

STATE INSTITUTION "PUBLIC HEALTH CENTER OF THE MINISTRY OF HEALTH OF UKRAINE"

# HIV Infection in Ukraine

# Newsletter No.51

published since 1991

### **TEAM OF AUTHORS**

#### UDC 616.98.578.828 (477)

Ihor Kuzin, Violetta Martzynovska, Zhanna Antonenko

### We would like to express gratitude for significant contribution to development of this document to the following specialists:

SI "Public Health Center of the MOH of Ukraine" – Kateryna Matiushkina, Aryan Andrianova, Serhii Hrabovyi (consultant), Maryna Zubko, Iryna Ivanchuk, Kateryna Terykh, Olha Klimova, Serhii Riabokon, Tetiana Krasnopolska, Andrii Mikhedko, Olesia Pohorielova, Kateryna Manhatova, Tetiana Biehlova

ICF "Alliance for Public Health" – Tetiana Saliuk, Oksana Pashchuk

#### CO "All-Ukrainian Network of PLHIV" - Tetiana Sosidko

In compliance with the Law of Ukraine No.3792-XII of 23.12.1993 "On Copyright and Related Rights", the use, reprint and quotation of the newsletter materials is allowed only if reference is made to the copyright of State Institution "Public Health Center of the Ministry of Health of Ukraine" and the source of the publication is indicated.

This document was published with support of the SILab project "Support for HIV Epidemiological Surveillance and Laboratory QM/QI systems of the Ministry of Health of Ukraine, Improvement of the Use of Strategic Information, and Public Health Capacity Building" that is implemented by PHC and funded by the U.S. Centers for Disease Control and Prevention (CDC) under the President's Emergency Plan for AIDS Relief (PEPFAR).

### CONTENT

List of Abbreviations
Section I. Eastern Europe & Central Asia10
Section II. WHO European Region11-16
2.1. Geographic distribution of new HIV diagnoses11
2.2. HIV transmission modes of new HIV diagnoses13
2.3. Late HIV diagnosis14
Section III. Ukraine's progress in achieving the 90-90-90 targets17-20
3.1. HIV treatment cascade in Ukraine17
3.2. HIV epidemic forecast and estimates of the size of PLHIV
Section IV. Review of HIV/AIDS epidemic in Ukraine
4.1. Results of seroepidemiological monitoring of the HIV spread <b>21</b>
<ul><li>4.1.1. Results of seroepidemiological monitoring among key populations at risk of HIV</li></ul>
4.1.2. Results of seroepidemiological monitoring among blood donors32
4.1.3. Results of seroepidemiological monitoring among people who sought medical help at HCFs
4.2. Recording cases of HIV35
4.3. Registration of HIV-positive people with HCFs40
4.4. AIDS incidence and mortality42

4
Section V. Key populations46-58
5.1. Implementing the transition to public funding of HIV-related services 46
5.2. Community-based prevention programs48
5.2.1. People who inject drugs49
5.2.2. Men who have sex with men <b>53</b>
5.2.3. Sex workers
5.2.4. Transgender people <b>57</b>
5.2.5. Prisoners <b>58</b>
Section VI. On the way to eliminating the mother-to-child transmission of HIV and syphilis59-65
6.1. HIV testing among pregnant women59

6.2. Early HIV diagnosis in children born to HIV-positive mothers ......61

6.3. Rate of mother-to-child transmission of HIV	62
6.4. The results of the study on prioritizing the factor to-child transmission of HIV in Ukraine	ctors influencing the mother- <b>63</b>

transmission of HIV, syphilis, HBV	. 65
6.6. Ukraine's preparation for validating elimination of the mother-to-child	<u> </u>
6.5. The results of the study on evaluating the completeness of PMTCT services provided at various HCFs in Ukraine	. 64

#### ANNEX 1

Table 1.	Generalized evaluation of the HIV/AIDS situation in Ukraine as of the end of
	2019 and projected indicators for the period up to 2025

#### ANNEX 2

Table 1.	Results of seroepidemiological monitoring (SEM) of the spread of HIV, by SEM codes, Ukraine, 2017-2019			
Table 2.	SEM results of the spread of HIV, by regions, Ukraine, 2019			
Table 3.	Rapid HIV testing, Ukraine, 2017-2019			
Table 4.	Detection of new HIV diagnoses by rapid HIV testing, Ukraine, 2017-2019			
Table 5.	Results of the SEM among key populations at risk of HIV, classified by codes 101.2, 102, 103, 104 and 105.2, by regions, Ukraine, 2019			
Table 6.	Results of the SEM among people who had heterosexual contacts with HIV- positive partners, by regions, Ukraine, 2019			
Table 7.	Results of the SEM among people who inject drugs, by regions, Ukraine, 2019			
Table 8.	Results of the SEM among people who had homosexual contacts, by regions, Ukraine, 2019			
Table 9.	Results of the SEM among people who have STIs or related symptoms, by regions, Ukraine, 2019			
Table 10.	Results of the SEM among people who are in detention facilities, including pre- trial detention centres, by regions, Ukraine, 2019			
Table 11.	Results of the SEM among donors of blood and its components, organs, tissues, other cells and biological fluids, by regions, Ukraine, 2019			
Table 12.	Results of the SEM among people with diseases, symptoms and syndromes under which HIV testing services are offered when seeking medical help in HCFs, by regions, Ukraine, 2019			
Table 13.	HIV incidence in Ukraine*			
Table 14.	Timeliness indicators of the registration of HIV-positive people with HCFs, Ukraine, 2019			

Table 15.	The degree of immunosuppression of PLHIV at the time of registration with HCFs, according to the results of CD4 lymphocyte count test, 2019			
Table 16.	People newly diagnosed with HIV at the age of 15-24 years			
Table 17.	Structure of HIV transmission modes among Ukrainian citizens (recorded cases)			
Table 18.	Officially recorded HIV infection cases among people who inject drugs, and their share of the total number of new HIV diagnoses			
Table 19.	Absolute number of HIV infection/AIDS diagnosis and incidence per 100,000, according to the data of registration of PLHIV with the HCFs as of 01.01.2020, by regions			
Table 20.	AIDS incidence in Ukraine			
Table 21.	Causes of death of HIV-positive people in Ukraine, according to the data of registration with HCFs			
Table 22.	AIDS mortality rate in Ukraine			
Table 23.	Total number of people receiving OST, by regions, Ukraine, 2019			
Table 24.	Implementation indicators for the Mother-to-Child HIV Transmission Prevention Program, by regions, Ukraine, 2019			
Table 25.	Results of the SEM among pregnant women, by regions, Ukraine, 2019			
Table 26.	Results of the SEM among pregnant women (primary screening)			
Table 27.	Implementation indicators for the Mother-to-Child HIV Transmission Prevention Program, by regions, Ukraine, 2019 (cont.)			
Table 28.	Number of new HIV diagnoses established by PCR-based assays in children born to HIV-positive mothers (per 100,000 live births)			
Table 29.	Rate of mother-to-child HIV transmission (RMTCT) in Ukraine, according to the results of early and serological diagnosis, 2019			
Table 30.	Children born to HIV-infected women in health care facilities, 2019			
Table 31.	Total number of people on ART (by sources of funding) in Ukraine as of 01.01.2020			
Table 32.	Facilities and organizations providing ART			
Table 33.	Number of PLHIV on ART in the regions of Ukraine and ART coverage among patients linked to HIV care services as of 01.01.2020			

Table 34.	Number and percentage of PLHIV on ART
Table 35.	Virological efficacy data of ART in patients treated for 6 months or more as of 2019

#### ANNEX 3

Table 1.	Indicators of the National Report on Global AIDS Response Progress in 20				
	2019 (GAM)				

## LIST OF ABBREVIATIONS

OGSU	Obstetrics and Gynaecology Service of Ukraine
ART	Antiretroviral therapy
CO	Charity organization
VH	Viral hepatitis
HIV	Human immunodeficiency virus
VL	Viral load
WHO	World Health Organization
GF	Global Fund to Fight AIDS, Tuberculosis and Malaria
SCESU	State Criminal-Executive Service of Ukraine
PrEP	Pre-exposure prophylaxis
HCF	Healthcare facility
OST	Opioid substitution therapy
IBBS	Integrated biobehavioural survey
LM	Laboratory method of HIV detection
STI	Sexually transmitted infection
KPs	Key populations at risk of HIV
PWID	People who inject drugs
PLHIV	People living with HIV
MTB	Mycobacterium tuberculosis
ICF	International charitable fund
MDT	Multidisciplinary team
M&E	Monitoring and evaluation
MIS	Medical information system
LTCS	Linkage to HIV care services
IWG	Interagency working group
NRTI	Nucleoside reverse transcriptase inhibitor
NGO	Non-governmental organization
UN	United Nations

PCR	Polymerase chain reaction
PC	Primary care
PMTCT	Prevention of mother-to-child transmission of HIV
PrEP	Pre-exposure prophylaxis
HTSs	HIV testing services
SEM	Seroepidemiological monitoring
EUCA	Eastern Europe & Central Asia
DBS	Dried blood spot
AIDS	Acquired Immune Deficiency Syndrome
SW	Sex-worker
ТВ	Tuberculosis
ТР	Transgender people
UCPHC	Unified Clinical Protocol for Health Care
РНС	State Institution "Public Health Center of the Ministry of Health of
	Ukraine"
AIDS centre	AIDS prevention and management centre
RMTCT	Rate of mother-to-child transmission of HIV
MSM	Men who have sex with men
RT	Rapid HIV test
UNAIDS	Joint United Nations Program on HIV/AIDS
UNICEF	United Nations Children's Fund
CDC	U.S. Centers for Disease Control and Prevention
ECDC	European Center for Disease Control and Prevention
Fast track	UNAIDS Fast-Track Strategy to end the AIDS epidemic by 2030
GAM	Global AIDS monitoring
PEPFAR	The U.S. President's Emergency Plan for AIDS Relief
SyrEx	Electronic system for registering clients of HIV prevention projects
NCSH	National children specialised hospital "Okhmatdyt"
"Okhmatdyt"	
USAID	U.S. Agency for International Development
HIEID of the	L. V. Hromashskyi Institute for Epidemiology and Infectious Diseases
NAMS of Ukraine	of the National Academy of Medical Sciences of Ukraine

### SECTION 1 EASTERN EUROPE & CENTRAL ASIA<sup>1</sup>

Eastern Central Asia Europe and (hereinafter referred as EECA) – a region that geographically unites 29 countries, is one of three regions in the world where the HIV epidemic continues to grow. The number of new HIV infections between 2010 and 2019 increased by 72%. According to UNAIDS, at the end of 2019, there were an estimated 1.7 million people living with HIV (hereinafter PHWH) in Eastern Europe and Central Asia. In 2019, there were roughly 170,000 new HIV infections and 35.000 AIDS-related deaths<sup>2</sup>. The vast majority of people living with HIV in Eastern Europe and Central Asia live in Russia (70%), where new infections are on the rise, followed by Ukraine. Despite the fact the region's epidemic is concentrated predominantly among kev affected populations, yet there is low coverage of harm reduction and other HIV prevention programmes in some countries within the region. Besides, prevention programmes are under threat as international support for HIV responses decreases and domestic funding for HIV prevention fails to keep pace.

Unprotected sex leads to an increase in the number of new HIV infections and is today he leading cause of the spread of HIV. In addition, there is little research or recognition of the factors that contribute to the rise in new HIV infections among transgender people and MSM<sup>3</sup>.

High levels of stigma and discrimination against PLHIV and KPs still remain the main barriers

to accessing HIV services. At the end of 2019, in EACA countries, the indicator of achieving the UNAIDS global goal "by 2020, 73% of all people living with HIV worldwide will be virally suppressed" was 41% [34-46%]. To achieve the 90-90-90 targets, additional 530,000 PLHIV should be involved in treatment<sup>4</sup>

#### 70%

[61–79] people living with HIV who know their status.

#### **63%**

[52–71] people who know their HIV status who are on treatment.

#### 93%

[73–95]

#### people on ART who reached a VL level of less than 1000 RNA copies/ml

Despite all the difficulties, some EECA countries have made progress. For example, in 2016, Armenia and Belarus validated the elimination of mother-to-child transmission of HIV. The average cost of first-line ART in the EECA region has also dropped from nearly US \$ 2,000 per year to less than US \$ 200 per person per year, making scaling up of treatment more achievable<sup>5</sup>.

<sup>&</sup>lt;sup>1</sup> AVERT: https://www.avert.org/professionals/hiv-around-world/eastern-europe-central-asia

<sup>&</sup>lt;sup>2</sup> https://www.unaids.org/sites/default/files/media\_asset/2020\_aids-data-book\_en.pdf

<sup>3</sup> UNAIDS (2018) 'Global AIDS Update: Miles to go: closing gaps, breaking barriers, righting injustices'.

<sup>&</sup>lt;sup>4</sup> UNAIDS 2020 | REFERENCE.

<sup>&</sup>lt;sup>5</sup> UNAIDS (20 April, 2018) 'Update: Sixth Eastern Europe and Central Asia Conference on HIV/AIDS opens in Moscow'

### SECTION 2 WHO EUROPEAN REGION<sup>6</sup>

HIV epidemic which affects millions of people in Europe, particularly in the eastern part, remains a major unresolved public health concern. The European Centre for Disease Prevention and Control (hereinafter referred to as the ECDC) and the WHO Regional Office for Europe (hereinafter referred to as the WHO) jointly carry out enhanced HIV/ AIDS surveillance in 53 countries in the WHO European Region (hereinafter referred to as the Region). The states of the Region are grouped into three geographic areas: the West (23 countries), Centre (15 countries) and East (15 countries)<sup>7</sup>.

### 2.1. GEOGRAPHIC DISTRIBUTION OF NEW HIV DIAGNOSES

Although HIV infection is preventable, significant HIV transmission continues across

 TABLE 1. EPIDEMIOLOGICAL CHARACTERISTICS OF NEW HIV AND AIDS DIAGNOSES REPORTED

 IN THE WHO EUROPEAN REGION, THE WEST, CENTRE AND EAST OF THE WHO EUROPEAN

 REGION, 2018

INDICATORS	WHO EUROPEAN REGION	WEST	CENTER	EAST
Number of new HIV diagnoses	141,552	23,483	6,519	111,550
Incidence rate per 100,000 population	16.2	6.0	3.3	44.8
Percentage of people aged 15-24	8.8	10.3	13.5	6.0
Percentage of people aged 50 and older	17.5	21.4	14.8	14.6
Men-to-women ratio	1.8	2.9	5.6	1.6
HIV TRANSMISSION MODES, %				
Homosexual contacts	22.6	40.7	28.3	4.4
Heterosexual contacts (men)	25.9	15.8	20.5	36.6
Heterosexual contacts (women)	23.8	18.0	7.5	33.4
Injecting drug use	11.8	3.1	2.5	22.1
Mother-to-child transmission of HIV	0.6	0.7	0.4	0.6
Unknown	15.0	21.2	40.7	2.8
AIDS AND LATE HIV DIAGNOSIS				
Percentage of cases with CD4 <350 cells/mm <sup>3</sup>	52.8	48.8	54.6	55.5
Number of new AIDS diagnoses	14,227	2,549	857	10,821
New HIV diagnoses per 100,000	2.0	0.6	0.4	10.5

<sup>&</sup>lt;sup>6</sup> https://www.ecdc.europa.eu/sites/default/files/documents/hiv-surveillance-report-2019.pdf

<sup>&</sup>lt;sup>7</sup> Geographic areas of the WHO European Region (53 countries are the following: West Andorra, Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Israel, Italy, Luxembourg, Malta, Monaco, the Netherlands, Norway, Portugal, San Marino, Spain, Sweden, Switzerland, Great Britain. Center: Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Czech Republic, Hungary, Macedonia, Montenegro, Poland, Romania, Serbia, Slovakia, Slovenia, Turkey. East: Armenia, Azerbaijan, Belarus, Estonia, Georgia, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Moldova, the Russian Federation, Tajikistan, Turkmenistan, Ukraine, Uzbekistan.



#### FIGURE 1. GEOGRAPHICAL DISTRIBUTION OF NEW HIV DIAGNOSES REPORTED IN THE WHO EUROPEAN REGION (WEST, CENTER, EAST), 2018

the WHO European Region. In 2018, 141.6 thousand of new HIV cases were reported in 50 out of 53 countries in the Region, 16.2 per 100,000 (Table 1).

2018 has been marked as the first year of halted growth in new HIV diagnoses for the WHO European Region, mainly due to the continuous decrease in the West and the overall stabilising trend in the East.

The number of people newly diagnosed with HIV in the WHO European Region has increased by 22% over the last decade In general, the data show that today **the number of people infected with HIV exceeds the number of diagnosed cases.** This means that a growing number of people are living with undiagnosed HIV infection. At the same time, in the countries of the European Union/European Economic Area, over the same period, the number of new diagnoses of HIV infection declined by 17%, and the percentage of people living with undiagnosed HIV infection is declining.

Of the 141.6 thousand people diagnosed in 2018, **79% were diagnosed in the East**, 16% in the West and 5% in the Centre of the Region (Figure 1). Geographic distribution of HIV incidence was also marked by highest rates in the East (44.8 per 100,000 population), being 8.1 times higher than in the West (6.0 per 100,000 population, corrected for reporting delay) and 13.5 times than in the Centre (3.3 per 100,000 population).

In 2018, the highest rates of new HIV cases per 100,000 were reported in the Russian Federation (59.0), Ukraine (37.3), Belarus (25.2) and Moldova (22.3) and the lowest rates were reported in Bosnia and Herzegovina (0.8) and Slovenia (1.7).

The rate of new HIV diagnoses in the Region has increased by 14% over the past 10 years, from 14.2 per 100,000 in 2009 (118.5 thousand cases) to 16.2 per 100,000 in 2018 (141.6 thousand cases). The increase is mainly driven by

the continuing upward trend in the East, where the rate increased by 30%, from 34.4 per 100,000 (85.0 thousand cases) to 44.8 per 100,000 (111.6 thousand cases). In the Centre, the rate increased 2.2-fold, the largest relative increase among the three geographical areas, from 1.5 to 3.3 per 100,000 between 2009 and 2018, while in the West it decreased by 23%, from 7.6 to 6.0 per 100,000 over the same period

The reported HIV incidence was higher among men than among women in all age groups (except for people under 15 years of age) and amounted to 21.6 and 11.2 per 100,000, respectively. The male-to-female ratio for newly diagnosed HIV infections was 1.8, lowest in the East (1.6), and highest in the Centre (5.6).

### 2.2. HIV TRANSMISSION MODES OF NEWLY DIAGNOSED CASES OF HIV

The predominant HIV transmission modes differed by geographic area, indicating the heterogeneity of the HIV epidemic across Europe.

The main HIV transmission modes in the EU/EEA were sex between men, and in the East of the Region, heterosexual transmission and injecting drug use (Figure 2).

The distribution of new HIV infections in the Region by transmission modes is as follows: heterosexual sex – 50%, with 12% of these cases were reported in people originating from countries with generalized HIV epidemics outside of the Region, while 23% were infected through sex between men, 12% through injecting drug use and 0.6% through mother-to-child transmission. Information about transmission mode was unknown or missing for 15% of the new diagnoses

The transmission in **the East** was driven by a rapid rise in sexual transmission, increasing by 57% for heterosexual transmission and seven-fold for transmission through sex between men. With

#### FIGURE 2. COMPARISON BY TRANSMISSION MODE OF NEWLY DIAGNOSED CASES OF HIV REPORTED IN THE WHO EUROPEAN REGION (THE WEST, CENTRE AND EAST), 2018



heterosexual transmission the increase was considerably larger among men (118% increase) than women with heterosexual transmission (20% increase). Transmission through injecting drug use, while still substantial, decreased by 46% compared to the previous year, it continues to remain at a fairly high level – accounting for about 20% of HIV transmissions. This figure is higher than the average in five countries: Lithuania (40%),

(24%) and Ukraine (24%). In **the Centre**, new diagnoses in people infected through sex between men doubled between 2009 and 2018. This was the predominant mode of transmission in 12 of the 15 countries, while heterosexual transmission increased by 36% Transmission through injecting drug use has levelled off after an outbreak in Romania during 2011– 2013, resulting in an overall increase of 6% in comparison with the 2009 level.

Latvia (35%), Kazakhstan (29%), Estonia

In **the West**, heterosexual transmission continued its steady decline and decreased by 37% over the 10-year period overall. Injecting drug use-related transmission decreased by 38% between 2009 and 2018 and is now decreasing again after a peak in 2012 caused by an outbreak in Greece In 2009-2019, number of new HIV diagnoses due to sex between men declined by 21%. Against the background of an overall decline of the number of HIV infections with known transmission modes, new HIV diagnoses with unknown transmission mode increased by 30% in the West

The largest proportion of new diagnoses in the 49 reporting countries were in the age group 30–39 years (35%), while 9% were young people aged 15–24 years and 18% were 50 years or older at the time of diagnosis.

#### 2.3. LATE HIV DIAGNOSIS

Late HIV diagnosis remains an urgent challenge in the Region. Among those newly diagnosed aged over 14 years for whom information about CD4 cell count at the time of HIV diagnosis was available, over half (53%) were late presenters, with CD4 cell counts below 350 cells per mm<sup>3</sup>. including 31% with advanced HIV infection (CD4 <200 cells/mm<sup>3</sup>). Late diagnosis rates varied across the Region, accounting for 56% of the total number of detected diagnoses in the East, 55% in the Center and 49% in the West, respectively.

The percentage of people newly diagnosed who were late presenters (CD4 <350/mm<sup>3</sup>) varied across transmission categories and age groups but was highest for people with reported heterosexual transmission – 57%; 60% for men with heterosexual transmission and 54% for women with heterosexual transmission, and injecting drug use – 53%, and lowest for men infected through sex with men – 41%. The percentage increased with age, ranging from 32% among people aged 15–19 and 20–24 years at diagnosis, to 66% among those aged 50 years or older.

In 2018, 14.2 thousand people were diagnosed with AIDS, reported in 48 countries (2.0 per 100,000). Between 2009 and 2018, newly diagnosed cases of AIDS were broadly stable, but varied across the Region:

• a constant rate of around 0.4 per 100,000 in the Centre

• a steady decline, in the West (from 1.6 to 0.6 per 100,000)

• almost doubling in the East between 2009 and 2011 (from 6.0 to 11.0 per 100,000) followed by a stabilization of the trend.

