epidemiology and Infectious Diseases of the NAMS of Ukraine *							

*Information was not provided

Table 35. Report on screening the children born to HIV-positive mothers for the pro-viral DNA HIV-1 (for 2016)

Regions	Total number of screened children	Positive results	Children born in 2014-2015			Children born in 2016		
			total	screened twice	Positive results	total	screened twice	Positive results
Vinnitsya oblast	60	11	0	0	0	60	2	11
Volyn oblast	44	3	19	0	1	25	11	2
Dnipropetrovsk oblast	455	12	186	43	4	269	144	8
Donetsk oblast	270 (261+92)	10	82	14	1	188	86	9
Zhytomyr oblast	92	0	10	0	0	82	0	0
Zakarpattia oblast	14	0	4	1	0	10	4	0
Zaporizhzhya oblast	118	4	34	12	1	84	59	3
Ivano-Frankivsk oblast	21	11	2	0	0	19	16	11
Kyiv oblast	148	2	46	5	0	102	36	2
Kirovohrad oblast	85	2	17	0	1	68	37	1
Luhansk oblast	55	0	13	5	0	42	41	0
Lviv oblast	84	2+21	19	1	1	65	31	1+21
Mykolayiv oblast	202	2+41	82	24	1+1*	120	101	1+31
Odesa oblast	515	17+11	125	67	4	390	164	13+11

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Regions	Total number of screened children	Positive results	Children born in 2014-2015			Children born in 2016		
			total	screened twice	Positive results	total	screened twice	Positive results
Poltava oblast	74	0	30	6	0	44	17	0
Rivne oblast	59	0	6	3	0	53	19	0
Sumy oblast	43	0	14	0	0	29	0	0
Ternopil oblast	14	1	0	0	0	14	9	1
Kharkiv oblast	89	0	41	8	0	48	21	0
Kherson oblast	101	4+21	9	5	1	92	60	3+21
Khmelnyskyi oblast	44	3	8	2	1	36	17	2
Cherkasy oblast	63	3	14	6	0	49	10	3
Chernivtsi oblast	14	1	1	0	0	13	0	1
Chernihiv oblast	90	0	18	0	0	72	6	0
Kyiv city	277	7	82	30	2	195	188	5
Total	3 031	73+111	862	232	18+11	2169	1 079	55+101

¹discordant result to be confirmed

²data not received

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