Among the countries of the East, high rates were recorded in Ukraine (20.9), Moldova (9.0) and Latvia (5.1).

### CONCLUSIONS

• An increasing trend in new HIV diagnoses was observed in almost half of the reporting countries in the WHO European Region, although this is at a slower rate than previously.

• In the East of the Region, there was a steady increase in the number of diagnosed cases of HIV related to sexual transmission.

• Many people throughout the WHO European Region were diagnosed late (53%), which was increasing their risk of HIV complications, HIV-related death and onward HIV transmission. At the same time, the stabilising AIDS trend observed since 2012 may be the result of a majority of countries in the East having now implemented treat-all policies, which aim to offer anyone living with HIV the opportunity to receive ART regardless of the stage of disease.

 Policy-monitoring in the Region indicates that implementation of communitybased testing, self-testing and voluntary partner notification are limited or nonexistent in many European countries.

• Nearly 90% of countries in the WHO European Region have a policy to provide treatment regardless of CD4 count, which is critical both for the health of people on treatment and for preventing further transmission of HIV. • However, in most European countries the reported use of PrEP is well below the perceived need. The 2011–2012 increase in HIV cases among people who inject drugs and continued reported local outbreaks in a number of countries demonstrate the need to maintain or scale up harm-reduction programmes.

• For the countries in the Centre, new diagnoses are increasing faster than in any other part of the WHO European Region. There is a very strong gender disparity in the rate of new HIV diagnoses in this part of the Region. With alarming increases among men, particularly MSM, compared with a fairly stable rate among women.

• Some countries underwent a transition to domestic financing of the HIV response after withdrawal of funding from the Global Fund to Fight AIDS, Tuberculosis and Malaria. This posed sustainability challenges, particularly in relation to the financing of HIV prevention programmes

· Downsizing the epidemic is possible through user-friendly prevention and testing assisted services, including partner notification, PrEP, HIV testing performed by trained lay providers and self-testing in line with WHO recommendations. All of these services should be integrated into national policies programmes and and then implemented.

• The large number of new diagnoses in people infected through injecting

drug use emphasises that evidencebased policies focused on key populations, including high coverage of harm-reduction programmes for people who inject drugs, remain critical to the HIV response in the eastern part of the Region.

• Robust surveillance data are critical for monitoring and informing the public

health response to the European HIV epidemic in an accurate and timely fashion. The number of countries conducting enhanced HIV surveillance reporting surveillance data at and European level has gradually increased over time. which is substantial contribution to monitoring progress towards the 90-90-90 and other global and regional targets both at the national and global levels.

### SECTION 3 UKRAINE'S PROGRESS IN ACHIEVING THE 90-90-90 TARGETS

In Ukraine, as well as at the global level, to measure progress in overcoming the HIV epidemic, the cascade of continuous HIV care is used, which consists of evaluating the sequential stages of HIV care (preventiondiagnosis-treatment), where the starting point for sequential analysis is taken for 100% the estimates of size of people living with HIV (hereinafter referred as PLHIV).



PLHIV linkage to HIV care services (registered with HCFs)

169,787

### 136,105

[73–95] PLHIV on ART

The cascade provides insight into the complex impact of strategies aimed at increasing the proportion of PLHIV with an established diagnosis, improving care after HIV diagnosis, increasing ART coverage, and reaching undetectable VL (less than 1000 RNA copies/ml).

### 3.1. HIV TREATMENT CASCADE IN UKRAINE

The epidemic in Ukraine is estimated as the second largest HIV epidemic in Eastern

Figure 3. HIV diagnosis and treatment cascade, Ukraine (2013, 2019)<sup>9</sup>



Europe and Central Asia, however, in 2019, Ukraine was one of the few stated in the region to achieve success in ensuring the effectiveness of ART and is significantly closer to target "90% of all PLHIV who know their status receive ART."

**68%** people from the estimated number of PLHIV in Ukraine know their status: 169,787 people are officially registered with HCFs and linkage to HIV care services (Figure 3). Although the number of recorded HIV cases in Ukraine is constantly increasing, every third HIV-positive person still either does not know his/her HIV status, or is not linkage to HIV care services and, accordingly, does not receive ART. To achieve the target of increasing the proportion of PLHIV who know

<sup>&</sup>lt;sup>9</sup> Including data from the Autonomous Republic of Crimea, City of Sevastopol, and territories of the Donetsk and Luhansk regions, temporarily uncontrolled by the Government of Ukraine.

their status to 90% in 2020, another 56,000 people living with HIV should be diagnosed and linked to HIV care services.

80% of people living with HIV who know their status and linkage to HIV care services receive ART – 136,105 (Figure 3). The result obtained at this stage of the cascade of medical services for PLHIV demonstrates the most tangible progress in Ukraine. The number of PLHIV covered by treatment from among people with known HIV-positive status has doubled over the past 5 years. To achieve the target of ensuring treatment coverage of 90% of people who know their status, it is necessary to involve in ART at least 16,600 PLHIV already linkage to HIV care services<sup>10</sup>

94% of PLHIV on ART reached an undetectable VL level – 127,817, which indicates a high level of adherence to treatment and a reduced risk of HIV transmission (Figure 3). By the end of 2019, in the majority of PLHIV receiving treatment, the VL level had dropped to <1000 RNA copies/ml.

When the three-pronged 90-90-90 target is met, at least 73% of PLHIV worldwide will have viral suppression (Figure 4). Modelbased analysis suggests that achieving these targets by 2020 will allow the world to end the AIDS epidemic by 2030, which in turn will lead to significant improvements in health and economies<sup>11</sup>. In Ukraine, as of the end of 2019, increase in this indicator amounted to 51%.

At the end of 2019, Ukraine demonstrated much better progress in achieving "90-90-90 targets" compared to other countries of the EECA region, and moved closer to the global level.

### 3.2. HIV/AIDS EPIDEMIC IN UKRAINE AND ESTIMATES OF THE SIZE OF PLHIV

Model-based analysis with consideration to all available up-to-date data is an additional source of information for

#### FIGURE 4. ACHIEVING UNAIDS GLOBAL TARGET "BY 2020, 90% ON ANTIRETROVIRAL THERAPY WILL HAVE SUPPRESSED VIRAL LOADS", 2019



monitoring national and global HIV epidemics, as well as managing prevention and treatment programs. The national and regional estimates were obtained using Spectrum program (version 5.88 beta 19) recommended by the UUNAIDS/WHO Working Group on Global HIV/AIDS and STI Surveillance<sup>12</sup>.

According to results of the model-based analysis, the estimated number of PLHIV in Ukraine accounted for **250,000** [230,000-270,000] at the end of 2019. After a rapid increase of the size of PLHIV over the past 15 years, from 2005 to 2025 the total number remains almost unchanged and ranges from 220,000 to 250,000 people with a slight increase after 2017, which is mainly due to the influence of two factors – an increase in new HIV diagnoses against the background of a decline of the number of deaths of PLHIV(Figure 5).

<sup>&</sup>lt;sup>10</sup> For more details, please refer to the link below: https://www.unaids.org/ru/resources/909090

<sup>&</sup>lt;sup>11</sup> UNAIDS: 90-90-90 An ambitious treatment target to help end the AIDS epidemic

<sup>12</sup> http://spectrumbeta.futuresinstitute.org

#### FIGURE 5. NUMBER OF PEOPLE LIVING WITH HIV, UKRAINE (MODEL-BASED ANALYSIS)



An estimated **13,000** people were infected with HIV in 2019 [10,000–15,000], of which about 64% were men. The vast majority (about 9,000–70%) of new infections were associated with injecting drug use (Figure 6).

Historically, the number of new HIV diagnoses grew rapidly in the 1990s, peaking in 1999-2000 (30,000), experiencing then a subsequent gradual decline due to the gradual introduction of prevention programs aimed at reducing the spread of HIV among key populations. After 2010, the decline of the number of HIV diagnoses almost stalled and resumed slowly only after 2017 as a result of increased availability of ART. The results of advanced forecasting indicate that if 90% of PLHIV are covered with ART, the number of new HIV diagnoses will decline by 1.7 times over the next five years.

The results of the model-based analysis on the number of PLHIV retrospectively allows us to identify two waves of the epidemic. The first peaked in 2008, and the second began in 2012 and will last at least until the end of the forecast period. Considering that in 2008 there was a change in the main HIV transmission modes, the first fast wave is associated



During the entire observation period, men were more actively involved in the epidemic than women. Their number reached peak in 2005, experiencing then a subsequent gradual decline until 2018 inclusive, but starting in 2019, the number of HIV-positive men began to slowly increase again. But if the first wave of epidemic was associated with the rapid spread of HIV among PWID, the majority of whom were men, in recent years a further increase in the number of PLHIV was again occurring at the expense of the male population, but now mainly through the sexual transmission (Figure 8).

According to the model-based analysis, **6,200 people** [4,700-8,000] living with HIV died of AIDS in 2019. The maximum mortality rate was observed between 2007 and 2009 with the estimated annual number of deaths at around 15,000 people AIDS mortality in Ukraine was declining rapidly since 2013, due to the scaling up of ART, and by the end of 2025 AIDS mortality in Ukraine declines sharply (Figure 9).

#### FIGURE 6. NEW HIV CASES (MODEL-BASED ANALYSIS)



The forecasting clearly demonstrated the positive ART impact on the prevention of AIDS mortality. (Annex 1, Table 1) Early HIV diagnosis will increase the effectiveness of available treatment, and have a positive impact on the reduction of AIDS complications and the increase of life expectancy and quality among PLHIV. When combined with preventive measures, in particular harm reduction programs among KPs, it is possible to significantly change the course of the epidemic towards reducing new HIV infections and ending deaths from HIVrelated diseases.







### **SECTION 4** REVIEW OF HIV/AIDS EPIDEMIC IN UKRAINE<sup>13</sup>

#### **KEY FACTS, 2019**

• In 2019, the rate of new HIV diagnoses amounted to 16,405 (16,357 Ukrainian citizens and 48 foreigners).

• In 2019, the HIV incidence rate was 42.5 [7.4–113.1] per 100,000, according to official registration data.

 In 2019, the index corresponding to the coverage of health care among HIV-positive people reached 82.6% [52.0–100].

• At the beginning of 2020, 137,176 HIVpositive people were linkage to HIV care services at HCFs – 355.1 per 100,000 adult population [52.1–765.0] and 4,431 children had an indeterminate HIV status.

Among HIV cases recorded in 2019:

• The majority of diagnoses were established among male population: the ratio of men to women was 6:4.

• The vast majority of people belonged to the age group of 25-49 y.o. (78.7%); and the number and percentage of people aged 50 and older is gradually increasing (16.3%).

• Sexual transmission prevailed in the structure of HIV transmission: heterosexual transmission accounted for 71% of cases, homosexual accounted for 3% of cases.

 $\bullet~59\%~$  of PLHIV had a CD4 level <350 cells/µl at the time of screening when seeking medical help.

AIDS incidence rate was 19.5 [2.5–58.9] per 100,000, the AIDS mortality rate – 7.7 [0.9–22.6] per 100,000.

• In 2019, 2,068 children with indeterminate HIV status born to HIV-positive women were

#### FIGURE 10 DYNAMICS OF HIV TESTING (PER 100,000 POPULATION) AND POSITIVITY RATE AMONG UKRAINIAN CITIZENS



 HIV infection rate (Percent of HIV + results per 100 checkups)

• registered with HCFs and linked to HIV care services, 2,216 children were deregistered when confirmed as HIV-negative.

### 4.1. RESULTS OF SEROEPIDEMIOLOGICAL MONITORING OF THE SPREAD OF HIV

According to the SEM , about 2.5 million people in Ukraine are screened for HIV annually (Annex 2, Table 1) In 2019, 2.5 mln

<sup>&</sup>lt;sup>13</sup> The information presented in this section does not include children born to HIV-positive women whose HIV status was indeterminate. The statistics of temporarily occupied territories of the Autonomous Republic of Crimea, City of Sevastopol and temporarily uncontrolled territories of Donetsk and Luhansk regions was not taken into account. Incidence rates of Donetsk and Luhansk regions were calculated based on the population of the territories controlled by the Government of Ukraine. or more details, please refer to the link below: https://www.unaids.org/ru/resources/909090





citizens of Ukraine were screened, which is 6% of the mid-year population of Ukraine. Number of screenings increased by 5% compared to 2018 and averaged 6,280 per 100,000 population (Figure 10). Positivity rate reported in the SEM declined to 0.88% (22,309 HIV-positive people according to the results of verification studies).

In terms of the HIV testing volume, there were significant differences at the regional level (Figure 11, Annex 2, Table 2). The leader in the HIV testing coverage was the city of City of Kyiv, where almost 10,500 people were tested for HIV per 100,000, and the Dnipropetrovsk region – 9.3 thousand, quite high rates were reported in the Odesa (8.4 thousand) and Volyn (8.2 thousand) regions.

The least number of people who were tested for HIV per 100,000, was observed in the western regions of Ukraine: Ternopil (3,600), Ivano-Frankivsk (3,700) and Lviv (3,700) regions.

The situation changed compared to 2018. In most regions, as in Ukraine as a whole, the number of tested people has increased, primarily in Vinnytsia, Chernivtsi and Zhytomyr regions (Table 2). In 2019, the testing volume decreased in 9 regions and in City of Kyiv, the highest decline by 9% was reported in the Mykolaiv region.

Thus, in the Vinnytsia region, which in 2019 showed the largest (17%) increase in the number of tested people, additional 6% new HIV diagnoses were established, and the relative proportion of donors and pregnant women among tested people decreased compared to 2018 from 69.7% to 57.8%.

In 2019, in the Chernivtsi region, on the contrary, the increase in testing by 16% was due to a twofold increase in the number of tested donors and a slight increase in the number of individuals tested on their own initiative.

In Lviv region, where in 2018 the proportion of donors and pregnant women among the tested people was a record high (78.9%), the situation has improved: testing volume inceased by 6%; the number of newly diagnosed cases of HIV during the year

and the proportion of donors and pregnant women among those tested declined to 72.8%.

In the Mykolaiv region, where the largest decrease in the volume of testing was observed, the situation is due to a significant reduction in the number of tests among all KPs, in particular by 2/3 among PWID (code 102) and sex workers (code 105.2).

The changes in the testing volume are very indicative of the data, where the percentage increase or decrease in the number of tests in 2019 relative to the indicators of 2018 is determined (Table 3).

Taking into account that Ukraine belongs to countries with a concentrated stage of the HIV epidemic, it should be noted that a decrease in the number of tested people among KPs according to the SEM can slow down the process of achieving target "90% of all PLHIV know their HIV status" (Figure 12).

Thus, in 2019, the volume of men tested under code 101.2 (people who had homosexual contacts with HIV-infected partners) declined critically. although. according to the SEM, the incidence rate among this group is quite high and increased to 8.4% from 4.9% in 2018. In 2019, only 499 people were tested, which is 8% of the number of those tested under this code in 2018 (5,966 people). Accordingly, this led to a 7-fold decline of the number of new HIV diagnoses established in 2019 from 293 to 42.

The number of men tested under the code 103 (people who had homosexual contacts with partners whose HIV status was unknown) declined from 42,164 to 25,520 people, which was 61% of the number tested using this code in 2018. The positivity rate among the tested people was 1.5% (1.1% in 2018). Accordingly, the number of new HIV diagnoses also declined from 450 to 386.

It should be noted that in 2019, according to the SEM, the share of donors and pregnant women tested for HIV decreased from 50.9% (2018) to 47.9%. This was mainly due to the relative increase in the number of people tested for clinical indications

# **TABLE 2.** CHANGE IN THE HIV TESTINGVOLUME BY REGIONS, UKRAINE, 2019COMPARED TO 2018 (%)

No.	Region	%
1	Vinnytsia	17%
2	Chernivtsi	16%
3	Zhytomyr	15%
4	Chernihiv	14%
5	Donetsk	14%
6	Kherson	12%
7	Dnipropetrovsk	12%
8	Ternopil	11%
9	Odesa	10%
10	Kyiv	9%
11	Luhansk	8%
12	Lviv	8%
13	Zaporizhzhia	7%
14	Kharkiv	5%
15	Total Ukraine	5%
16	Khmelnytskyi	3%
17	Rivne	-1%
18	Ivano-Frankivsk	-1%
19	Poltava	-3%
20	City of Kyiv	-3%
21	Kirovohrad	-3%
22	Volyn	-3%
23	Cherkasy	-4%
24	Zakarpattia	-7%
25	Sumy	-8%
26	Mykolaiy	-9%

Region	100	101.2	102	103	104	105.2	113	114	116
Total Ukraine	5	-92	-26	-39	-7	-33	36	-6	7
Vinnytsia	17	0	75	0	33	22	49	-13	3
Volyn	-3	> 100	-90	-75	-49	-99	-17	-70	11
Dnipropetrovsk	12	-27	-3	-74	4	-10	39	87	87
Donetsk	14	-83	-88	-97	-41	-99	> 100	-41	17
Zhytomyr	15	> 100	19	21	-12	33	-2	-68	12
Zakarpattia	-7	> 100	15	-82	-44	31	-6	-38	-14
Zaporizhzhia	7	56	-64	-94	4	-91	38	> 100	13
Ivano-Frankivsk	-1	0	-52	-61	-20	86	5	13	2
Куіv	9	-99	26	-76	-19	30	> 100	-25	-10
Kirovohrad	-3	-100	-85	> 100	>1	-100	5	69	20
Luhansk	8	>1	75	20	-27	> 100	-6	-46	-12
Lviv	8	> 100	-23	-4	48	-27	18	7	24
Mykolaiv	-9	0	-67	-39	-43	-68	57	55	-11
Odesa	10	-99	-88	-83	9	-97	> 100	-84	17
Poltava	-3	> 100	> 100	> 100	-35	35	17	43	-49
Rivne	-1	-100	22	-5	-29	27	5	19	-3
Sumy	-8	100	-50	-60	2	-55	-17	66	-9
Ternopil	11	0	51	12	-45	37	10	28	38
Kharkiv	5	>1	29	33	-8	8	4	20	3
Kherson	12	0	36	33	-2	> 100	37	-35	-2
Khmelnytskyi	3	0	-17	50	-15	1	9	29	12
Cherkasy	-4	29	-89	-98	-13	-72	26	90	15
Chernivtsi	16	-100	-26	-23	1	-28	-14	-15	24
Chernihiv	14	-100	-41	-100	44	-37	> 100	-43	20
City of Kyiv	-3	> 100	-17	-29	18	-44	10	22	0

### **TABLE 3.** PERCENTAGE CHANGE IN THE HIV TESTING VOLUME CLASSIFIED BY SEM CODES,2019 COMPARED TO 2018, (%)

SEM CODE	DIFFERENT GROUPS OF PEOPLE TESTED FOR HIV	
100	Total Ukrainian citizens, including those classified by particular codes	
101.2	People who had homosexual contacts with HIV-positive partners	
102	People who inject drugs	
103	People who had homosexual contacts with partners whose HIV status was unknown	
104	People who have STIs or related symptoms	
105.2	Sex workers	
113	People seeking health care with diseases, conditions which meet the criteria for HIV testing	
	services	
114	People tested anonymously	
116	People tested on their own initiative	

increase in HIV testing volume

decline of HIV testing volume

(+ 137,800), people tested based on their own initiative (+33,300), people engaged in risky sexual behaviour due to having unprotected sex with casual sexual partners (+ 21,700) and people in detention facilities (+18,800).

Compared to 2018, the positivity rate declined from 0.95% to 0.88%. A similar decline occurred in most regions of Ukraine, in particular in the Kirovohrad (from 1.7% to 1.5%) and Chernihiv regions (from 0.9% to 0.7%) and in the City of Kyiv (from 1.2% to 1.0%).

The positivity rate was the highest when testing was conducted under codes 119 (deceased people) – 28.4% and 101 (people who had sex with HIV-positive partners) – 8.5%. Details are given in Annex 2.

The results of the population screening as part of the SEM, especially in KPs, should be considered comprehensively, both from the point of view of the possibility of assessing the level of HIV prevalence among certain population groups, and in the context of assessing the effectiveness of HTSs, which increases in case of improving access to HIV testing for a certain target population.

On average, in 2019, positivity rate, according



### FIGURE 12. PERCENTAGE OF KPS TESTING, 2019 COMPARED TO 2018

FIGURE 13. POSITIVITY RATE BY THE REGIONS, ACCORDING TO THE SEM, UKRAINE, 2019 (CODE 100)





FIGURE 14. THE PERCENTAGE OF HTSS PROVIDED USING RTS EXCLUDING DONORS (CODE 108) AND PREGNANT WOMEN (CODE 109), ACCORDING TO THE SEM, BY REGIONS, UKRAINE 2019

SEM, was 0.9% (Figure 13). The highest rates were reported in Odesa (1.7%), Kyiv (1.5%), Dnipropetrovsk (1.5%) and Kirovohrad (1.5%) regions. The least positivity rates (0.2%) were reported in Chernivtsi (0.2%) and Zakarpattia (0.1%) regions.

For mass HIV screening, laboratory methods (enzyme immunoassay and immunoblot) and rapid tests (RTs) are used. Although most of the studies in 2019 were carried out using laboratory methods (67%), the volume and effectiveness of the use of RTs in Ukraine are growing every year, since their use is an important component of improving the HIV treatment cascade According to the SEM, the proportion of people who received HTSs using RTs has tripled over the past 5 years from 13% in 2015 to 33% (Annex 2, Table 3).

Excluding donors (code 108) and pregnant women (code 109) the share of HTSs using RTs in 2019 increased compared to 2018 from 51.7% to 61.4%. However, the situation at the

regional level is significantly different. In most regions, the share of HTSs using RTs is rapidly growing and is becoming the main method of HIV screening (excluding testing among donors and pregnant women). Compared to 2018, the greatest changes occurred in the Donetsk region, where the share of RTs increased from 50.5% to 74.5%, as well as in the Kherson region from 41.2% to 62.3%, respectively.

In 2019, the largest percentage of HTSs using RTs was reported in the Luhansk (almost 100%), Kyiv (94.6%), Lviv (90.4%), Odesa (87.8%) regions and in the City of Kyiv (89.8%). Rapid tests were rarely used in the Zakarpattia (11.5%), Ivano-Frankivsk (14.0%), Volyn (18.5%) and Khmelnytskyi (18.9%) regions (Figure 14).

Positive rate when using HTSs increased annually and amounted to 1.4% in 2019 compared to 0.9% in 2015 (Annex 2, Table 4). It is important to note that 51% of all confirmed positive HIV test results in 2019 (code 100) were obtained using RTs (Figure 15).



#### FIGURE 15. THE NUMBER OF DIAGNOSES DETECTED BY LABORATORY METHODS (LMS), RAPID TESTS (RTS) AND POSITIVITY RATE OBTAINED USING RTS, ACCORDING TO THE SEM, UKRAINE, 2015-2019 (CODE 100)

#### **FIGURE 16.** THE STRUCTURE OF POPULATION GROUPS SCREENED WITH RTS, ACCORDING TO THE SEM , 2019



Most often, CT is used to examine people in prisons (97% of all examinations), people who had homosexual contacts with people with unknown HIV status (95%) and LVID (91%).

In 2019, a significant proportion of HTSs using RTs were HTSs for people with clinical indications when seeking medical help at a HCF (36.6%), people screened on their own initiative (17.5%) and injecting drug users (14.1%) (Figure 16).

#### 4.1.1.RESULTS OF SEROEPIDEMIOLOGICAL MONITORING AMONG KEY POPULATIONS AT RISK OF HIV

CODE 101.1 – PEOPLE WHO HAD HETEROSEXUAL SEX WITH HIV-POSITIVE PARTNERS

Among the priority activities of the National Strategy for HIV Testing in Ukraine for 2019-2030 is the provision of information and testing of PLHIV partners in HCFs of all levels and forms of ownership, as well as notification of the partner about the test result, depending on the

FIGURE 17. NUMBER OF PEOPLE TESTED

FOR HIV UNDER CODE 101.1 (LMS. RTS).

person's voluntary choice. These measures are in line with the recommendations of the WHO, which published guidelines on HIV selftesting services and HIV education in 2016 (Annex to the Consolidated Guidelines on HIV Testing Services, 2015).<sup>14</sup>

According to the SEM, in 2019, a total of 26,000 people were tested who were supposed to have heterosexual sex with HIV-infected partners. Most of the individuals from this group were tested using RTs (Fig 17). A total of 2,206 people (8.5%) tested positive for HIV, of whom the majority (73%) were screened using RTs (Figure 18).

The percentage of positive results using LMs was 10.4% (586 HIV-positive people), using RTs – 7.9% (1,620 HIV-positive people). These results indicate a high level of HIV prevalence among partners of PLHIV.

In 2018, Ukraine launched a large-scale project to accelerate efforts to combat HIV/AIDS-HealthLink, covered which 12 priority regions of Ukraine with the heaviest burden of the epidemic. Within the framework of this project, special attention is paid to sexual partners of PLHIV by improving access to prevention and treatment quality services, as well as reducing stigma and discrimination among PLHIV from health workers. The project is being implemented by CO "100 PERCENT LIFE" in partnership with ICF "Alliance for Public Health" with financial support from the United States Agency for International Development (USAID).

In 2018-2019, in Ukraine, within the framework of the ACCESS Pro project "Access of Communities to HIV care and Treatment Services Through Modern Information Systems and Better Communication with Services. Within the Framework of the PEPFAR program (CDC)", the active introduction of index testing on the initiative of a medical worker at HCFs was initiated, in which HTSs are offered to partners and family members of an HIV-positive person who was newly



diagnosed with HIV. With this aim the "Partners" module in the MIS HIV system was modernized. The results obtained indicate the high efficiency of index testing (hereinafter referred to as IT), due to which 3,583 partners of PLHIV whose HIV status was unknown were tested for HIV in 12 months, of which 627 (17%) people were HIV-positive and 534 of them started ART.

<sup>&</sup>lt;sup>14</sup> https://www.euro.who.int/ru/health-topics/communicable-diseases/hivaids/publications/2016/consolidated-guidelines-on-hiv-testing-services-2015

#### FIGURE 19. NUMBER OF PWID TESTED FOR HIV UNDER CODE 102 (LMS, RTS ), 2019



#### CODE 102 – PEOPLE WHO INJECT DRUGS

As is known, HIV incidence and prevalence rates among PWID in Eastern Europe, and in particular in Ukraine, remain high. Consequently, increasing the coverage of HTSs is one of the priority measures to slow down the epidemic among people PWID, along with ensuring access to harm reduction programs. According to the latest d biobehavioural survey among PLHIV, HIV prevalence is high in Ukraine (22.6%), but only 58% of PLHIV know their HIV-positive status.<sup>15</sup>

In 2019, within the framework of the SEM, under code 102 128,000 PWID were tested, which is a quarter less than in 2018. In 91% of cases, HTSs were provided using RTs (Fig 19). A total of 2,662 PWID (2.1%) tested positive for HIV, of which the majority (70%) were screened using RTs (Figure 20).

The proportion of positive results when using LMs was 6.6% (801 HIV-positive) and 1.6% when using RTs (1,861 HIV-positive). According to the SEM, the highest HIV prevalence rates among PWID was reported in Kirovohrad (24.7%), Odesa (11.8%) and Volyn (8.3%) regions (Annex 2, Table 7).

Compared to the previous year, the number and percentage of HIV-positive people among PWID increased, which also indicates a high level of HIV prevalence among PWID and the need to further ensure unhindered access to HTSs, in particular using RTs.

#### PEOPLE WHO HAD HOMOSEXUAL SEX WITH HIV-POSITIVE PARTNERS (CODE 102.2) AND PEOPLE WHO HAD HOMOSEXUAL CONTACTS WITH PARTNERS WHOSE HIV STATUS WAS UNKNOWN (CODE 103)

According to UNAIDS, men who have sex with men (MSM) are about 20 times more likely to be infected with HIV than the general population. According to the results of the latest biobehavioural survey (2017), HIV prevalence among MSM in Ukraine was 7.5%. Coverage of HIV testing among MSM was not high. Only 45% of MSM were tested within the last 12 months or knew about their HIV-positive status.<sup>16</sup>

In 2019, within the framework of the SEM, a total of 26,000 MSM were tested (499 under

 $^{15} \ http://aph.org.ua/wp-content/uploads/2018/07/OSNOVNI-REZULTATI\_A4\_03.02.2020\_Cajt.pdf$ 

<sup>16</sup> http://aph.org.ua/wp-content/uploads/2019/08/MSM\_Report\_22.10.2019\_Sait.pdf

code 101.2 and 25,500 under code 103), which is one third less than in 2018. In 95% of cases, HTSs were provided using RTs 21).

Of those examined, 428 (1.6%) people tested positive for HIV, of whom the majority (75%) were tested using RTs (Figure 22). Positivity rate when using LMs was 8.7% (106 HIV-positive) and 1.3% when using RTs (322 HIV-positive).

In 2019, HIV incidence rate among MSM in the regions fluctuated significantly, mainly depending on the testing volume, but half of new HIV diagnoses were established in the City of Kyiv (220). Compared to the previous year, significantly fewer MSM were tested and diagnosed with HIV, but the HIV prevalence rate did not decline.

In five regions, not a single MSM was diagnosed with HIV, which rather indicates that it is difficult to provide HTSs to men, in particular at the stage of identifying risks and determining the possible transmission mode. See Annex 2, Table 8 for SEM indicators among MSM in 2019 by regions

As before, through manifestations of stigma on the part of society the group of MSM remains difficult to reach for prevention programs, however, it requires maximum efforts to ensure unhindered access to HTSs using modern diagnostic methods, in particular, saliva testing for HIV.

### CODE 104 – PEOPLE WHO HAVE STIS OR RELATED SYMPTOMS

The annual increase in the number of sexually transmitted HIV infections indicates risky sexual behaviour among the population. Therefore, the detection of HIV among patients with sexually transmitted infections (hereinafter referred to as STIs) is an important component of prevention programs among the population.

The level of HIV infection among people who have STIs or related symptoms (code



104) in Ukraine over the past 5 years has remained almost unchanged at 1.0%. In 2019, within the framework of SEM, a total of 40,000 people with STIs were screened for HIV, of which 43% using RTs (Figure 23).

Among the screened people, 352 (0.9%) tested positive for HIV. Although the majority of individuals (57%) were tested using LMs, the practice of using RTs is spreading annually (Figure 24). Positivity rate using LMs was 0.8% (180 HIV-positive) and 1.0% using RTs (172 HIV-positive).

The highest HIV prevalence rates among people with STIs were reported in Lviv (2.2%),



Poltava (2.1%), Zhytomyr (1.8%) regions and the City of Kyiv (1.7%). See Annex 2, Table 9 for SEM rates among people with STIs in 2019 by regions

49%

#### CODE 105 – PEOPLE ENGAGED IN RISKY SEXUAL BEHAVIOUR

Under this code HTSs are reported when provided to the following categories: 105.1 – people who had unprotected sex with casual sexual partners and 105.2 – people providing sexual services for consideration.

HIV incidence among people engaged in risky sexual behaviour

(code 105) is slowly declining every year and amounted to 1.1% in 2019 (1.3% in 2015), but with an increase in the number of people screened for HIV, the absolute number of people diagnosed with HIV increases. The expansion of HTSs for these categories of the population is due to the introduction of RTs, the number of which has doubled over the past 5 years. Most HIV-positive people are usually diagnosed with HIV when tested under code 105.1 (98% of all people who tested positive for HIV when screened under code 105 in 2019).

In 2019, the highest HIV incidence rates among people engaged in risky sexual behaviour were reported in Kyiv (2.9%) and Odesa regions (2.8%). In Chernihiv region, 1.1% of positive results were reported, however, the share of people screened under code 105 reached 27% of all people diagnosed with HIV in the region.

The HIV testing volume across the regions differ significantly. However, in such regions as Kyiv, Poltava, Kharkiv and Khmelnytskyi the HIV testing volumes of people engaged in risky sexual behaviour are extremely small. Taking into account the current epidemic situation in Ukraine, when the sexual transmission is gaining more and more epidemic significance, a decline of the testing volume of this population is unacceptable.

In 2019, a total of 147,000 people engaged in risky sexual behaviour were tested for HIV, among whom 1,652 tested positive for HIV (1.1%). RTs were used in screening two thirds of them (Figure 25).

The effectiveness of testing (the proportion of HIV-positive results) using LMs and RTs is almost the same, as indicated by the same ratio of the proportion of screened individuals and people diagnosed with HIV (Figure 26).

As part of improving the SEM, since 2013, Ukraine has been monitoring the results of HIV testing among people providing sexual services for consideration (code 105.2). In 2019, HIV incidence rate among this group amounted to 0.2% (among the 19,000 screened, only 34 people were diagnosed with HIV). However, according



to the 2017-2018 d biobehavioural survey, HIV prevalence among sex workers (hereinafter referred to as SWs) significantly exceeded the SEM data under code 105.2 and amounted to 5.2%. Such differences in prevalence may be indicative of the fact that for most regions the availability of HSTs for SWs is low.

The rates of linkage to HIV care services of HIV-infected women who provide sexual services for consideration also does not correspond to the actual situation in terms of HIV incidence and prevalence due the refusal of these individuals to disclose their SW status.

#### CODE 112 – PEOPLE IN DETENTION FACILITIES, INCLUDING PRE-TRIAL DETENTION CENTERS

People in detention facilities are among the most vulnerable to socially dangerous infectious diseases. HIV prevalence among the prisoners is usually several times higher than among the general population.

According to the latest d biobehavioural survey, in 2019, HIV prevalence among the prisoners declined from 15% to 8.9%, compared to 2009. The highest HIV incidence rate among the prisoners was recorded in the South-East regions (colonies located



in the Dnipropetrovsk and Zaporizhzhia regions) – almost 16%.

According to the SEM, in 2019, 53,000 people were screened for HIV in the institutions of the State Criminal-Executive Service of Ukraine (hereinafter referred to as SCESU), of which 1,433 (2.7%) results were positive (3.0% in 2018). In 97% of cases, RTs were used for HIV testing of the prisoners (Figure 27-28).

The effectiveness of HTSs when using LMs is significantly higher and amounts to 39.5% (624 HIV-positive among 1580 tested). Among 51,500 people tested using RTs, 809 positive results were recorded with an effectiveness rate of 1.6%. The volumes and results of HTSs among the imprisoned are shown in Annex 2, Table 10.

#### 4.1.2.RESULTS OF SEROEPIDEMIOLOGICAL MONITORING AMONG BLOOD DONORS

According to the SEM, over the past 5 years, the number of blood donor tests for HIV antibodies has been declining. Compared to 2015, their number declined by 13% (from 617,800 to 539,800). Accordingly, the share of testing code 108 declined from 26% to 21% of the number of all tests conducted. The same applies to the percentage of HIV-positive test results among this population, which declined from 2.5% to 1.4% of all positive results.



In 2019, among almost 540,000 donors tested, 320 people were found to have HIV antibodies. In 2019, the overall HIV incidence rate among donors (code 108) in Ukraine slightly decreased since 2018 and amounted to 0.06% (Figure 29). The highest HIV incidence rates under code 108 were reported in Odesa (0.17%) and Khmelnytskyi (0.1%) regions (Annex 2, Table 11).

Among 342,000 primary blood donors screened for HIV (code 108.1), 299 people (0.09%) were diagnosed with HIV. The most dangerous situation in detecting HIV among primary donors was observed in Odesa (0.25%), Ternopil (0.19%) and Chernihiv (0.17%) regions.

Among repeat donors (code 108.2), the number of which declined by 12% compared to 2015, in 2019, 9 people were diagnosed with HIV (in 2018 – 17). Accordingly, the HIV prevalence under code 108.2 declined from 0.01% in 2015 to 0.005% in 2019.

The number of tests conducted among donors of organs, tissues and other cells and biological fluids (code 108.3) is increasing annually and, in 2019, amounted to 6,889 people (2,810 in 2015), of which 95% were tested in the City of Kyiv. In 2019, HIV prevalence under code 108.3 was 0.17% (in 2018–0.1%)

#### FIGURE 28. NUMBER OF HIV-POSITIVE TEST RESULT UNDER CODE 112 (LMS, RTS)



#### 4.1.3.RESULTS OF SEROEPIDEMIOLOGICAL MONITORING AMONG PEOPLE SEEKING HEALTH CARE AT HCFS

As part of the reform of the health care system, the volume of HTSs provision to people seeking health care with diseases (code 113) is growing annually (Figure 30). Over the past five years, the total volume of HTSs provided at HCFs increased by 50% and, is still characterised by significant regional



#### FIGURE 30. NUMBER OF PEOPLE SCREENED FOR HIV AT HCFS (LMS, RTS), 2015-2019



differences in HIV prevalence (Annex 2, Table 12).

This period was marked by a tenfold increase in the use of RTs. Although the number of HIV-positive results in general did not change significantly, in 2019 two thirds of HIV diagnoses established at HCFs were detected using RTs (Figure 31). The approval of Order of the Ministry of Health of Ukraine of 05.04.2019 No.794 "On Improving the Quality Management System of Laboratory Research in the Field HIV/AIDS of Counteraction" (as amended by Order of the Ministry of Health of Ukraine of 02.28.2020 No.587) helped to optimize the testing process. Due to the changes made, it was possible to ensure the possibility of rapid HIV diagnosis and to optimize the accounting and reporting of HTSs.

Many factors support the use of RTs when screening people at the HCFs, including the completeness of the provision of HTSs at the time of screening, and a reduction in the time of diagnosis and acceleration of linkage to health care and ART. However, the practical application of RTs differs at the regional level, and still requires wider application in primary HCFs.





Thus, according to the SEM, in 2019, most of the positive HIV test results under code 113 were reported in the Kirovohrad region (4.5%). The share of people screened at HCFs amounted to 14% of all those tested for the year, while the number and percentage of people screened using RTs increased by and 50% compared to 2018. The measures taken made it possible not only to increase by almost a guarter the number of HIV diagnoses established at HCFs, but also to improve the coverage among people with newly diagnosed HIV in the region. A comprehensive evaluation of the SEM results in the Kirovohrad region testifies to the success in expanding HTSs, and, given the high level of HIV prevalence, the need for further development of HIV testing programs in HCFs.

For comparison, the experience of expanding HTSs using RTs in the Odesa region shows that, in 2019, the HIV testing volume under code 113 due to the large-scale introduction into practice of RTs increased three times compared to 2018 and amounted to 34% of all tested during the year. And although the effectiveness of testing decreased slightly, the number of newly diagnosed cases of HIV infection increased by 23%.

However, along with the successes in increasing the volume of HTSs in HCFs, the region did not

yet managed to improve the linkage to HIV care services of people diagnosed with HIV. These results generally indicate the existing opportunities and strong potential in improving the situation with the HTSs in the Odesa region.

In general, the general level dynamics of HIV incidence under code 113 in the country against the background of an increase in the testing volume tends to decline slowly, in particular, when with when using RTs. Among the positive signs is an increase in the number and proportion of HIV-positive results when using RTs. This should be taken into account when further introducing HTSs into medical practice at the initiative of a health care professional at HCFs of various profiles and in the context of the peculiarities of the epidemic process at the regional level.

#### 4.2. RECORDING CASES OF HIV

with HIV

Over the past years, on average, about 23 thousand cases of HIV infection were recorded in Ukraine, their number is slowly growing and amounted to 16,357 in 2019. This was an increase of 27% compared to 2015, when about 13,000 cases were recorded (Figure 32).

Among those recorded and, accordingly, linkage to HIV care services in 2019, only a third were the cases of relatively recent infection. For most people, the diagnosis of HIV infection is established after several years of being infected with HIV and sometimes already at the stage of clinical manifestations of AIDS.

In 2019, HIV incidence according to the official registration of confirmed cases was 42.5 per 100,000 population with the lowest rate in Zakarpattia region (7.4) and the highest rate in the Dnipropetrovsk (113.1) region (Figure 33).

The share of the regions in the increase in established and recorded HIV diagnoses differed significantly, which is due to the influence of many factors, in particular sociodemographic, epidemic and resource factors. Thus, among the 16,357 HIV diagnoses recorded in 2019, 55% were reported in 4 out of 25 regions of Ukraine: the Dnipropetrovsk (3,640), Odesa (2,322), Donetsk (1,503) regions and City of Kyiv (1,490). An increase in the number of PLHIV detected and linkage to HIV care services naturally leads to an increase in the recorded HIV incidence rate (Annex 2, Table 13).

In total, in Ukraine, HIV incidence increased from 40.8 to 42.5 per 100,000 population compared



### FIGURE 32. THE NUMBER OF PEOPLE DIAGNOSED WITH HIV, ACCORDING TO THE SEM , AND RECORDED CASES OF HIV, UKRAINE, 2010–2019



FIGURE 33. HIV INCIDENCE, BY REGIONS, UKRAINE, 2019

to 2018 (the rate of growth amounted to 4% (Table 4). The highest growth rates were reported in Kirovohrad (+ 42%) and Kherson (+ 36%) regions. HIV incidence rate in Volyn and Rivne regions significantly declined with an decline rates of -30% and -26%, respectively.

Taking into account the incidence rate, based on data from the official registration of HIV cases, changes in the indicator directly depend on such significant factors as the volume and effectiveness of HTSs, as well as the effectiveness of measures to involve HIVpositive people linkage to HIV care services A rational combination of all these factors will contribute to the achievement of the UNAIDS target "90% people living with HIV know their HIV status."

One of the weakest elements of the continuum of services for PLHIV in Ukraine over the years has been the stage of linking

HIV-positive people to HIV care services. The situation in the coverage of linkage to HIV care services among HIV-positive people is gradually improving, and, in 2019, through joint efforts of HCFs and NGOs, the country achieved a record high level of linkage to HIV care services among people with newly diagnosed HIV – 82.6% (Figure 34).

At the regional level, the rates of coverage of linkage to HIV care services among HIV-positive people differed significantly (Annex 2, Figure 35, Annex 2, Table 14). The highest rates were reported in the Luhansk (100%), Kherson (95%), Chernivtsi (93%) and Zaporizhzhia (93%) regions, the lowest in the Kyiv region (64%) and City of Kyiv (52%).

In six regions, the values of the indicators even exceed 100%, which rather indicates the difficulties in the preparation of reporting in terms of registration of identified cases of HIV infection (the annual report for 2019 included people who were diagnosed with HIV in previous years).
## **TABLE 4.** THE RATE OF INCREASE IN HIVINCIDENCE, BY REGIONS, UKRAINE, 2019COMPARED TO 2018 (%)

No.	Region	%
1	Kirovohrad	42%
2	Kherson	36%
3	Ternopil	26%
4	Dnipropetrovsk	19%
5	Donetsk	8%
6	Cherkasy	8%
7	Vinnytsia	7%
8	Kharkiv	5%
9	Poltava	5%
10	Total Ukraine	4%
11	Chernihiv	4%
12	Odesa	3%
13	Luhansk	3%
14	Chernivtsi	2%
15	Zhytomyr	-4%
16	Kyiv	-7%
17	Mykolaiv	-7%
18	Khmelnytskyi	-7%
19	Zaporizhzhia	-10%
20	Lviv	-10%
21	City of Kyiv	-11%
22	Ivano-Frankivsk	-11%
23	Sumy	-17%
24	Zakarpattia	-21%
25	Rivne	-26%
26	Volyn	-30%

FIGURE 34. COVERAGE OF LINKAGE TO HIV CARE SERVICES AMONG HIV-POSITIVE PEOPLE FROM THE NUMBER OF PEOPLE DIAGNOSED WITH HIV, ACCORDING TO THE SEM, UKRAINE, 2015-2019 (%)



Based on the data obtained from the screening the patients with newly diagnosed HIV in terms of the degree of immunosuppression by the CD4 level, it can be stated that the problem of late HIV diagnosis remains relevant for Ukraine. This indicates both the population's underestimation of their own risks of becoming infected with HIV and a lack of understanding of the importance of determining their own HIV status, and the delay by HIV-positive people in making a decision to receive ART.

In 2019, the CD4 test coverage rate among people registered with HCFs and linkage to HIV care services amounted to 92%. According to the test results, the degree of immunosuppression <350 cells/ $\mu$ l was diagnosed in 59% of cases. (Figure 36).

The smallest proportion of PLHIV with CD4 count <350 cells/µl registered with HCFs and linkage to HIV care services was reported in the Poltava (43%), Kirovohrad (49%) and Kharkiv (49%) regions, the largest – in Vinnytsia (70%) Zakarpattia (69%) and Mykolaiv (68%) regions (Annex 2. Table 15). However. it is recommended to make an overall evaluation of the indicators of the timeliness of registration of people HCF HIV-positive with sin а comprehensive manner, taking into account all available data. both statistical and programmatic.

The HIV epidemic in Ukraine is concentrated in cities. In 2019,





FIGURE 36. PERCENTAGE OF PLHIV WITH CD4 COUNT <350 CELL /ML AMONG PEOPLE WHO WERE SCREENED FOR HIV WHEN THEY WERE LINKAGE TO HIV CARE SERVICES, BY REGIONS, UKRAINE (%)



76% of newly diagnosed HIV cases was reported among urban population The gender structure of newly diagnosed HIV cases shows a gradual increase in the proportion of men, which amounted to 60% in 2019. In fact, every 3 recorded cases of HIV among men account for 2 cases among women.



Over the past 10 years, significant changes have occurred in the sex-age characteristics of the epidemic, primarily due to an increase in the number of cases among males, a decrease in the absolute and relative number of cases among people aged 15-24.

The age structure of new HIV diagnoses reported in 2019, as before, was dominated by the 25-49 age group (Figure 37), the number of which amounted to 12,867 people, and percentage of people registered with HCFs was 78.7% (2018–84.7%).

#### FIGURE 37. AGE STRUCTURE OF PLHIV WHO WERE NEWLY LINKAGE TO HIV CARE SERVICES, UKRAINE, 2019 (%)



Young people aged 15-24 years make an important age group for surveillance. In 2019, number of new HIV diagnoses in this group amounted to 733, which is three times less than in 2010. Accordingly, their share decreased from 13.4% to 4.5%. The indicators are slightly higher in the western regions of the country (Annex 2, Table 16). And this is the only age group in which the proportion of women prevails (55.8%).

The opposite trend was observed in older age groups. In 2019, the number of cases recorded among people over 50 years old compared to 2010 increased threefold and amounted to 2,666 (16.3%). The men-to-women ratio in this group remained unchanged, with a slight deviation towards males (53%).

Changes in the age structure may indicate, on the one hand, about the "aging" of the HIV epidemic, on the other hand, they confirm the tendency of late admission of HIVinfected people to HCFs, that is, most of the people over 50 years old among the newly recorded cases were infected a few years ago.

In the structure of HIV transmission modes (taking into account the rate of the motherto-child transmission of HIV), the sexual transmission prevails, which is constantly growing and amounted to 73.6% in 2019 (Annex 2, Table 17). Most of the people diagnosed with HIV reported heterosexual transmission mode, the share of which increased from 55% to 71% over the past 10 years (Figure 38). However, there is a high probability that a certain number of HIVpositive people, when contacting the health care system, deliberately hide the facts of risky behaviour (unprotected homosexual sex or experience of injecting drug use, etc.).

The parenteral HIV transmission mode remained relevant. According to the official registration data, the proportion of infections as a result of injecting drug use increased in 2019 compared to 2018 from 24.0% to 25.8%.

The reasons for the epidemiological alertness are, first of all, the high degree of infection risk due to the peculiarities of injecting drug use, difficulties in attracting PWID in prevention programs, as well as high, compared with other KPs HIV prevalence level which amounted to 22.6% according to the latest d biobehavioural survey among PWID (2017). At the regional level, in 2019, the share of PWID among the newly diagnosed HIV cases ranged from 3.6% in the region 39.9% Chernivtsi to in the Dnipropetrovsk region (Annex, Table 18). A significant share of newly diagnosed HIV cases among PWID was also reported in the Kharkiv (39.8%), Kyiv (32%) and Kherson (31.9%) regions. The lowest rates were traditionally recorded in the western regions of the country.



#### FIGURE 38. STRUCTURE OF HIV TRANSMISSION ACCORDING TO THE OFFICIAL HIV REGISTRATION DATA, 2010, 2019

The MSM group is continuing to acquire epidemic significance, the share of which, according to the SEM, is growing every year. However, due to the severity of identification of the homosexual transmission mode, it is obvious that the official data of new HIV diagnoses among MSM in Ukraine are significantly underestimated: In 2019, only 468 such cases were recorded (about 3% of all cases). It can be assumed that, due to the high level of stigmatization in the society, men who have sex with men (MSM) when diagnosing HIV are more likely to indicate with sexual contacts women as а probable risk of HIV infection.

Attention should also be paid to regional features. In 2019, the greatest number of new HIV diagnoses in people infected due to homosexual contacts was found in the City of Kyiv (204), Odesa (60), Dnipropetrovsk (34) and Lviv (24) regions. As a result, these regions account for almost 70% of all recorded HIV cases among MSM. No cases of infection among MSM were recorded in 4 regions. In addition, it is important to note that 6 out of 10 people infected due to homosexual contacts were

taken linkage to HIV care services referred by NGO social workers.

### 4.3. REGISTRATION OF HIV-POSITIVE PEOPLE WITH HCFS

As of 01.01.2020, 135,902 HIV-positive Ukrainian citizens and 228 foreigners were linkage to HIV care services at the HCFs. The rate of HIV incidence per 100,000 population was 355.1 and varied within the regions from the lowest value in the Zakarpattia region (52.1) to the highest – in the Odesa region (823.8). Taking into account the peculiarities of the course of HIV infection, the estimated indicator of PLHIV, which is based on the results of model-based analyses, is more objective, and amounted to 520.0 per 100,000 population.<sup>17</sup>

<sup>&</sup>lt;sup>17</sup> According to preliminary estimates (Spectrum), the estimated number of PLHIV in the government-controlled territories of Ukraine at the end of 2019 was about 201,000.

This indicator is a benchmark for strategic planning and a tool for assessing the results obtained over a certain period of time. Therefore, using data on the number of HIV/AIDS cases in routine practice, it should be understood that today 3 out of 10 HIV-infected people are not registered with HCFs. The situation at the regional level differs significantly both in the number of known cases of HIV infection and in terms of the incidence per 100,000 population (**Figure 39**)<sup>18</sup>.

In fact, half of all PLHIV who are linkage to HIV care services at HCFs were concentrated in 4 out of 25 regions – Dnipropetrovsk (24,504), Odesa (19,51tsk (11,753) regions and Kyiv (13,016).

In 2019, the highest rates of HIV prevalence per 100,000 population were

reported in Odesa (823.8), Dnipropetrovsk (765.0) and Mykolaiv (714.3) regions, the lowest in Zakarpattia (52.1), Ivano-Frankivsk (80.8) and Ternopil (89.0) regions (Annex 2, Table 19). Among children aged 0-18, 7,437 cases of HIV infection were reported (including 4,431 children with a diagnosis of HIV infection in the stage of confirmation), of which 864 were AIDS patients (Annex 2, Table 19.1).

• Features of the age and sex structure of PLHIV who are linkage to HIV care services the majority were men (54%)

• the oldest group was 25-49 years old (80.5%)

• 78% were urban residents

As of 01.01.2020 the number of AIDS patients amounted to 47,341 people (34.8% of all



#### FIGURE 39. THE NUMBER OF PLHIV WHO WERE LINKAGE TO HIV CARE SERVICES AT HCFS PER 100,000 POPULATION AS OF 01.01.2020, BY REGIONS, UKRAINE

<sup>17</sup> The indicator was calculated for the territories controlled by the Government on the basis of the state statistical reporting forms for 2019.

#### FIGURE 40. THE MAIN REASONS FOR DEREGISTERING PLHIV WITH HCFS, 2019



PLHIV registered with HCFs). AIDS prevalence, according to the official registration data, was 123.7 per 100,000 population. At the regional level, the value of this indicator ranged from 22.6 in the Zakarpattia region to 362.6 in Odesa region (Annex 2, Table 20).

According to the SEM , during 2019, 23,357 people were deregistered, of which 2,216 were children born to HIV-positive women with a final HIV-negative status. Of the 21,141 people with HIV infection, 3,788 (18%) were deregistered due to a change in their place of residence, 5,943 (28%) people died and 11,410 (54%) were removed for other reasons (Figure 40).

According to MIS HIV among patients who were deregistered for other reasons: 4,203 PLHIV were not linkage to HIV care services for more than 5 years, 779 refused further health care; 505 were the people with unknown place of residence; 98 people were deregistered due to duplication of registration at the HCFs.

Analysis of the causes of death of PLHIV shows that in 2019, in every second case (52%), the causes were directly related to HIV, in particular, 2,977 people died as a result of AIDS (half of them from HI/TB coinfection). It is important that among this group only 57% received ART.

#### FIGURE 41. THE MAIN CAUSES OF DEATH OF PLHIV ACCORDING TO THE DATA OF REGISTRATION WITH HCFS 2019



Features of the age and sex structure of the deceased:

• Most cases were reported among men (66%).

• The majority were 25-49 years old (75%) and over 50 years old (23%).

The majority were infected through sexual transmission (60%).

A total of 2,511 people died from other causes and diseases not related to HIV. In fact, every third death was not related to the course of HIV infection. 378 people died from other causes, including 65% the causes of death of whom was classified as "Injury, poisoning and some other consequences of external causes." 260 (4%) people died as a result of viral hepatitis B/C or its complications. Tuberculosis caused the death of 94 people (2%). In 6% of cases, the cause of death was unknown (Figure 41, Annex 2, Table 20).

#### 4.4. AIDS INCIDENCE AND MORTALITY

Late HIV diagnosis, AIDS incidence and mortality remain a challenge in the fight against the HIV epidemic. Large-scale expansion of access to ART and decentralization of services in general contribute to an increase in life expectancy



#### FIGURE 42. NUMBER OF AIDS CASES AND AIDS-RELATED DEATHS IN UKRAINE AS REPORTED BY HCFS. 2010-2019

and maintaining work performance of PLHIV. However, timely treatment is most beneficial. In the case of late diagnosis or delay in seeking health care among people with known HIV status, the effectiveness of the prescribed ART decreases.

According to the HCFs, with which PLHIV are registered, in 2019, against the background of a decline of the number of AIDS

cases, a decrease in the number of AIDS deaths was reported. Accordingly, compared with 2018, AIDS incidence rates declined from 22.9 to 19.5 per 100,000 population, and AIDS mortality rate from 8.9% to 7.7% per 100,000 population (Figure 42).

The highest AIDS incidence rates per 100,000 population were reported in Odesa (74.6), Dnipropetrovsk (53.1) and Donetsk (51.4) regions, the lowest



#### FIGURE 43. AIDS INCIDENCE PER 100,000 POPULATION, BY REGIONS, UKRAINE, 2019



were reported in Ivano-Frankivsk (3.9), Ternopil (4.0) and Zakarpattia (5.1) regions (Figure 43, Annex 2, Table 21).

A positive trend towards a decline of the incidence rate was observed in all regions except the Vinnytsia, Volyn and Kirovohrad regions.

In 2019, among patients with newly recorded HIV:

• the majority were people infected via heterosexual transmission (72.5%),

• in almost all age groups, men prevailed (on average 62%), except for people aged 18-24, in this age group women made the majority (59%),

• 1 of 5 HIV diagnoses was recorded among people over 50 years old,

• the majority were urban residents (74%).

 in half of the cases, tuberculosis was diagnosed and in every 1 of 5 HIV diagnoses was accompanied by bacterial excretion of MBT+

Important factors affecting HIV mortality rate are timely HIV diagnosis, early initiation of ART, degree of adherence to treatment, and linkage to HIV care services. 2,977 patients died of AIDS during the year, growth rate amounts to 27% compared to 2018 value (Annex 2, Table 22).

The highest rates of AIDS deaths per 100,000 population were reported in Dnipropetrovsk (22.6), and Odesa (18.6) regions, and the lowest – in Zakarpattia and Ivano-Frankivsk regions (Figure 44).

The share of regions to the total number of deaths depends both on the state of the epidemic and on the size of the general population of PLHIV. Thus, in 2019, according to the data of HCFs, with which PLHIV

are registered, 4 regions (Dnipropetrovsk, Donetsk, Odesa regions, City of Kyiv) accounted for 56% of the total number of all AIDS deaths

The presented AIDS mortality indicators are based on the data obtained from HCFs, with which PLHIV are registered, and do not take into account a certain number of deaths due to the complexity of their registration and reporting, as well as due to the lack of information on the HIV status of a deceased person (Figure 45).

However, as stated in the previous section, the epidemic modelling results also indicate a sharp decline of AIDS mortality in Ukraine after expanding access to ART in 2013 and the introduction in 2016 of WHO recommendations on the provision of ART to all people living with HIV, at any CD4 lymphocytes count("Test and START").

#### FIGURE 45. COMPARISON OF THE ESTIMATED NUMBER OF AIDS DEATHS AND STATISTICS ON RECORDED AIDS DEATHS, 2019 (HCFS, STATE STATISTICS SERVICE OF UKRAINE)



### **SECTION 5** KEY POPULATIONS AT RISK OF HIV

WHO and UNAIDS consider that the following key populations have limited access to health services and experience particularly high HIV incidence – men who have sex with men (MSM), people who inject drugs (PWID), sex workers (SWs), transgender people (TP), people in prisons and other detention facilities.

Globally, each year key populations account for approximately 36% of the 1,900,000 new HIV diagnoses among adults. While an increasing number of countries are considering the special needs of key populations when developing regulations and requirements for the provision of HTSs, implementation of these norms and requirements still lags behind theory, and coverage for these populations remains extremely low in most regions.<sup>19</sup> According to the UNAIDS estimates, globally, KPs and their sexual partners account for 40 to 50% of all new HIV diagnoses. New large-scale programs and efforts are required to create an appropriate social and legal environment in order to achieve the target of reducing the number of new HIV diagnoses among KPs.

#### 5.1. IMPLEMENTING THE TRANSITION TO PUBLIC FUNDING OF HIV-RELATED SERVICES

HIV infection prevention programs for KPs (PWID, SWs, MSM and TP) make one of the main elements of the strategy to counteract HIV/AIDS in Ukraine. Working with the KPs is not limited to HIV prevention services through the distribution of syringes and condoms. These programs also include

# **TABLE 5.** THE MAIN RESULTS OF MONITORING THE HIV PREVALENCE OF BEHAVIOURALAND EPIDEMIOLOGICAL INDICATORS AMONG KEY POPULATIONS (KPS) AT RISK OF HIVAND TRANSMISSION OF HIV, ACCORDING TO BIOBEHAVIOURAL SURVEYS, UKRAINE,2017-201820

Main indicators	PWID	MSM	SWs	ТР
Estimated number of KPs <sup>21</sup>	350,300	179,400	86,600	-
Estimated number of PLHIV in KPs	78,422	13,553	4,184	-
HIV prevalence (%)	22.6	7.5	5.2	21.0
PLHIV who know their HIV status (%)	58	59	53	32
PLHIV on ART (%)	38	46	29	-
Use condoms (%)	44	78	94	31

<sup>&</sup>lt;sup>19</sup> https://www.euro.who.int/ru/health-topics/communicable-diseases/hivaids/publications/2016/consolidated-guidelines-on-hivtesting-services-2015

<sup>20</sup> For more details, please, follow the link: Alliance for Public Health http://aph.org.ua/uk/resursy/vydannya-alyansu/

<sup>21</sup> http://aph.org.ua/wp-content/uploads/2019/06/Otsinka-chiselnosti\_32200.pdf

prevention of viral hepatitis, STIs, HIV detection activities and screening for TB.

Over the past fifteen years of response to the epidemic, a national network of HIVservice non-governmental organizations was formed, in collaboration with high-level health care facilities, they provide HIV prevention services to key populations, in particular on the basis of the harm reduction strategy as the most effective mechanism for secondary prevention of HIV infection.

HIV prevention among key populations turned out to be one of the most vulnerable areas of national policy to the forthcoming changes. This is due to the fact that the overwhelming majority of activities included in harm reduction programs were introduced and developed with funds from the Global Fund and other international donors. The State, to a certain extent, contributed to the development of these programs, in particular, ensured the formation of the legal and regulatory framework for their implementation. However, the amount of funds allocated for this work area from local budgets was insignificant, and funding was of ad hoc nature.

In turn, Ukraine has undertaken a number of international obligations regarding the response to the HIV epidemic, including within the framework of receiving a grant from the Global Fund to Fight HIV/AIDS. Tuberculosis and Malaria for 2018-2020 to country's strengthen the capacity to implement comprehensive programs to combat HIV/AIDS and tuberculosis within the public funds. In addition, within the framework of the implementation of the Agreement between Ukraine and the EU. special attention is paid to reforming health care in terms of the development of the public health system. including the integration of prevention services into the health care system in the context of HIV as disease that cause a significant economic and socio-demographic burden on society.

The implementation of the transition to state funding for HIV-related services (hereinafter referred to as the Transition Plan) was carried out with the participation of all stakeholders during 2017-2019. The expected result of the process was the creation of a mechanism to ensure the stable financing of these services equitable distribution through an of resources. the creation of а unified transparent mechanism for the use of public funds in the implementation of effective interventions in the field of counteracting diseases that cause the greatest negative socio-demographic and economic impact.

In 2018-2019, State Institution "Public Health Center of the Ministry of Health of Ukraine" (hereinafter referred to as PHC), in cooperation with national partners, piloted various models of transition to public funding and administration of service provision (centralized and decentralized). Both models considered the involvement of nongovernmental organizations as service providers as carriers of experience in introducing such services within the framework of donor funding.

During this time, the Government and the Ministry of Health prepared a number of amendments to the regulatory acts, in particular, the amendments to Order of the Cabinet of Ministers of Ukraine of June 12, 2019 No.497 "Some Issues of Providing Services to Key Populations at Risk of HIV and People Living with HIV", which allowed to launch the process of allocating funds from the state budget to finance HIV-related services, and appointed the main manager of these funds (Public Health Center of the Ministry of Health of Ukraine).

Also, the Ministry of Health has prepared and approved a number of regulatory legal acts regulating the organizational framework for the provision of HIV-related services key populations at risk of HIV and people living with HIV, as well as determine the mechanism for calculating the maximum tariffs for these services:

• Order of the Ministry of Health of Ukraine of 08.07.2019 No.1556 "On Approval of Methods for Calculating Maximum Tariffs for HIV-Related Services",

• Order of the Ministry of Health of Ukraine of 12.07.2019 No.1606 "On Approval of the Procedure

for the Provision of HIV Prevention Services to Key Populations at Risk of HIV",

• Order of the Ministry of Health of Ukraine of 12.07.2019 No.1607 "On Approval of the Procedure for the Provision of Care and Support Services for People Living with HIV",

• Order of the Ministry of Health No.1681 of 23.07.2019 "On Approval of the Maximum Tariffs for HIV-Related Services."

The approval of the Procedures for the Provision of HIV-Related Services solves the following important challenges for ensuring a sustainable response to the HIV/AIDS epidemic: standardization of the list of services that are guaranteed to be provided to target groups for public funds, integration of HIV/AIDS prevention services into the general health care system, development of a competitive environment in the provision of HIV services and the creation of a unified transparent payment mechanism for the services provided, in accordance with the implementation of the objectives of the health reform concept, promoting the sustainability of epidemiological trends in the cascade of services and spread of the HIV epidemic in Ukraine. Thus, Ukraine has become one of the first countries in the EECA region with a successful experience in fulfilling its obligations to implement the transition to public funding for services to key populations at risk of HIV and people living with HIV.

The following are the services that are subject to guaranteed payment from the state budget in the area of **HIV prevention among key populations at risk of HIV** (MSM, SWs, PWID):

• provision of targeted information, HIV infection and harm reduction educational and communication services,

- distribution of condoms and lubricants,
- exchange and distribution of syringes,
- HIV testing,
- screening for tuberculosis.

The following are the services that are subject to guaranteed payment from the state budget in the area of **care and support for people living with**  **HIV** (PLHIV who receive or prepare for starting ART, and their sexual partners who do not know their HIV status):

• services to involve partners of PLHIV in HIV-related health services,

• building adherence to HIV treatment and keeping it under control,

• PLHIV involvement in receiving HIV care and building their adherence to treatment.

In the second half of 2019, the PHC procured HIV-related services for representatives of the KPs and PLHIV through the Prozorro public procurement mechanism. As a result, 94 agreements were signed between the PHC and the winners with 50 non-governmental organizations in 24 regions of Ukraine and the City of Kviv to ensure the provision of HIV prevention services for 211,600 representatives of the KPs, care and support services for 21,400 PLHIV.

Within the framework of the programs "Public Health and Measures to Combat Epidemics" at the expense of budget funding in 2020, 276,500 people receive HIV prevention services and 38,140 receive care and support services.

### 5.2. COMMUNITY-BASED PREVENTION PROGRAMS

A wide network of NGOs is involved in the prevention programs for KPs in Ukraine. In 2019, NGOs covered with HIV prevention programs 672,000 people from KPs in all the regions of Ukraine at 2,377 service delivery points. A minimum package of preventive services included a syringe or needle, a condom, physician's consultation, and for SWs. MSM and TP – a condom and physician's consultation when needed. Significant efforts were made to establish HIV diagnoses and provide case management services to start ART through PWID-oriented programs, implemented by NGOs with a support of ICF "Alliance for Public Health".

The first step to achieve a long-term prevention effect is

#### FIGURE 46. COVERAGE OF KPS TESTING AT COMMUNITY-BASED NGOS, 2019



to expand universal access to HTSs among KPs. In 2019, within the framework of the implementation of prevention programs by NGOs, 866,000 people from among KPs were tested for HIV using RTs, of which 2.9% tested positive for HIV (24,830). In addition, in 2019, within the framework of the projects of ICF "Alliance for Public Health" for the funds of the Global Fund to Fight AIDS, Tuberculosis and Malaria, 25,500 self-testing kits were purchased and distributed by NGOs in the field conditions within the framework of HIV/AIDS prevention projects. Those who tested positive for HIV were referred for confirmation of their HIV status and further linkage to HIV care services.

Community-based HIV testing using RTs was provided to 520,000 people from among the KPs. In 2019, the highest rate of coverage of HTSs was recorded among the PWID and amounted to 60.3% (211,000 people were tested, which is

#### FIGURE 47. COVERAGE OF HIV PREVENTION PROGRAMS AMONG PWID, UKRAINE, 2015-2019



Reference: ICF "Alliance for Public Health"

23% more than in 2018). The lowest rate was seen among MSM. Although in general, the percentage of MSM tested for HIV increased compared to 2018 from 22.4% to 28.2% (about 51,000 MSM were tested), this result is insufficient to achieve the targets of increasing the share of PLHIV in MSM who know their HIV status. The situation of HIV testing among SWs remains almost unchanged: In 2019, 37,300 SWs were tested which is 43.1% of the estimated number of SWs (Figure 45).

#### 5.2.1. PEOPLE WHO INJECT DRUGS

The harm reduction programs remain among the most important factors in the HIV prevention among people living with HIV and their sexual partners, aimed at reducing the negative health, social and economic harm associated with drug use, without requiring people to stop using drugs<sup>22</sup>. WHO, UNAIDS and the

<sup>22</sup> https://www.hri.global/files/2018/09/25/lost-decade-harm-reduction-funding-2018.PDF <u>21</u> http://aph.org.ua/wp-content/uploads/2019/06/Otsinka-chiselnosti\_32200.pdf





United Nations Office on Drugs and Crime (UNODC) support a comprehensive package of HIV and HCV prevention and treatment interventions among people living with HIV. Key interventions should include needle and syringe programs (NSPs) to prevent sharing of substitution injecting materials, opioid therapy to reduce incidence and encourage opioid withdrawal; HTSs as a pathway to HIV treatment and care, ART to suppress viral load among PWID, condom distribution programs to prevent transmission of the pathogen to sexual partners<sup>23</sup>. In 2019, in projects with financial support from the GF, PHC and CDC, 234,000 PWID were covered with prevention, which is 66.8% (in 2018 -59%) of the estimated size of PWID in Ukraine (Figure 47).

Within the regions, the situation is significantly different, which primarily depends on the assessment of the real need for the provision of HIV prevention services in the region, the resources available and the experience of NGOs (Figure 48).

The highest rates of coverage of HIV prevention programs among PWID were reported

in the Odesa (91%) and Kherson (85%) regions, as well as in Kharkiv region and City of Kyiv, where the actual result exceeds 100% of the estimated number of PWID in the regions<sup>24</sup>. Such an excess may be related to both the estimated number and the problem of internal migration of PL HIV, when the actual number of clients in prevention programs increases at the expense of people who have arrived from other regions. The lowest rates were recorded in the Vinnytsia (27%) and Luhansk (29%) regions.

Implementation of harm reduction programs in Ukraine commenced in 2004, supported by the GF. In 2015, when there were about 213,000 PWID in the country, more than 19 mln syringes were distributed, and this level of service provision has been steadily provided to date. PWID received sterile injection equipment (primary and secondary syringe exchange) at stationary sites, outreach routes, mobile clinics and pharmacies.

In 2019, 18,671,424 needles and syringes were distributed,

<sup>&</sup>lt;sup>23</sup> Coverage of the community-based HIV prevention programmes among PWID, by regions, Ukraine (% of estimated number), 2019
<sup>24</sup> Reference: SYREX database

#### FIGURE 49. RESULTS OF HIV TESTING WITHIN THE FRAMEWORK OF PREVENTION PROGRAMS FOR PLHIV AND REGISTRATION OF NEW HIV DIAGNOSES AMONG PEOPLE INFECTED WITH HIV AS A RESULT OF INJECTING DRUG USE (SEM DATA), 2019



Number of people tested PWID who tested positive in the community-based for HIV settings (1 RT)

an average of 53.3 units per client (in 2018 – 57.2).

As noted above, HTSs are an indispensable component of the package of measures for the HIV prevention and treatment among PWID as a way to HIV treatment and care. According to the results of the IBBS conducted in 2017-2018 among HIV-positive PWID, 58% already knew about their HIV status, and 38% were on ART.

In 2019, 77.6% (271,911 people) of the estimated number of PWID were covered by HIV testing (1 RT), of which 2.8% (7,660 people) tested positive for HIV.

One of the main components of HIV prevention activities among PWID is the linkage of HIV-positive people to HIV care services. Comparison of the data on HIV testing among PWID within the framework of NGO prevention activities and the results of the SEM in 2019 shows that there is a large gap between the number of PWID who tested positive for HIV (7,660 people) and the number of PWID/PLHIV who were registered with HCFs and linkage to HIV care services (4,214 people) including those that were referred by the NGOs (1,988 people).

Number of PLHIV among of which were referred by PWID who were linkage tc NGOs HIV care services

Based on the general assessment of the results obtained, it can be assumed that only 26% of PWID who were diagnosed with HIV when tested at the NGOs were linkage to HIV care services. That is, 3 out of 4 PWID infected with HIV were lost to follow up at the stage of referral for further linkage to HIV care services (Figure 49).

Given the limited possibilities for constructing a complete cascade of HIVrelated prevention and care services, comparison of data from different sources allows us to draw attention to the weakest points in the cascade and the quality of the data obtained.

It should be noted that the long-term support of a high level of coverage of prevention programs among PWID in Ukraine made it possible to obtain a tangible result, which is best demonstrated by the dynamics of HIV prevalence among PWID, which, compared to 2007, decreased from 27% to 22.6% in all age groups and from 29, 1% to 5% in the PWID group under 25 years old. However, it should be mentioned that the number of new HIV diagnoses among PWID is still significant in the context of the epidemic and is estimated at about 9,200 in 2019.

#### **OPIOID SUBSTITUTION THERAPY**

According to the WHO recommendations, opioid substitution therapy is recommended for the treatment of opioid dependence and for the complex control of HIV, tuberculosis and viral hepatitis C among PWID. The reported coverage among the estimated number of people with opioid dependence remains under 10% in a number of countries The greatest coverage was reported in Croatia (55%), Georgia (49%) and the Czech Republic (38%). The Baltic States and the other countries of Central and South-Eastern Europe have programme coverage of between 10% and 30%.<sup>26</sup>

The OST programs for patients with opioid dependence have been implemented in Ukraine since 2004. The number of PWID who have become participants in the OST programs is increasing annually (Figure 50). In 2019, OST services were provided by 211 HCFs. The number of PWID participating in the OST program amounted to 11,385 people as of 1 January 2019 Vast majority of patients (88%) received methadone hydrochloride (tablets), about 10% received buprenorphine hydrochloride (sublingual

#### FIGURE 50. NUMBER OF PEOPLE RECEIVING OST IN UKRAINE, 2015-2019



tablets) and slightly less than 2% received methadone hydrochloride (oral solution).

Gender distribution of OST program participants has remained virtually unchanged in recent years with a dominant proportion of men (82%). This is broadly in line with the gender structure of opioid dependence in Ukraine. The most common infection among OST program participants was viral hepatitis C, which was detected in 69%, hepatitis



### FIGURE 51. COVERAGE OF OST AMONG PWID, BY REGIONS, UKRAINE (% OF THE ESTIMATED NUMBER OF PEOPLE WHO INJECT OPIOIDS), 2019

<sup>26</sup> For more details, please, follow the link: https://harmreductioneurasia.org/ru/ost/

B was diagnosed in 12% of people, tuberculosis patients – 15%. HIV-positive accounted for 40% of people (5000), of which 92% (4623) received ART (Annex 2, Table 23).

The rate of coverage of OST in Ukraine was 4.5% relative to the estimated number of people living with HIV who are opioid dependent. The program is expanded by regions unevenly. (Figure 51).

The highest rates of OST coverage were reported in Poltava (12.0%), Ivano-Frankivsk (11.3%) and Luhansk (9.8%) regions. The lowest rates were in Kyiv (1.7%) and Odesa (2.1%) regions.

#### 5.2.2. MEN WHO HAVE SEX WITH MEN

Men who have sex with men are disproportionately affected by human immunodeficiency virus compared to the general population in nearly all countries reporting reliable surveillance data. In lowand middle-income countries MSM have 19.3-fold greater odds of being infected with HIV compared with the general population<sup>27</sup>.

During 2007–2017 the overall increase in the East was driven by an upsurge in the number of HIV diagnoses with reported sexual transmission, which increased eightfold for transmission through sex between men<sup>28</sup>. Countries with declines have demonstrated the impact of changing the culture towards more frequent testing for atrisk gav men and linkage to immediate care and ART for those found to be positive. In countries where HIV incidence among MSM is increasing, multicomponent interventions, including PrEP, self-testing, index testing of PLHIV partners, can help overcome this negative trend.

According to 2017 estimates, the size of MSM in Ukraine is about 179,400<sup>29</sup>.

#### FIGURE 52. COVERAGE OF PREVENTION PROGRAMS AMONG MSM, UKRAINE, 2015-2019



The HIV prevalence among MSM is 7.5%<sup>30</sup>. The coverage of prevention programs among MSM is gradually increasing, but, as evidenced by the results of surveillance, due to the high level of stigma and discrimination in society, most of them hide their sexual orientation and gender identity.

For this reason, MSM remain one of the hardto-reach population groups for implementation of prevention programs, they do not actively seek HIV testing services and, accordingly, do not receive treatment. According to the results of the IBBS among HIV-positive MSM, 59% of them already knew about their HIV status, and 46% were on ART.

In 2019, due to the implementation of projects with financial support from the Global Fund, PHC, CDC and USAID, the coverage of HIV prevention programmes among MSM increased compared to 2015 from 19% to 31% (Figure 52).

The majority of people (51,544–92%) received prevention services at 370 MSM service delivery points at NGOs supported by the ICF "Alliance for Public Health." In addition, MSM (4361–8%) also received

PRACTICAL GUIDANCE FOR COLLABORATIVE INTERVENTIONS New York: United Nations Development Programme, 2015 <sup>28</sup> European Centre for Disease Prevention and Control, WHO Regional Office for Europe. HIV/AIDS surveillance in Europe 2018–2017

data. Copenhagen: WHO Regional Office for Europe; 2018.

<sup>&</sup>lt;sup>27</sup> Implementing Comprehensive HIV and STI Programmes with Men Who Have Sex with Men:

<sup>&</sup>lt;sup>29</sup> http://aph.org.ua/wp-content/uploads/2019/06/Otsinka-chiselnosti\_32200.pdf

<sup>&</sup>lt;sup>30</sup> "Report on the Results of a Biobehavioural Survey Among Men Who Have Sex with Men in Ukraine" Ya. Sazonova, Yu. Dukach IHF "Alliance for Public Health". 2019. 120 p.



#### FIGURE 53. COVERAGE OF HIV PREVENTION PROGRAMS AMONG MSM, UKRAINE (% OF ESTIMATED NUMBER, 2019)

services in 5 regions (16 service points) with the support of CO "100 PERCENT LIFE" within the framework of The HealthLink Project «Accelerating Ukraine's Efforts to End HIV."

In 2019, as part of providing MSM with a basic package of services, NGOs distributed 2,700,000. condoms and lubricants – an average of 48 condoms per each client of the program.

Regional differences in the volume of HIV prevention services for MSM depend on both the assessment of the real need for such services and the available resources (Figure 53). No prevention services for MSM were provided in Zakarpattia region, where the estimated number of MSM was 2,300; in Khmelnytskyi region, with an estimated number of MSM 3,500, less than 1% of MSM were covered by prevention programs.

Pre-exposure prophylaxis (PrEP) – the use of antiretroviral drugs by HIV-negative people to prevent HIV is an important component of the prevention toolbox. No data available for MSM in Luhansk region.

PrEP reduces the risk of getting HIV, especially in those life situations when this risk is especially high<sup>31</sup>. Studies showed that among people who inject drugs PrEP reduces the risk of getting HIV through sexual transmission by 90% and 70%<sup>32</sup>.

In 2017, within the PEPFAR project, the pilot PrEP implementation project among MSM in Ukraine was initiated on the basis of the Kyiv City Clinical Hospital No. 5 with the support of CDC and NGO "ALLIANCE.GLOBAL". In 2018, 125 people received PrEP for the first time in their lives. In 2019, the program was expanded to 1,735 annual courses for all people at risk of HIV, including 1,052 MSM.

In 2019, 28.2% (50,558 people) of the estimated number of MSM were covered by HIV testing (1 RT), of which 1% (536 people) tested positive for HIV. Like other KPs, MSM tend to "drop-out" from the cascade of HIV services at the stage of referral of a person who tested positive for HIV from an NGO testing site to an HCF.

<sup>&</sup>lt;sup>31</sup> For more details, please, follow the link: https://www.unaids.org/en

<sup>32</sup> For more details, please, follow the link: https://www.cdc.gov/hiv/basics/prep.html

#### FIGURE 54. RESULTS OF HIV TESTING WITHIN THE FRAMEWORK OF PREVENTION PROGRAMS FOR MSM AND RECORDING NEW HIV DIAGNOSES AMONG PEOPLE INFECTED WITH HIV VIA HOMOSEXUAL TRANSMISSION (SEM), 2019



Number of people tested MSM who tested positive in the community-based for HIV settings (1 RT)

In 2019, comparison of data on MSM testing within the framework of NGO prevention activities and SEM showed that half of MSM who tested positive for HIV were lost to follow up at the stage of referral to a HCF.

In 2019, 536 people were diagnosed with HIV in the community-based settings, 468 PLWH/MSM were registered with HCFs and linkage to HIV care services, among whom, according to the registration forms, 271 people were referred to HCFs by social workers of NGOs (Figure 54).

It can be assumed that 51% of MSM who tested positive for HIV when screened at the NGOs were linked to HIV care services at the HCFs. Considering the possibilities for building a complete cascade of HIV prevention and medical services are still limited, as in the case of PWID, comparison of data from different sources allows us to draw attention to the weakest points in the cascade and to the quality of the data obtained. PLHIV among MSM who of which were referred by were linkage to HIV care NGOs services

#### 5.2.3. SEX WORKERS

During the implementation of prevention programs among SWs, significant positive results have been achieved. The basic package of services is available for SWs through a network of NGOs, which combines HIV and STIs prevention, in all the regions of Ukraine. Some stabilization of the epidemiological process among SWs is evidenced by the low prevalence of HIV among SWs of the younger age group and low incidence rates among SWs. At the same time, 93% of female SWs reported using condoms with clients.

According to the results of the last round of IBBS (2017), HIV prevalence among SWs is constantly declining and amounted to 5.2%, and among people of the younger age group (under 25 years old) - 1.3%. However, HIV prevalence among SWs who inject drugs was 36% versus 3% among SWs who do not inject drugs. Some stabilization of the epidemiological process among SWs is evidenced by the low prevalence of HIV among SWs in the younger age group and the low incidence rate among SWs.

In 2019, HIV and STIs prevention services were provided to SWs at 40 NGOs, supported by the ICF "Alliance for Public Health". The projects proposed basic services package for each client of the harm reduction program (counselling, condoms, lubricants, HIV and syphilis testing, early tuberculosis diagnosis). In 2019, 40,500 SWs were covered by prevention at 1,319 service delivery points, which is 14% increment from the previous year and 53% increment of the estimated number of SWs in Ukraine (Figure 55). Within a year 7.2 million of condoms were distributed among SWs – average of 158 condoms per each prevention program.

Greater proportion of SWs covered by prevention programs, underwent the HIV rapid testing. In total, in 2019, 37,346 people were tested for HIV, 358 of them (about 1%) tested positive for HIV. According to the ICF "Alliance for Public Health", in 2019, 245 HIVpositive SWs seeded health care at HCFs when referred from NGOs, 177 people had HIV-positive status confirmed, 190 people were registered with AIDS centres, 219 people started ART (including clients tested in previous periods).

#### FIGURE 55. COVERAGE OF HIV PREVENTION PROGRAMS AMONG SWS, 2015-2019



The volumes of prevention services for SWs in the regions can be conditionally divided into three groups (Figure 56). A third of the regions had indicators within small fluctuations relative to the national average. In 2019, the highest rates of coverage of prevention services among SWs (serviced provided by NGOs) were reported in Kharkiv (90%), Rivne (78%) and Lviv (76%) regions, as well as in Kyiv region, where the actual result exceeds 100% of the estimated number of SWs in the region<sup>33</sup>. Such an excess can be

### FIGURE 56. COVERAGE OF HIV COMMUNITY-BASED PREVENTION PROGRAMS AMONG SWS (% OF ESTIMATED NUMBER), 2019



No data available for MSM in Luhansk region.

associated both with an estimate of the number of SWs, and as a result of a change in residence to increase profits, where they are provided services by social workers of NGOs. The lowest rates were reported in Chernihiv (1%), Zhytomyr (20%), Zaporizhzhia (29%), Poltava (29%) and Ivano-Frankivsk (29%) regions.

#### **5.2.4. TRANSGENDER PEOPLE**

In 2019, within the framework of project activities, 11 NGOs provided the following prevention services for transgender people (TP): distribution of condoms, lubricants, counselling of social workers and health professionals, testing for HIV and syphilis, hepatitis C and early tuberculosis diagnosis. In 2019, services were provided at 52 NGO sites in 12 regions of Ukraine with the support of the ICF "Alliance for Public Health"<sup>34</sup>.

To date, the estimated number of TP in Ukraine has not yet been determined and this is the least studied KP, however, every year the number of TP provided HIV prevention services in Ukraine is growing (Figure 57).

#### FIGURE 57. COVERAGE OF HIV PREVENTION PROGRAM AMONG TP, 2016-2019



In 2019, within projects supported by the Global Fund, 1,747 people received a minimum package of services (condom and counselling), 1,482 TP were tested for HIV infection with th use of a rapid test and received results (1,477 with the support of the ICF "Alliance for Public Health" and 5 – CO "100 PERCENT LIFE"). 259,000 condoms were distributed (an average of 148 condoms per program client). 15 TP tested positive for HIV (1%). In addition, 3 TP received pre-exposure prophylaxis.

In 2017-2018, with financial support from AFEW International, a national survey of the behavior and needs of transgender people in HIV/AIDS prevention services in Ukraine was carried out, which is one of the largest surveys in the region of Eastern Europe and Central Asia. According to the results of the survey that included female and male TP, as well as people with other types of gender identity, HIV prevalence among TP may be 21%. Among TP, a third (32%) knew their HIV status and only 29% were tested for HIV in the last year. Those who were not screened for HIV in the past 12 months did not do so because of fear of discrimination if they test positive for HIV, the belief that they are unlikely to be infected with HIV, fear of knowing their HIV status and concerns about treatment from poor health care professionals<sup>35</sup>.

This survey showed that there is a gap in the provision and delivery of specific services that would be targeted at TP and meet their needs. The majority of TP (88%) do not use the services of HIV service NGOs and only 5% turn to those NGOs that work with MSM. At the same time, the level of condom use is extremely low – 69% did not use a condom the last time they had sex.<sup>36</sup>

<sup>33</sup> Reference: SYREX database

<sup>&</sup>lt;sup>34</sup> Reference: routine reporting (program documentation based on generalized data from NGOs).

<sup>&</sup>lt;sup>35</sup> http://www.hplgbt.org/publish/Research\_TG\_HIV-AIDS\_UKR/RESEARCH\_TG\_HIV-AIDS\_UKR\_ru.pdf

#### 5.2.5. PRISONERS

According to the Center of Health of the SCESU at the end of 2019, the number of prisoners amounted to 52,863 people. To improve situation, in 2018 the algorithm of HTSs provision in the penitentiary system was changed: HIV testing is proposed when detainees arrive to penitentiary facilities and performed annually during routine health checks, which resulted in significant increase of diagnosis coverage among this KP. In 2019, 54,000 prisoners and convicts were provided HIV testing services, of which 1,006 people (1.9%) tested positive for HIV.

As of 01.01.2020 the number of PLHIV in institutions of the penitentiary system amounted to 3.824. of which the majority (90%) were men. In 2019, the HIV prevalence among prisoners was 7.2%. In 2019, the rate of ART coverage among HIV-positive people in penitentiary facilities was 87.4% (on average 3,343 PLHIV received treatment). In most regions. ART coverage was over 90%. The lowest rates were reported in Chernivtsi (76.9%). Dnipropetrovsk (77.1%) and Donetsk (82.1%) regions. In 2018, measures were taken to transfer the provision of ART from GF funds to public funds. As of the beginning of 2019, 1 out of 5 patients among HIVpositive detainees received ART paid for with the State Budget funds.

In 2004-2017, several sociological and biobehavioural surveys were carried out in prisons in Ukraine in order to determine the level of HIV prevalence and the dependence

#### FIGURE 58. HIV PREVALENCE AMONG PRISONERS ACCORDING TO THE DATA OF INTEGRATED BIOLOGICAL BEHAVIOUR SURVEYS, UKRAINE (%), 2009-2019



of HIV incidence rates on the risky behavioural practices among prisoners (Figure 58). In order to further monitor the epidemic situation in prisons, in 2019, an integrated biobehavioural survey was carried out among prisoners as a component of second-generation HIV surveillance<sup>37</sup>.

Compared to the data of the previous survey, 2019 experienced an increase in the percentage of HIV-infected among prisoners to 8.9%. There were significant gender differences: HIV prevalence among convicted men was 8.4%, and among women – 17.0%. The percentage of HIV-infected grows depending on the number of terms of imprisonment: From 3.7% among those who served their sentences for the first time, 21.6% of those who were prisoners five or more times. ART coverage among HIVpositive prisoners, according to the survey, was 86.4%.

<sup>36</sup> For more details, please refer to the link below: www.HPLGBT.org

<sup>37</sup> https://www.phc.org.ua/sites/default/files/users/user90/Analitical\_Report\_Prison\_2019\_UISR\_06\_04\_2020.docx

### SECTION 6 ON THE WAY TO ELIMINATING THE MOTHER-TO-CHILD TRANSMISSION OF HIV AND SYPHILIS

Currently, Ukraine as a country is facing the challenge to eliminate the mother-tochild transmission of HIV and syphilis (hereinafter referred to as EMTCT). Double elimination enhances the feasibility and benefit of such integrated approach to achieve the Sustainable Development Goals 3, 5 and 10 aimed at ensuring health, access to services and enhancement of the rights of women, girls and children

The system for preventing the mother-tochild transmission of HIV (PMTCT) in Ukraine is in line with the basic WHO strategy, integrated into maternal and child health care service, and is also a component of reproductive health programs for population. Option B+<sup>38</sup> was determined as the main strategy of the PMTCT programs in the country. Implementation of the PMTCT measures contributed to a significant decline of the rate of the mother-to-child transmission of HIV (hereinafter referred to as RMTCT). Program monitoring and evaluation indicators remain at a fairly high level, both in Ukraine as a whole and in the regions.

Since 2003, the coverage of serological testing for HIV antibodies among pregnant women exceeded 97% and amounted 99.3% in 2019 (Annex 2, Table 24). Antiretroviral therapy coverage among HIV-positive has exceeded 95% since 2018 and reached 95.6% in 2019. In 2019, more than 93.4% of HIV-positive women continued ART after labour. According to 2019 data, almost all children born to HIV-positive mothers received antiretroviral prophylaxis (97.7%) and were bottle-fed (99.7%).

FIGURE 59. HIV PREVALENCE AMONG PREGNANT WOMEN (SEM CODE 109.1), UKRAINE, 2015-2019 (%)



### 6.1 HIV TESTING AMONG PREGNANT WOMEN

The results of HIV testing among pregnant women are one of the proxy indicators of HIV prevalence among the general population in the country. Over the past 5 years, HIV prevalence among pregnant women according to the results of primary testing (code 109.1) had a tendency to decline and amounted to 0.23% in 2019 (Figure 59). In 2019, high values of this indicator were observed in Donetsk (0.51%), Mykolaiv (0.47%), Kherson (0.40%) and Odesa (0.38%) regions (Annex 2, Table 25).

Since 2013, in the framework of the SEM the detection of HIV among pregnant women under the age of 25

<sup>&</sup>lt;sup>38</sup> Option B+ is an approach for expectant mothers living with HIV in which women are immediately offered 3-component ART not only as a prophylaxis during pregnancy, but for life regardless of their CD4 count or clinical stage of HIV infection. This approach offers advantages such as prevention of the further spread of HIV and ART itself, but also makes breastfeeding impossible.



FIGURE 60. HIV PREVALENCE AMONG PREGNANT WOMEN AGED UNDER 25 Y.O., ACCORDING TO THE SEM, BY REGIONS, UKRAINE, 2019 (%)<sup>39</sup>

has been studied. In line with the Directive "Monitoring the Implementation of the 2011 Political Declaration of Commitment on HIV/AIDS", this indicator measures progress in terms of the number of new HIV diagnoses among young people. Over the past 5 years, in Ukraine, the HIV incidence rate among pregnant women aged 15-24 has decreased from 0.27% to 0.18% in 2019 and ranged from 0.0% in the Zhytomyr region, where not a single HIV diagnosis was established among pregnant women under 25 years old, up to 0.78% in the Donetsk region (Figure 60, Annex 2. Table 26). The number of pregnancies and live births in HIV-positive women in Ukraine continues to decline 61). Compared to 2015, the number of such women in Ukraine declined by 27%. At the same time, the number and relative proportion of women with an established HIV-positive status before pregnancy was growing - from 54.2% in 2017 to 65.2% in 2019. Caesarean section, as a method of delivery, which helps to reduce the risk of vertical

#### FIGURE 61. NUMBER OF HIV-POSITIVE PREGNANT WOMEN AND CHILDREN BORN TO HIV-POSITIVE MOTHERS, UKRAINE, 2015-2019



transmission of HIV to 0.8%, was performed in 27.2% of HIV-positive women in labor (in 2018 – 31.0%).

The highest percentage of pregnant women with late HIV diagnosis was reported in Kirovohrad (76.9%), Dnipropetrovsk (52.6%), Lviv (41.7%), Ternopil (40%),

<sup>39</sup> Specified number of live births

Odesa (37.6%) and Sumy (37.5%) regions.

In 2019, among 766 women who learned about their HIV-positive status during pregnancy and labour, HIV was diagnosed mainly



in the second trimester of pregnancy – 44.9% (Figure 62). In the third trimester and after labour, in general, the diagnosis was established in 26.4% of cases, that is, almost every 4 woman did not receive a set of PMTCT medical services in a timely manner, which significantly increased the risk of HIV in her child.

#### 6.2. EARLY HIV DIAGNOSIS IN CHILDREN BORN TO HIV-POSITIVE MOTHERS

In 2019, the coverage of early diagnosis by polymerase chain reaction (hereinafter referred to as PCR) in children born to HIV-positive women increased from 85.1% in 2017 to 94.1%, in particular, the GAM 2.1 indicator "Percentage of infants born to women living with HIV receiving a virological test for HIV within two months of birth." – from 54.2% to 82.1%<sup>40</sup>. This indicator was lower than the national level in 6 regions of Ukraine: Vinnytsia (42%), Poltava (62%), Odesa (63%), Donetsk (63%), Kharkiv (66%) and Ivano-Frankivsk (73%) regions (Figure 63).





<sup>40</sup> Calculated in accordance with the requirements for GAM 2.1 indicator "Percentage of infants born to women living with HIV receiving a virological test for HIV within two months of birth", where the denominator is "Number of pregnant women living with HIV giving birth in the past 12 months".



### **FIGURE 64.** RATE OF THE MOTHER-TO-CHILD TRANSMISSION OF HIV IN UKRAINE ACCORDING TO EARLY HIV DIAGNOSIS, BY REGIONS, 2019 (INDICATOR 2.2 OF GAM) (%)

According to reporting form No.63 (annual) "Prevention of Mother-To-Child HIV Transmission in 2019", the percentage of live births whose blood samples were tested by DNA PCR-based assays within two months of birth amounted to 87.8% (Annex 2, Table 27).<sup>41</sup>

The widespread use of the dried blood spot method (hereinafter referred to as DBS) for the HIV diagnosis in live births in HIV-infected women has become one of the main prevention areas in the prevention of vertical transmission of HIV. Today, the PCR method is the standard of health care in Ukraine<sup>42</sup> and allows detecting HIV in children in the first 48 hours of birth during their stay in obstetric institutions, ensures timely prescription of ART for the child and his further linkage to HIV care services. In 2019, due to the use of the CCM method, most regions had a high level of coverage of HIV early diagnosis among children born to HIV-infected mothers.

#### 6.3. RATE OF MOTHER-TO-CHILD TRANSMISSION OF HIV

Over the past 3 years, after the implementation of the PMTCT strategy updated in 2016. Ukraine has seen a decrease in the incidence of mother-to-child transmission of HIV (RMTCT) based on the data of early HIV diagnosis in children born to HIV-positive women. The number of new HIV diagnoses as a result of the mother-to-child transmission of HIV is constantly decreasing. In 2019, according to PCR data, 31 cases of the mother-to-child transmission of HIV were recorded, which is 10.5 per 100,000 live births (Annex 1, Table 28).

In 2019, according to the data of early HIV diagnosis, the RMTCT in Ukraine amounted to 1.6% (Annex 1, Table 29). Almost all of regions, with the exception Dnipropetrovsk (3.3%), Mykolaiv (3.2%), Chernihiv (3.0), Sumy (2.9%) and Kherson (2.5%) regions, reached the target for the elimination mother-to-child of the transmission of HIV (2%) (Figure 64).

<sup>&</sup>lt;sup>41</sup> Calculated in accordance with the data of reporting form No.63 (annual) " Prevention of Mother-To-Child HIV Transmission in 2019" (approved by Order of the Ministry of Health of Ukraine of 03.08.2012 No.612), where the number of live children born to HIV-infected mothers is used as the denominator, whose blood samples were analysed by DNA PCR-based assays within two months of birth.

<sup>&</sup>lt;sup>42</sup> Unified clinical protocol for primary, secondary (specialized) and tertiary (highly specialized) health care "Prevention of Mother-To-Child Transmission of HIV", approved by Order of the Ministry of Health of Ukraine No.449 of 16.05.2016.





In addition, in 2019, the RMTCT was calculated based on the results of a cohort analysis when establishing the final HIV diagnosis in children born to HIV-positive women in 2017. The indicator was 3.3% (75 HIV-positive children), which is 8.4 times less than the baseline RMTCT indicator in 2001, which amounted to 27.8% (Figure 65).

In general, it should be noted that the level of vertical transmission of HIV significantly depends on the timeliness of the application of complex measures of the PMTCT program. In the 2017 cohort of children, RMTCT, depending on the time of initiation of ART for an HIV-positive pregnant woman, amounted to: in the 1st trimester of pregnancy – 0%, in the 2nd trimester – 1.6%, in the 3rd trimester – 5.8%, in labour – 10.8%, without ART – 30.7%. The RMTCT among children whose mothers were active PWID exceeded the overall RMTCT (3.3%) and amounted to 4.2%. <sup>43</sup>

As of 01.01.2020, a total 7,799 children born to HIV-positive women were linkage to HIV care services at the HCFs: 3,368 children with an established HIV diagnosis and 4,431 children with HIV diagnosis awaiting confirmation (Annex 2, Table 30).

#### 6.4. THE RESULTS OF THE STUDY ON PRIORITIZING THE FACTORS INFLUENCING THE MOTHER-TO-CHILD TRANSMISSION OF HIV IN UKRAINE

In order to determine the priority factors influencing the mother-to-child transmission of HIV, which is extremely important for achieving EMTCT in Ukraine, a special study was carried out with the support of UNICEF in cooperation with the State Institution "Center for Public Health of the Ministry of Health of Ukraine" and the Charity Fund "Intellectual Perspective".

Study design – case-control method. The study involved 25 regional AIDS prevention and management centres, 294 pairs of "HIV-positive mother – HIV-positive child" (cases) and 363 pairs "HIV-positive mother–HIV-negative child" (control) were studied. The quoting of pairs of controls was made in the variables: place of residence of the mother, age of the mother, education, probable transmission mode, marital status.

According to the results of the study, the priority and statistically significant (p <0.001) factors contributing to an increase in the risk of the mother-to-child transmission of HIV:

<sup>43</sup> According to reporting form No.63-1 "Rate of the Mother-to-Child transmission of HIV in 2017" (2019)

• absence of ARV prophylaxis in a child (OR=88.02, i.e., the risk of the mother-tochild transmission of HIV increases 88.0 times),

mixed feeding of the child (OR=31.2),

• establishing the HIV-positive status of a pregnant woman during or after labour (OR=23.55),

• lack of ART at the time of labour (OR=16.7),

 lack of ART during pregnancy (OR=15.85),

• low pregnant women adherence to ART (OR=9.40),

 high viral load during pregnancy, more than 1000 copies/µl (OR=4.0),

• self-referral of a pregnant woman in a maternity hospital at the time of labour (OR=3.9),

• number of previous births (2 or more) (OR=1.63),

• late referral to the antenatal clinic (after 24 weeks of pregnancy) (OR=1.09).

#### 6.5. THE RESULTS OF THE STUDY ON EVALUATING THE COMPLETENESS OF PMTCT SERVICES PROVIDED AT VARIOUS HCFS IN UKRAINE

In accordance with the best international practices, an effective model for the provision of PMTCT services for the elimination of the mother-to-child transmission of HIV in Ukraine and a model where the strategy in the field of PMTCT is seen as a successful reform of the health care system, active involvement in the provision of primary health care services, as well as opportunities, getting all the necessary services in one place, the closest to an HIVpositive woman and her child.

A comparative assessment of the completeness of PMTCT services provided on the basis of various HCFs in Ukraine was also carried out as part of the study with the support of UNICEF in cooperation with the State Institution "Center for Public Health of the Ministry of Health of Ukraine" and the Charity Fund "Intellectual Perspective".

The research methodology used qualitative and quantitative methods. The study was carried out in 6 regions – Dnipropetrovsk, Kyiv, Kirovohrad, Odesa, Cherkasy regions and City of Kyiv. The regions were selected according to several criteria - the year of involvement in piloting and the introduction of medical reform; ratio of the number of ART districts/sites; average RMTCT. The study was carried out on the basis of regional AIDS prevention and management centres (hereinafter referred to as AIDS centres), anonymous testing sites/ART sites, in the facilities of the obstetric and gynaecological service (hereinafter referred to as the HCFs of the OGSU and primary health care facilities (hereinafter referred to as PHCFs).

According to the results of the study, the completeness and guality of the provision of medical services to HIV-positive pregnant women and children born to HIV-positive women did not reach the proper level in HCFs of the OGSU and especially in PHCFs in all the regions studied. In turn, in the context of reforming the health care system, the currently rather high potential of AIDS centres and their branches does not fully cover the need for services to prevent the mother-to-child transmission of HIV. including the current Unified Clinical Protocol for Health Care (hereinafter referred to as UCPHC).

The main problems in the provision of medical services to HIV-positive pregnant women and children born to HIV-positive women in the context of health care reform are:

• lack of sufficient funding to expand access to and adequate delivery of PMTCT services,

• shortage of personnel and dependence of PHCFs and HCFs of the OGSU on AIDS centres and their branches, which today remain the main facilities with a full range of PMTCT services and the ability to provide them to HIV-positive pregnant women and children born to HIV-positive women.

In accordance with the list of mandatory services specified by the PMTCT UCPHC, the problem areas for receiving PMTCT services were the following:

• The Alcohol, Smoking and Substance Involvement Screening Test (47.5% of the services provided in the PHCFs; 53.2% in the HCFs of the OGSU; 49.2% in the AIDS centres and 45.8% in the anonymous testing sites), • provision of HTSs to male partners of pregnant women (39.2% of the services provided in PHCFs; 66.7% in the HCFs of the OGSU),

• case management with the aim of forming adherence to ART (49.7% of the services provided at the HCFs of the OGSU),

• counselling on family planning and the choice of contraceptives in the postpartum period (74.1% of the services provided in the HCFs of the OGSU; 84.0% in AIDS centres and 76 3% in the anonymous testing sites),

• at-home patronage of a pregnant by family doctors (28.3% of the services provided in the PHCFs).

An inconvenient location of antenatal care facilities, AIDS centres and their branches is a significant barrier to timely receiving PMTCT services for a woman and her child. This is especially true for residents of small towns, villages, remote areas. In all the regions under study, social services were provided to a greater extent by NGOs on the basis of AIDS centres and anonymous testing sites, to a lesser extent in HCFs of the OGSU and were practically absent in PHCFs.

#### 6.6. UKRAINE'S PREPARATION FOR VALIDATING ELIMINATION OF THE MOTHER-TO-CHILD TRANSMISSION OF HIV, SYPHILIS, HBV

Ukraine, together with other countries of the world, supported the WHO initiative "Global Validation of Elimination of Motherto Child Transmission (EMTCT) of HIV, Viral Hepatitis and Congenital Syphilis" The triple elimination of HIV, VH and HBV increases the feasibility and benefits of such an integrated approach for achieving Sustainable Development Goals 3, 5 and 10, aimed at ensuring health, access to services and the empowerment of women, girls and children.

The consolidated management decisions are an important leverage for progressing the EMTCT. In 2019, the following organizational measures were carried out in the field of EMTCT:

• By Order of the Ministry of Health of Ukraine of August 19, 2019 No.1829, an interdepartmental working group was created on the validation of the EMTCT of HIV infection and syphilis.

• At the meeting of the National Council on Counteracting Tuberculosis and HIV/AIDS on August 22, 2019, the Roadmaps on the EMTCT of HIV and VH were approved, taking into account the recommendations of the WHO missions. In September 2019, the Roadmaps were sent to the regions for implementation.

• In pursuance of Order of the Vice Prime Minister of Ukraine of August 29, 2019 No.27962/3/1-19 and in accordance with the Letter of the Ministry of Health of Ukraine of October 25, 2019 No.26-04/43472/2-19 in all the regions and City of Kyiv the regional committees for the validation of the EMTCT were established.

In accordance with international requirements, within three years, the country will intend to validate the EMTCT of HIV (2021), VH (2022) and HBV (2023), subject to the achievement of mandatory target indicators.

### SECTION 7 PROVISION OF HEALTH CARE TO PLHIV

With its "treat-all" recommendation, WHO removes all limitations on eligibility for ART among people living with HIV This approach, commonly known as "Test and Start", allows patients to receive ART as soon as they are diagnosed with HIV in order to improve health outcomes<sup>44</sup>. Studies have shown a 53% reduction in HIV incidence and mortality as a result of early initiation of ART.

In 2015, in accordance with the new UNAIDS FAST TRACK global and regional strategy and the consolidated strategic information guidelines for HIV in the health sector, Ukraine amended the Clinical Protocol for Antiretroviral Treatment of HIV Infection in Adults and Adolescents.<sup>45</sup>

In 2019, a new clinical protocol on the use of antiretroviral drugs for the treatment and prevention of HIV infection was approved<sup>46</sup>. The introduction of new approaches to treatment over the past 5 years has made it possible to achieve tangible results.

As of 01.01.2020, 113,046 PLHIV received ART in the government-controlled territories of Ukraine (Annex 2, Table 31). The expansion of ART coverage comes at the expense of the state budget, the share of which has



increased over the past three years in comparison with other sources of funding from 47% to 69% (Figure 66).

HIV treatment services are provided by 439 ART sites, their number increased by 1/3 from 2017. Expansion of a network of facilities and organizations, providing health care to PLHIV, increased mainly due to the opening of new sites on the basis of outpatient health care facilities. The greatest number of new ART sites was opened in Chernihiv (+13), Luhansk (+12) and Mykolaiv regions (+12). Unlike Odesa region, where 14 ART sites ceased to function (Annex 2, Table 32).

<sup>&</sup>lt;sup>44</sup> WHO. Consolidated guidelines on the use of antiretroviral drugs for treating and preventing HIV infection Recommendations for a public health approach–Second edition, 2016.

<sup>&</sup>lt;sup>45</sup> Order of the Ministry of Health of Ukraine of 12.22.2015 No.887 "On Approval of Changes to the Clinical protocol for Antiretroviral Therapy of HIV Infection in Adults and Adolescents"

<sup>&</sup>lt;sup>46</sup> Order of the Ministry of Health of Ukraine of 05.06.2019 No.1292 "On Approval of a New Clinical Protocol on the Use of Antiretroviral Drugs for the Treatment and Prevention of HIV Infection"



#### FIGURE 67. NUMBER OF PLHIV ON ART IN UKRAINE, 2015-2019

According to the data of the HCFs, with which PLHIV are registered with, the number of people on ART increased by 13% compared to 2018. In 2019, additional 10,600 PLHIV were covered by treatment. A total 113,046 people received ART, of which 2,961 (2.6%) were children aged 18 and over (Figure 67).

As of the beginning of 2020, the number of patients on ART increased

almost in all regions of Ukraine: the greatest increase was reported in Kherson (+15.7%), Dnipropetrovsk (+15.2%) and Zakarpattia (+14.9) regions. The least increment of ART patients was reported in Ivano-Frankivsk (+1.2%) and Lviv (+2.0%) regions (Annex 2, Tables 33).

The rate of ART coverage among people linked to health care at the HCFs increased compared to the previous year from 75% to 83%<sup>47</sup>. As of the end of 2019 the highest rates were reported in Cherkasy (88%) and Zaporizhzhia (87%) regions, the lowest are in Ternopil (49%) and Lviv (62%) regions (Figure 68).

It should be noted that in some regions, the rate of ART coverage among patients of the outpatient facilities significantly increased compared to 2018: in Chernihiv region – from 71% to 84%, in Dnipropetrovsk region – from 73% to 84%, in the city of Kyiv – from 71% to 82%, in the Odesa region – from 65% to 75%. The opposite situation is observed, for example, in the Kharkiv region, where the indicator declined from 73% to 68%.



### FIGURE 68. ART COVERAGE AMONG PATIENTS OF THE OUTPATIENT FACILITIES AS OF 01.01.2020 (%)

<sup>47</sup> Excluding data from the Autonomous Republic of Crimea, City of Sevastopol, and territories of the Donetsk and Luhansk regions, temporarily uncontrolled by the Government of Ukraine. Data source<sup>^</sup> Form No.56 "Report on the Provision of Antiretroviral Therapy to HIV-Infected People in December 2019" FIGURE 69. THE LEVEL OF IMMUNOSUPPRESSION AMONG INDIVIDUALS WHO WERE SUBJECT TO STUDY TO DETERMINE THE ABSOLUTE OR RELATIVE COUNT OF CD4 LYMPHOCYTES WHEN THEY AT ENGAGEMENT IN HIV CARE, 2019



As noted above, in Ukraine there is still a situation of late HIV diagnosis, which is a negative factor for achieving success in the treatment of HIV infection. In 2019, 5,134 PLHIV (32%) were registered with HCFs at IV clinical stage.

According statistics, 59% of PLHIV of all age groups at diagnosis of HIV infection had the degree of immunosuppression less than 350 cells/ $\mu$ l, 35% – less than 200 cells/ $\mu$ l. (Figure 69).

Severe immunosuppression leads to an increase in the incidence of TB among PLHIV. In 2019, among 17,000 PLHIV who were linkage to HIV care services, 20.3% (3,456) were diagnose with active tuberculosis, 55.8% (9,511) started tuberculosis prevention treatment, 4,860 PLHIV started treatment for tuberculosis and were on ART.

Providing ART to all PLHIV regardless of CD4 cell count has been an important step in achieving success in treatment and care, and in helping to address the threat of HIV spread in a public health context. UNAIDS emphasizes that despite the varying degrees of ART coverage in different countries, since 2016, there has been a steady trend towards increased access to ART, early initiation of treatment and the use of ARV drugs to prevent HIV infection.

By 2010, when the normative criterion for starting ART in Ukraine was a decrease in the CD4 level below 350 cells/ $\mu$ l, the average

#### REGISTRATION WITH HCFS, TAKING INTO ACCOUNT THE STANDARD CRITERION FOR STARTING TREATMENT, DEPENDING ON THE LEVEL OF CD4 COUNT, 2007-2019. CD4 < 350 CD4 < 500 At any CD4 level 1586 1 392 1160 Waiting time in days 938 792 538 407 309 203 88 44 15 11,2 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019

FIGURE 70. AVERAGE WAITING TIME TO START ART FOR PLHIV FROM THE TIME OF

waiting time for ART from linking to HIV care services was about 40 months, that is, more than 3 years (Figure 70). Between 2010 and 2015, after the criterion for starting ART was raised to a CD4 count of 50 cells/ $\mu$ l, the average waiting time was reduced to 18 months (1.5 years). After the normative approval of the "treat all" approach, the rate of ART initiation began to grow rapidly and the waiting time for ART, accordingly, decreased to 11.2 days in 2019.

In addition to reducing the waiting time for ART and taking into account the WHO recommendations, considerable attention was paid to the optimization of treatment regimens<sup>48</sup>. Given the emergence of new, more effective and safer antiretroviral drugs, ART regimens are systematically aligned with the best international practices.

Thus, among the NRTI users, didanosine (ddi) and stavudine (d4T) are no longer used, and the share of regimens with zidovudine (AZT) was reduced more than 10 times in favour of tenofovir-containing drugs.

Among new ART regimens, priority is given to regimens with the most efficacious and safest drug, dolutegravir (DTG). Most of the patients receive first-line ART – 95.4%, second-line ART – 4.4% and only 0.4% receive second-line ART (Annex 2, Table 34).

In 2019, 78% of PLHIV who received ART for more than 6 months were tested for VL (Annex 2, Table 35). The effectiveness of ART among the tested individuals, whose VL level is <1000 copies/ml, generally increased in all regions and amounted to 94% [85–99]. The highest rates were reported in Odesa (99%) and Kyiv (77%) regions, the lowest rates – in Kirovohrad and Ternopil (85%) regions (Figure 71).

In fact, in all regions of Ukraine, the UNAIDS target "90% of PLHIV who know their HIV receive ART" was not achieved. Now it is strategically important to narrow the gap between the estimated number of PLHIV and PLHIV who know their status – to detect about 53,000 PLHIV and provide them with medical services.



#### FIGURE 71. EFFECTIVENESS OF ART AMONG PLHIV WHO ARE LINKAGE TO HIV CARE SERVICES AT HCFS, BY REGIONS, UKRAINE (VL <1000 COPIES/ML), 2019

<sup>47</sup> Update of recommendations on first- and second-line antiretroviral regimens Geneva, Switzerland: World Health Organization; 2019 (WHO/CDS/HIV/19.15)



### ANNEX 1

**Table 1.** Generalized evaluation of the HIV/AIDS situation in Ukraine as of the end of 2019 and projected indicators for theperiod up to 2025

Estimated indicators	2019	2020	2021	2022	2023	2024	2025
Total number of PLHIV (all age groups, thousand)	250	255	258	260	262	264	266
	(230–270)	(235–277)	(236–280)	(237–283)	(238–286)	(239–290)	(240–293)
Total number of PLHIV (adults aged $\geq$ 15 years, thousand)	250	253	255	258	260	262	265
	(230–270)	(232–274)	(233–277)	(235–280)	(236–284)	(237–287)	(238–291)
HIV incidence rate (adults aged $\ge$ 15 years, %)	0.66	0.68	0.69	0.7	0.71	0.71	0.72
	(0.61–0.71)	(0.62–0.73)	(0.63–0.75)	(0.63–0.76)	(0.64–0.77)	(0.65–0.78)	(0.65–0.8)
Total number of PLHIV (adults aged 15 to 49 years, thousand)	204	204	202	200	197	193	188
	(191–216)	(191–218)	(188–218)	(184–216)	(180–214)	(175–211)	(170–207)
HIV incidence rate (adults aged $\ge$ 15 years, %)	1.0	1.0	1.0	1.0	0.99	0.98	0.96
	(0.9–1.0)	(0.93–1.07)	(0.93–1.08)	(0.92–1.08)	(0.9–1.08)	(0.89–1.07)	(0.87–1.06)
Number of new HIV diagnoses (adults aged ≥ 15 years, thousand)	13.0	11.9	9.3	8.6	8.2	7.7	7.3
	(10.0–15.0)	(9.7–14.4)	(7.6–11.3)	(7.0–10.5)	(6.6–10.0)	(6.2–9.5)	(5.7–9.1)
Number of new HIV diagnoses per 1,000 adults	0.3	0.3	0.2	0.2	0.2	0.2	0.2
(aged ≥ 15 years)	(0.2–0.4)	(0.3–0.4)	(0.2–0.3)	(0.2–0.3)	(0.2–0.3)	(0.2–0.3)	(0.2–0.2)
Number of new HIV diagnoses (adults aged 15 to 49 years, thousand)	11.6	11.0	8.6	8	7.5	7.1	6.7
	(9.7–14.0)	(9.1–13.2)	(7.1–10.3)	(6.5–9.4)	(6.2–9.1)	(5.8–8.6)	(5.4–8.2)
Number of new HIV diagnoses per 1,000 adults (adults aged 15 to 49 years, thousand)	0.6	0.5	0.4	0.4	0.4	0.4	0.3
	(0.5–0.7)	(0.4–0.6)	(0.4–0.5)	(0.3–0.5)	(0.3–0.5)	(0.3–0.4)	(0.3–0.4)
Total number of PLHIV (children aged $\leq$ 14 years, thousand)	2.9	2.7	2.6	2.3	2.2	2.0	1.9
	(2.5–3.5)	(2.4–3.4)	(2.2–3.2)	(2.0–2.9)	(1.8–2.8)	(1.6–2.6)	(1.5–2.4)
Number of new HIV diagnoses (children aged $\leq$ 14 years, thousand)	168	158	136	120	109	100	92
	(139–271)	(123–263)	(93–225)	(72–198)	(59–173)	(56–158)	(54–141)
Number of AIDS-related deaths (adults aged over 15 years, thousand)	5.9	4.6	3.8	3.3	2.9	2.4	2
	(4.5–8.0)	(3.4–6.3)	(2.8–5.3)	(2.4–4.7)	(2.1–4.0)	(1.8–3.3)	(1.5–2.7)

### ANNEX 2

#### 2017 2018 2019 Groups of people People People who tested People People who tested People People who tested SEM screened for HIV screened for positive for HIV screened for positive for HIV screened for positive for HIV code HIV abs. % HIV abs. % HIV abs. % number number number Total Ukrainian citizens, including those 2,394,364 23,027 2,415,202 22,881 0.9 2,526,525 22,309 0.9 100 1.0 classified by particular SEM codes People who had sex with HIV-positive 101 18.079 1.976 10.9 43.572 2.123 4.9 26.568 2,248 8.5 partners 102 People who inject drugs 181.294 2,467 1.4 173,305 2,248 1.3 128,219 2,662 2.1 People who had homosexual contacts with 103 41,645 508 1.2 42,124 450 1.1 25,520 386 1.5 partners whose HIV status is unknown 104 People with STIs or related symptoms 42,922 405 0.9 43,523 433 1.0 40,284 352 0.9 People engaged in risky sexual behaviour 105 130,452 1,533 1.2 134,614 1,601 1.2 147,249 1,652 1.1 106 Conscripts, cadets 92,490 285 0.3 87,070 211 0.2 86,457 184 0.2 People from other groups at risk of HIV 107 49.060 413 0.8 57,262 518 0.9 48.660 392 0.8 screened when epidemiologically indicated 108 Blood, organ and tissue donors 550,622 470 0.1 520,021 413 0.1 539,767 320 0.1 109.1 Pregnant women 359,171 0.3 383,559 1,247 0.3 1,016 341,383 792 0.2 Children aged 18 months and older born to 111 2,678 19 0.7 2,432 13 0.5 2,229 14 0.6 HIV-positive women, who were screened to establish the final HIV diagnosis 112 People in detention facilities 29,369 974 3.3 34,298 1,027 3.0 53,089 1,433 2.7 113 People seeking health care at HCFs with 315,774 6,537 2.1 383,634 7,029 1.8 521,406 7,080 1.4 diseases, which meet the criteria for HIV testing services 114 People tested anonymously 27,719 697 2.5 26,616 475 1.8 25,047 268 1.1 115 People at risk of HIV as a result of invasive 846 0 0.0 1,414 3 0.2 1,442 4 0.3 procedures 116 People tested on their own initiative 524,598 2.794 0.5 503.046 2.767 0.6 536.391 2.147 0.4 119 Deceased people 774 202 26.1 804 229 28.5 652 185 28.4

#### Table 1. Results of seroepidemiological monitoring (SEM) of the spread of HIV, by SEM codes, Ukraine, 2017-2019
Persion	Code 100 (Ukrainian citizens, total)							
Region	People scree	ened for HIV	People who teste	d positive for HIV	Ranking			
	number of people	per 100,000 population	abs. number	%				
Total Ukraine	2,526,525	6,560	22,309	0.9				
Vinnytsia	71,055	4,531	420	0.6	13			
Volyn	84,663	8,165	228	0.3	3			
Dnipropetrovsk	300,159	9,325	4,488	1.5	23			
Donetsk	131,675	6,910	1,650	1.3	21			
Zhytomyr	61,009	4,977	516	0.8	17			
Zakarpattia	68,272	5,429	149	0.2	2			
Zaporizhzhia	132,015	7,700	665	0.5	11			
Ivano-Frankivsk	50,721	3,688	181	0.4	6			
Kyiv	90,942	5,164	1,361	1.5	24			
Kirovohrad	40,179	4,225	600	1.5	22			
Luhansk	51,197	7,478	205	0.4	7			
Lviv	94,440	3,739	584	0.6	14			
Mykolaiv	82,498	7,261	727	0.9	18			
Odesa	199,598	8,381	3,344	1.7	25			
Poltava	58,806	4,179	484	0.8	16			
Rivne	73,268	6,322	232	0.3	5			
Sumy	50,520	4,644	228	0.5	9			
Ternopil	37,697	3,593	111	0.3	4			
Kharkiv	175,967	6,554	815	0.5	10			
Kherson	67,573	6,483	692	1.0	19			
Khmelnytskyi	76,992	6,064	346	0.4	8			
Cherkasy	88,214	7,270	474	0.5	12			
Chernivtsi	61,588	6,801	107	0.2	1			
Chernihiv	69,374	6,849	498	0.7	15			
City of Kyiv	308,103	10,470	3,204	1.0	20			

#### Table 2. Results of the seroepidemiological monitoring (SEM) of HIV prevalence, by regions, Ukraine, 2019

⊳	
z	
z	
Ē	
$\mathbf{x}$	
m	
S	

#### Table 3. Rapid HIV testing in Ukraine, 2017-2019

		2017		2018 2019		2018 2019			
SEM code	Number of people screened using rapid tests	% of total number of people screened using rapid tests (code 100)	% of people screened for HIV under respective SEM code	Number of people screened using rapid tests	% of total number of people screened using rapid tests (code 100)	% of people screened for HIV under respective SEM code	Number of people screened using rapid tests	% of total number of people screened using rapid tests (code 100)	% of people screened for HIV under respective SEM code
100	481,145	100.0	20.1	628,461	100.0	26.0	823,686	100.0	32.6
101	1213	0.3	6.7	19,612	3.1	45.0	20,849	2.5	78.5
102	166,113	34.5	91.6	161,075	25.6	92.9	116,156	14.1	90.6
103	41,260	8.6	99.1	41,727	6.6	99.1	24,369	3.0	95.5
104	10,883	2.3	25.4	12,253	1.9	28.2	17,391	2.1	43.2
105	70,426	14.6	54.0	79,219	12.6	58.8	93,802	11.4	63.7
107	14,324	3.0	29.2	23,732	3.8	41.4	20,083	2.4	41.3
109.1	6541	1.4	1.7	9065	1.4	2.5	7202	0.9	2.1
109.2	4633	1.0	1.2	7053	1.1	1.9	9207	1.1	2.8
112	24,297	5.0	82.7	31,152	5.0	90.8	51,509	6.3	97.0
113	69,212	14.4	21.9	144,704	23.0	37.7	301,529	36.6	57.8
113 TB	15,860	3.3	39.7	18,622	3.0	46.6	28,958	3.5	66.9
113 Inf.	7650	1.6	29.4	13,451	2.1	51.7	21,193	2.6	55.9
113 other	45,702	9.5	18.3	112,631	17.9	45.1	246,955	30.0	57.7
114	2650	0.6	9.6	6571	1.0	24.7	8934	1.1	35.7
116	52,010	10.8	9.9	87,568	13.9	17.4	144,336	17.5	26.9

	2017			2018	2019				
SEM code	New HIV diagnoses detected using rapid tests	% of total number of HIV- positive people (code 100)	% of people who tested positive for HIV under corresponding SEM code	New HIV diagnoses detected using rapid tests	% of total number of HIV-positive people (code 100)	% of people who tested positive for HIV under corresponding SEM code	New HIV diagnoses detected using rapid tests	% of total number of HIV-positive people (code 100)	% of people who tested positive for HIV under corresponding SEM code
100	5864	100.0	25.5	7800	100.0	34.1	11,413	100.0	51.2
101	886	15.1	44.8	1219	15.6	57.4	1658	14.5	73.8
102	1157	19.7	46.9	1180	15.1	52.5	1861	16.3	69.9
103	397	6.8	78.1	309	4.0	68.7	284	2.5	73.6
104	112	1.9	27.7	177	2.3	40.9	172	1.5	0.4
105	666	11.4	43.4	882	11.3	55.1	1085	9.5	65.7
107	52	0.9	12.6	130	1.7	25.1	122	1.1	31.1
109.1	77	1.3	6.2	52	0.7	5.1	62	0.5	7.8
112	353	6.0	36.2	458	5.9	44.6	809	7.1	56.5
113	1784	30.4	27.3	2703	34.7	38.5	4428	38.8	62.5
113 TB	438	7.5	30.4	558	7.2	38.8	805	7.1	67.9
113 Inf.	222	3.8	26.2	223	2.9	26.4	519	4.5	58.4
113 other	1124	19.2	26.4	1922	24.6	45.2	3089	27.1	62.5
114	37	0.6	5.3	75	1.0	15.8	139	1.2	51.9
116	321	5.5	11.5	587	7.5	21.2	750	6.6	34.9

**Table 4.** Detection of new HIV diagnoses by rapid HIV testing, Ukraine, 2017-2019

	Number o	f screened people am	iong KPs	Total new HIV	New	HIV diagnoses in KPS*	*		
Region	Total number of screened people*	People screened for HIV	% of screened people	Ranking	diagnoses detected*	people who tested positive for HIV	% of total number of people who tested positive for HIV	Ranking	
Total Ukraine	1,645,375	213,284	13.0		21,197	3,476	16.4		
Vinnytsia	41,310	4,902	11.9	14	380	43	11.3	15	
Volyn	51,523	745	1.4	25	214	22	10.3	17	
Dnipropetrovsk	207,879	44,536	21.4	2	4,336	1,056	24.4	1	
Donetsk	92,998	2,126	2.3	24	1,572	118	7.5	22	
Zhytomyr	40,024	5,058	12.6	12	480	56	11.7	13	
Zakarpattia	39,727	1,343	3.4	23	133	3	2.3	25	
Zaporizhzhia	84,530	4,863	5.8	17	632	87	13.8	9	
Ivano-Frankivsk	26,444	1,127	4.3	21	166	23	13.9	7	
Kyiv	58,807	10,743	18.3	6	1,305	292	22.4	3	
Kirovohrad	21,012	1,207	5.7	18	566	60	10.6	16	
Luhansk	36,826	9,297	25.2	1	196	27	13.8	8	
Lviv	47,458	10,077	21.2	3	544	87	16.0	6	
Mykolaiv	53,069	5,707	10.8	15	675	56	8.3	20	
Odesa	147,059	6,170	4.2	22	3,203	387	12.1	12	
Poltava	29,293	4,686	16.0	8	453	62	13.7	10	
Rivne	47,935	4,509	9.4	16	216	25	11.6	14	
Sumy	30,341	4,268	14.1	10	208	17	8.2	21	
Ternopil	20,400	3,059	15.0	9	99	10	10.1	18	
Kharkiv	122,666	25,569	20.8	4	769	174	22.6	2	
Kherson	46,089	8,063	17.5	7	653	144	22.1	4	
Khmelnytskyi	35,779	4,371	12.2	13	302	12	4.0	23	
Cherkasy	65,088	3,125	4.8	20	444	60	13.5	11	
Chernivtsi	32,741	4,193	12.8	11	94	3	3.2	24	
Chernihiv	50,480	2,652	5.3	19	463	46	9.9	19	
City of Kyiv	215,897	40,888	18.9	5	3,094	606	19.6	5	

## **Table 5.** Results of seroepidemiological monitoring of key populations at risk for HIV,

\* excluding donors and pregnant women

# **Table 6.** Results of the SEM among people who hadheterosexual contacts with HIV-positive partners, 2019

Region	Code 101.1 (Pe cont	Ranking		
	people screened for	people who positive fo	tested or HIV	
	HIV	abs. number	%	
Total Ukraine	26,069	2,206	8.5	
Vinnytsia	333	37	11.1	14
Volyn	371	13	3.5	5
Dnipropetrovsk	3,164	496	15.7	21
Donetsk	1674	218	13.0	17
Zhytomyr	1748	49	2.8	3
Zakarpattia	83	14	16.9	23
Zaporizhzhia	820	83	10.1	13
Ivano-Frankivsk	81	10	12.3	15
Kyiv	4561	229	5.0	6
Kirovohrad	788	71	9.0	12
Luhansk	1025	18	1.8	1
Lviv	485	10	2.1	2
Mykolaiv	1091	71	6.5	9
Odesa	2469	345	14.0	18
Poltava	2441	71	2.9	4
Rivne	203	13	6.4	7
Sumy	162	20	12.3	16
Ternopil	79	12	15.2	19
Kharkiv	180	39	21.7	25
Kherson	865	67	7.7	10
Khmelnytskyi	165	27	16.4	22
Cherkasy	811	52	6.4	8
Chernivtsi	84	13	15.5	20
Chernihiv	237	46	19.4	24
City of Kyiv	2149	182	8.5	11

**Table 7.** Results of the SEM among people who inject drugs,<br/>by regions, Ukraine, 2019

Region	c	Ranking		
	people	people who tes	ted positive	
	screened for		IV ov	
Total Ukraino	128 210	abs. number	<u>%</u>	
Vinnytsia	2 2 2 5	2,002	0.8	8
Volum	122	11	8.2	22
Dninronotrovsk	20 8/7	02/	2.1	19
Donotsk	1476	104	7.0	22
Zhutomur	2477	104	1.3	12
Zilytolliyi Zakarnattia	992	+1	0.2	2
Zakai pattia Zanorizhzhia	2206	62	2.7	16
Lupon Erankivsk	2300	7	7 24	
Kviv	7572	265	2.5	20
Kylv	182	205	24.7	20
Luhansk	7406	25	0.3	5
Luiu	5586	50	0.9	10
Mykolaiv	2258	36	1.6	10
Odosa	2670	215	11.0	24
Poltava	2075	22	11.8	11
Rivne	2997	17	0.5	7
Sumv	2257	11	0.5	6
Ternonil	1727	3	0.3	2
Kharkiv	14 083	119	0.8	9
Kherson	5737	127	2.2	15
Khmelnytskyi	2389	7	0.3	1
Cherkasy	623	38	6.1	21
Charnivtsi	2817	38	0.1	1
Chernihiv	1391	41	2.9	17
City of Kviv	23.429	341	1.5	13

	Code			
Region		(MSM)		Ranking
	people screened	people wh	o tested	
	for HIV	positive	for HIV	
		abs.	%	
		number		
Total Ukraine	26,019	428	1.6	
Vinnytsia	599	12	2.0	16
Volyn	100	7	7.0	20
Dnipropetrovsk	535	29	5.4	18
Donetsk	25	9	36.0	24
Zhytomyr	359	6	1.7	14
Zakarpattia	16	0	0.0	1
Zaporizhzhia	159	9	5.7	19
Ivano-Frankivsk	22	7	31.8	23
Kyiv	1211	7	0.6	10
Kirovohrad	2	1	50.0	25
Luhansk	11	0	0.0	2
Lviv	2940	23	0.8	12
Mykolaiv	862	4	0.5	8
Odesa	494	46	9.3	21
Poltava	138	7	5.1	17
Rivne	654	2	0.3	7
Sumy	184	1	0.5	9
Ternopil	473	4	0.8	13
Kharkiv	3741	29	0.8	11
Kherson	772	1	0.1	6
Khmelnytskyi	4	0	0.0	3
Cherkasy	23	4	17.4	22
Chernivtsi	865	0	0.0	4
Chernihiv	1	0	0.0	5
City of Kyiv	11,829	220	1.9	15

# **Table 8.** Results of the SEM among men who had sex withmen (MSM), by regions, Ukraine, 2019

# **Table 9.** Results of the SEM among people who had STIs orrelated symptoms, by regions, Ukraine, 2019

Region	(patients with	patients with STIs or related symptoms)			
	people	people v	vho tested		
	screened	positiv	e for HIV		
	for HIV	abs.	%		
		number			
Total Ukraine	40,284	352	0.9		
Vinnytsia	443	4	0.9	15	
Volyn	508	4	0.8	10	
Dnipropetrovsk	11,243	91	0.8	12	
Donetsk	617	5	0.8	13	
Zhytomyr	451	8	1.8	23	
Zakarpattia	187	1	0.5	5	
Zaporizhzhia	2334	14	0.6	7	
Ivano-Frankivsk	791	9	1.1	18	
Kyiv	1070	7	0.7	8	
Kirovohrad	1023	14	1.4	19	
Luhansk	507	2	0.4	3	
Lviv	649	14	2.2	25	
Mykolaiv	1764	16	0.9	16	
Odesa	2930	24	0.8	14	
Poltava	826	17	2.1	24	
Rivne	358	6	1.7	22	
Sumy	1451	5	0.3	1	
Ternopil	415	3	0.7	9	
Kharkiv	4587	26	0.6	6	
Kherson	984	15	1.5	20	
Khmelnytskyi	1417	5	0.4	2	
Cherkasy	2145	17	0.8	11	
Chernivtsi	93	1	1.1	17	
Chernihiv	1138	5	0.4	4	
City of Kyiv	2353	39	1.7	21	

**Table 10.** Results of the SEM among people who are indetention facilities, including pre-trial detention centres, byregions, Ukraine, 2019

	Cod			
Region	people	people w	ho tested	Ranking
	screened for	positive	for HIV	
	HIV	abs.	%	
		number		
Total Ukraine	53,089	1433	2.7%	
Vinnytsia	3235	24	0.7%	4
Volyn	1326	20	1.5%	14
Dnipropetrovsk	7807	643	8.2%	23
Donetsk	2827	74	2.6%	21
Zhytomyr	3217	29	0.9%	8
Zakarpattia	242	2	0.8%	7
Zaporizhzhia	4428	52	1.2%	10
Ivano-Frankivsk	19	7	36.8%	24
Kyiv	1299	12	0.9%	9
Kirovohrad	1481	35	2.4%	20
Luhansk	722	9	1.2%	11
Lviv	2906	50	1.7%	15
Mykolaiv	1947	36	1.8%	17
Odesa	2473	58	2.3%	19
Poltava	2080	48	2.3%	18
Rivne	1278	10	0.8%	5
Sumy	1471	12	0.8%	6
Ternopil	872	5	0.6%	3
Kharkiv	6224	82	1.3%	12
Kherson	2001	35	1.7%	16
Khmelnytskyi	2187	10	0.5%	2
Cherkasy	1086	32	2.9%	22
Chernivtsi	725	0	0.0%	1
Chernihiv	1020	15	1.5%	13
City of Kyiv	216	133	61.6%	25

**Table 11.** Results of the SEM among donors of blood andits components, organs, tissues, other cells and biologicalfluids, by regions, Ukraine, 2019

	Coo				
Region	people	people w	ho tested	Ranking	
	screened for	positive	e for HIV		
	HIV	abs.	%		
		number			
Total Ukraine	539,767	320	0.06%		
Vinnytsia	17,093	16	0.09%	23	
Volyn	21,694	5	0.02%	3	
Dnipropetrovsk	59,132	52	0.09%	22	
Donetsk	26,501	16	0.06%	15	
Zhytomyr	10,570	7	0.07%	18	
Zakarpattia	13,584	5	0.04%	9	
Zaporizhzhia	34,773	15	0.04%	10	
Ivano-Frankivsk	11,977	6	0.05%	13	
Kyiv	16,162	8	0.05%	12	
Kirovohrad	11,119	8	0.07%	19	
Luhansk	10,940	1	0.01%	2	
Lviv	24,411	16	0.07%	17	
Mykolaiv	21,001	12	0.06%	14	
Odesa	27,767	47	0.17%	25	
Poltava	20,428	13	0.06%	16	
Rivne	11,567	5	0.04%	11	
Sumy	12,860	4	0.03%	5	
Ternopil	8967	7	0.08%	20	
Kharkiv	33,652	8	0.02%	4	
Kherson	12,767	4	0.03%	6	
Khmelnytskyi	29,473	30	0.10%	24	
Cherkasy	14,072	5	0.04%	8	
Chernivtsi	18,899	1	0.01%	1	
Chernihiv	11,267	9	0.08%	21	
City of Kyiv	59,091	20	0.03%	7	

**Table 12.** Results of the SEM among people with diseases, symptoms and syndromes under which HIV testing services areoffered when seeking medical help in HCFs, by regions, Ukraine, 2019

Region	Code 113 (People seeking he	Ranking		
	people screened for HIV	people who test	ed positive for HIV	
		abs. number	%	
Total Ukraine	521,406	7080	1.36	
Vinnytsia	11,687	146	1.25	15
Volyn	11,053	57	0.52	4
Dnipropetrovsk	56,101	1067	1.90	19
Donetsk	47,192	695	1.47	17
Zhytomyr	4101	118	2.88	24
Zakarpattia	7784	43	0.55	5
Zaporizhzhia	32,592	223	0.68	6
Ivano-Frankivsk	7882	59	0.75	9
Kyiv	15,770	444	2.82	23
Kirovohrad	5560	250	4.50	25
Luhansk	8980	73	0.81	10
Lviv	11,881	126	1.06	13
Mykolaiv	11,460	230	2.01	22
Odesa	67,671	1290	1.91	20
Poltava	9109	151	1.66	18
Rivne	13,753	68	0.49	3
Sumy	13,492	99	0.73	8
Ternopil	5201	38	0.73	7
Kharkiv	20,245	195	0.96	12
Kherson	10,906	216	1.98	21
Khmelnytskyi	10,381	125	1.20	14
Cherkasy	36,326	160	0.44	2
Chernivtsi	10,504	39	0.37	1
Chernihiv	9992	83	0.83	11
City of Kyiv	81,783	1085	1.33	16

	2017				2018			2019	
Region	absolute	per 100,000	growth rate,	absolute	per 100,000	growth rate,	absolute	per 100,000	growth rate,
	number	population	%	number	population	%	number	population	%
Total Ukraine	15,680	40.6	9.8	15,749	40.8	0.5	16,357	42.5	4.1
Vinnytsia	259	16.4	13.6	284	18	9.7	301	19.2	6.6
Volyn	233	22.5	9.6	224	21.6	-3.9	156	15.0	-30.3
Dnipropetrovsk	3171	98.3	18.1	3,064	94.9	-3.4	3,640	113.1	19.2
Donetsk**	1243	63.7	8.3	1,410	73	14.7	1,503	78.9	8.0
Zhytomyr	376	30.4	4.6	404	32.7	7.4	386	31.5	-3.7
Zakarpattia	102	8.1	21.5	118	9.4	15.7	93	7.4	-21.3
Zaporizhzhia	567	32.8	-7.3	609	35.2	7.4	546	31.8	-9.5
Ivano-Frankivsk	147	10.7	2.3	147	10.7	0	131	9.5	-11.0
Kyiv	858	49.4	-6.3	820	47.2	-4.4	777	44.1	-6.5
Kirovohrad	488	51.1	43.1	411	43.1	-15.8	581	61.1	41.8
Luhansk**	205	29.1	-0.8	181	26.1	-10.3	184	26.9	3.0
Lviv	392	15.6	-5.5	453	18	15.6	409	16.2	-10.0
Mykolaiv	772	67.4	-12.1	731	63.8	-5.3	675	59.4	-6.9
Odesa	2334	98.3	32.2	2,243	94.5	-3.9	2,322	97.5	3.2
Poltava	310	21.9	-6.9	351	24.8	13.2	365	25.9	4.6
Rivne	166	14.3	-16.5	214	18.4	28.9	157	13.5	-26.4
Sumy	184	16.8	11.8	203	18.5	10.3	167	15.4	-17.0
Ternopil	80	7.6	-30	69	6.6	-13.8	87	8.3	25.6
Kharkiv	576	21.5	10	565	21.1	-1.9	595	22.2	5.0
Kherson	547	52.1	14.3	425	40.5	-22.3	576	55.3	36.4
Khmelnytskyi	189	14.8	18.3	228	17.9	20.6	211	16.6	-7.2
Cherkasy	417	34.1	-13.8	446	36.5	7	478	39.4	7.9
Chernivtsi	74	8.2	1.5	81	9	9.5	83	9.2	1.8
Chernihiv	453	44.5	20.4	430	42.2	-5.1	444	43.8	3.9
City of Kyiv	1537	53.2	11	1,638	56.7	6.6	1,490	50.6	-10.7

#### Table 13. HIV incidence in Ukraine\*

\* Reported incidence rate — does not include children with indeterminate HIV status born to HIV-positive women.

\*\* Indicator calculated base on the population in the territory of Donetsk and Luhansk regions controlled by the Ukrainian Government

Region	Coverage of registration with HCFs	ge of registration with HCFs Coverage of CD4 count test		% of PLHIV registered with HCFs, %			
inc Bioli	among HIV-positive people from the	among HIV-positive patients, %	diagnosed with III-IV clinical	with immunosuppression			
	number of detected HIV diagnoses		stages of HIV infection	CD4 level < 350 cells/µl			
	According to the SEM1, %			(from screened people)			
Total Ukraine	82.6	91.9	53.6	59.01			
Vinnytsia	87.6	79.6	59.2	69.75			
Volyn	86.4	85.3	60.9	50.38			
Dnipropetrovsk	88.3	88.2	46.4	60.70			
Donetsk	102.5	86.7	58.5	58.74			
Zhytomyr	86.8	94.8	49.0	54.95			
Zakarpattia	75.2	92.5	51.6	68.60			
Zaporizhzhia	92.6	92.9	40.3	63.91			
Ivano-Frankivsk	89.0	91.5	35.4	64.71			
Kyiv	64.2	79.2	53.7	58.13			
Kirovohrad	108.2	86.9	55.9	48.80			
Luhansk	100.0	84.8	52.2	56.41			
Lviv	81.3	100.0	51.5	66.50			
Mykolaiv	106.5	100.0	50.5	67.51			
Odesa	78.1	99.3	72.9	61.19			
Poltava	82.6	93.4	46.7	42.60			
Rivne	81.5	94.9	47.4	56.08			
Sumy	87.7	76.2	54.3	56.00			
Ternopil	103.6	98.8	40.7	52.94			
Kharkiv	81.6	95.1	65.4	49.02			
Kherson	95.4	94.3	36.9	58.30			
Khmelnytskyi	73.1	100.0	67.8	52.13			
Cherkasy	112.9	85.1	32.9	53.20			
Chernivtsi	93.5	86.4	32.1	54.29			
Chernihiv	102.2	97.0	49.8	51.29			
City of Kyiv	52.1	98.1	55.5	61.57			

 Table 14. Timeliness indicators of the registration of HIV-positive people with HCFs, Ukraine, 2019

<sup>1</sup> including children born to HIV-positive women whose HIV status is indeterminate

Region	Number of screened PLHIV	with degree of immunosuppression expressed in CD4 count									
/ Organization	at the time of registration with HCFs	< 350 cells/µl	%	350-499 cells/μl	%	≥ 500 cells/µl	%				
Total Ukraine	14,941	8817	59%	2666	17.8%	3458	23.1%				
Vinnytsia	238	166	70%	41	17.2%	31	13.0%				
Volyn	133	67	50%	31	23.3%	35	26.3%				
Dnipropetrovsk	3191	1937	61%	602	18.9%	652	20.4%				
Donetsk	1299	763	59%	227	17.5%	309	23.8%				
Zhytomyr	364	200	55%	62	17.0%	102	28.0%				
Zakarpattia	86	59	69%	12	14.0%	15	17.4%				
Zaporizhzhia	507	324	64%	89	17.6%	94	18.5%				
Ivano-Frankivsk	119	77	65%	17	14.3%	25	21.0%				
Kyiv	609	354	58%	125	20.5%	130	21.3%				
Kirovohrad	502	245	49%	92	18.3%	165	32.9%				
Luhansk	156	88	56%	29	18.6%	39	25.0%				
Lviv	406	270	67%	69	17.0%	67	16.5%				
Mykolaiv	671	453	68%	106	15.8%	112	16.7%				
Odesa	2293	1403	61%	393	17.1%	497	21.7%				
Poltava	338	144	43%	33	9.8%	161	47.6%				
Rivne	148	83	56%	28	18.9%	37	25.0%				
Sumy	125	70	56%	29	23.2%	26	20.8%				
Ternopil	85	45	53%	13	15.3%	27	31.8%				
Kharkiv	563	276	49%	148	26.3%	139	24.7%				
Kherson	542	316	58%	100	18.5%	126	23.2%				
Khmelnytskyi	211	110	52%	37	17.5%	64	30.3%				
Cherkasy	406	216	53%	66	16.3%	124	30.5%				
Chernivtsi	70	38	54%	9	12.9%	23	32.9%				
Chernihiv	427	219	51%	77	18.0%	131	30.7%				
City of Kyiv	1452	894	62%	231	15.9%	327	22.5%				

**Table 15.** The degree of immunosuppression of PLHIV at the time of registration with HCFs, according to the results of CD4lymphocyte count test, 2019

Region	20	17	20	18	2019		
iceBion	number of people	share from new HIV diagnoses	number of people	share from new HIV diagnoses	number of people	share from new HIV diagnoses	
Total Ukraine	944	6.0	763	4.8	733	4.5	
Vinnytsia	22	8.6	20	7.0	21	7.0	
Volyn	23	10.0	29	12.9	13	8.3	
Dnipropetrovsk	128	4.1	108	3.5	78	2.1	
Donetsk	52	4.2	55	3.9	61	4.1	
Zhytomyr	29	7.8	19	4.7	24	6.2	
Zakarpattia	11	10.9	8	6.8	9	9.7	
Zaporizhzhia	36	6.4	27	4.4	23	4.2	
Ivano-Frankivsk	13	8.8	13	8.8	13	9.9	
Kyiv	57	6.7	35	4.3	34	4.4	
Kirovohrad	26	5.3	17	4.1	15	2.6	
Luhansk	14	6.8	11	6.1	8	4.3	
Lviv	28	7.2	28	6.2	30	7.3	
Mykolaiv	43	5.6	32	4.4	23	3.4	
Odesa	157	6.8	114	5.1	113	4.9	
Poltava	18	5.9	8	2.3	13	3.6	
Rivne	11	6.7	19	8.9	15	9.6	
Sumy	11	6.0	13	6.4	13	7.8	
Ternopil	7	8.8	5	7.2	7	8.0	
Kharkiv	39	6.8	32	5.7	31	5.2	
Kherson	36	6.6	24	5.6	32	5.6	
Khmelnytskyi	11	5.9	14	6.1	8	3.8	
Cherkasy	34	8.2	19	4.3	34	7.1	
Chernivtsi	11	14.9	7	8.6	6	7.2	
Chernihiv	18	4.0	14	3.3	15	3.4	
City of Kyiv	109	7.1	92	5.6	94	6.3	

#### Table 16. People newly diagnosed with HIV at the age of 15-24 years

\* does not include children born to HIV-positive women, with indeterminate HIV status

## Table 17. Structure of HIV transmission modes among Ukrainian citizens (recorded cases)

		Number of people		Number of HIV-positive people registered			
HIV transmission mode	registered w	ith HCFs during rep	orting period	with HCFs as of the end of reporting period			
	2017	2018	2019	2017	2018	2019	
1 Total number of HIV-infected people, including:	15,680	15,749	16,357	136,378	137,176	135,902	
people who were infected with HIV through sex, of whom:	11,567	11,877	12,035	84,266	87,293	89,784	
men who had sex with men	492	506	468	2202	2635	3004	
people infected with HIV through heterosexual contacts	11,075	11,371	11,567	82,064	84,658	86,780	
people who were infected with HIV parenterally, of whom as a	4002	3776	4218	48,097	45,993	42,123	
result of:							
injecting drug use	3997	3773	4214	48,043	45,945	42,073	
transfusion of the blood products or components	0	0	1	11	11	11	
transplantation of donor organs, cells, tissues, biological fluids	0	0	0	0	0	0	
other medical manoeuvres	0	0	0	8	6	6	
transplantation of donor organs, cells, tissues, biological fluids	0	0	0	2	1	1	
other non-medical manipulations	5	3	3	33	30	32	
children born to HIV-positive women whose HIV status is	86	71	80	3197	3251	3368	
indeterminate							
HIV-positive people with indeterminate transmission mode	25	25	24	818	639	627	
2 children born to HIV-positive women whose HIV status is in	2514	2350	2068	4993	4885	4431	
confirmation stage							

**Table 18.** Officially recorded HIV infection cases among people who inject drugs, and their share of the total number of new HIV diagnoses

	19971		20	0082	20193		
Region	PWID	%	PWID	%	PWID	%	
Total Ukraine (excluding the AR of Crimea and City of Sebastopol)	6,966	84.3	6,558	36.9	4214	25.8	
Overall Ukraine (including the AR Crimea and Sebastopol)	7,448	83.6	7,009	37.0	-	-	
Vinnytsia	37	72.5	98	31.5	40	13.3	
Volyn	90	94.7	71	29.1	28	17.9	
Dnipropetrovsk	2042	93.1	1316	42.7	1452	39.9	
Donetsk	1,710	81.8	1295	32.4	296	19.7	
Zhytomyr	50	89.3	134	39.4	88	22.8	
Zakarpattia	21	7.05	3	7.1	5	5.4	
Zaporizhzhia	264	89.2	188	35.7	129	23.6	
Ivano-Frankivsk	18	90.0	51	30.7	15	11.5	
Kyiv	71	89.9	236	33.7	249	32.0	
Kirovohrad	16	76.2	53	22.2	136	23.4	
Luhansk	147	86.0	295	43.5	42	22.8	
Lviv	51	82.3	155	49.2	120	29.3	
Mykolaiv	268	85.6	454	38.2	83	12.3	
Odesa	769	67.3	431	27.7	383	16.5	
Poltava	213	93.0	152	40.2	59	16.2	
Rivne	13	68.4	102	47.2	30	19.1	
Sumy	19	82.6	55	29.9	23	13.8	
Ternopil	30	85.7	68	52.7	4	4.6	
Kharkiv	205	74.0	218	42.2	237	39.8	
Kherson	64	71.9	233	39.6	184	31.9	
Khmelnytskyi	40	81.6	77	38.3	24	11.4	
Cherkasy	188	82.5	134	37.5	97	20.3	
Chernivtsi	80	94.1	19	21.1	3	3.6	
Chernihiv	102	94.4	123	28.1	109	24.5	
City of Kyiv	458	90.7	597	47.5	378	25.4	

<sup>1</sup> The year when the highest number of new HIV diagnoses was reported during the whole period of HIV epidemiological surveillance in Ukraine

<sup>2</sup> The year with the shift in the dominant HIV transmission modes: from parenteral, when injecting drugs, to sexual, mainly through heterosexual contacts

<sup>3</sup> The indicator was calculated excluding children with indefinite HIV status born to HIV-positive women

Region		20	18		2019				
	HIV in	fected*	AIDS p	atients	HIV in	fected*	AIDS p	atients	
	number of	per 100,000							
	people	population	people	population	people	population	people	population	
Total Ukraine	137,176	356.4	46380	120.5	135,902	355.1	47341	123.7	
Vinnytsia	2723	173.6	1272	81.1	2879	185.3	1384	89.1	
Volyn	2179	210.4	777	75	2076	201.0	815	78.9	
Dnipropetrovsk	24961	773.3	8665	268.4	24504	765.0	8530	266.3	
Donetsk	12213	633.6	5662	293.8	11753	616.8	5784	303.5	
Zhytomyr	3373	273.8	1090	88.5	3385	277.2	1118	91.6	
Zakarpattia	585	46.6	258	20.6	653	52.1	284	22.6	
Zaporizhzhia	4359	253.1	1804	104.7	4409	258.6	1775	104.1	
Ivano-Frankivsk	1088	79.1	430	31.3	1107	80.8	443	32.3	
Kyiv	7310	418.1	2657	152	7590	430.7	2767	157.0	
Kirovohrad	2982	313.9	736	77.5	3339	355.5	856	91.1	
Luhansk	2086	301	555	80.1	2116	309.1	572	83.5	
Lviv	3645	145.1	1345	53.6	3743	149.5	1426	57.0	
Mykolaiv	8670	760.1	1785	156.5	8074	714.3	1763	156.0	
Odesa	20486	863.7	8304	350.1	19519	823.8	8590	362.6	
Poltava	3611	256.8	1146	81.5	3462	248.6	1017	73.0	
Rivne	1929	166.4	506	43.6	1969	170.3	565	48.9	
Sumy	1553	142.2	499	45.7	1602	148.4	508	47.1	
Ternopil	956	91.1	162	15.4	928	89.0	138	13.2	
Kharkiv	4347	162.3	1138	42.5	4748	178.5	1240	46.6	
Kherson	4153	397.2	1100	105.2	4449	429.4	1141	110.1	
Khmelnytskyi	2070	162.8	833	65.5	2126	168.5	887	70.3	
Cherkasy	3472	285.4	1208	99.3	3652	303.6	1276	106.1	
Chernivtsi	923	102.1	288	31.9	979	108.6	306	34.0	
Chernihiv	4078	403.1	1206	119.2	3824	383.5	1296	130.0	
City of Kyiv	13424	464	2954	102.1	13016	447.4	2860	98.3	

# **Table 19.** The number of HIV/AIDS cases and HIV incidence per 100,000 population, according to the data of registration of PLHIV with HCFs as of 01.01.2020, by regions

\* including children with indeterminate HIV status born to HIV -positive women

\*\* The indicator was calculated taking into account the population in the territories of the Donetsk and Luhansk regions controlled by the Ukrainian Government

Region including including	including
0-18 years 0-14 years 15-17 years AIDS Deaths 0-18 years 0-14 years 15-17 years	AIDS
	patients
Total Ukraine         2190         2159         31         60         50         7437         6765         672	864
Vinnytsia         71         69         2         1         1         152         147         5	26
Volyn         42         41         1         0         2         108         100         8	11
<b>Dnipropetrovsk</b> 348 347 1 7 4 1183 1033 150	152
<b>Donetsk 195</b> 193 2 7 9 <b>570</b> 515 55	79
<b>Zhytomyr</b> 64 64 0 1 3 176 164 12	26
Zakarpattia         20         19         1         0         1         43         41         2	3
<b>Zaporizhzhia 73 70 3 1 1 183 1</b> 68 <b>1</b> 5	21
Ivano-Frankivsk 31 31 0 0 0 72 67 5	11
<b>Kyiv 107</b> 105 2 5 2 <b>605</b> 578 27	91
Kirovohrad         71         0         4         3         285         257         28	32
Luhansk 21 21 0 1 0 75 61 14	7
Lviv 71 69 2 3 2 273 257 16	21
Mykolaiv         103         103         0         2         356         319         37	16
<b>Odesa 308</b> 302 6 22 5 <b>1353</b> 1248 105	120
Poltava 38 38 0 0 0 158 147 11	11
<b>Rivne</b> 33 33 0 0 3 98 97 1	9
Sumy 37 36 1 1 0 92 86 6	5
<b>Ternopil 13</b> 12 1 0 1 <b>39</b> 36 3	4
Kharkiv         74         73         1         1         3         235         220         15	18
Kherson         90         85         5         0         2         242         217         25	13
Khmelnytskyi         42         42         0         1         11         97         14	41
Cherkasy         60         58         2         0         0         186         163         23	22
Chernivtsi         19         19         1         0         131         103         28	54
Chernihiv         70         69         1         2         1         202         186         16	18
City of Kyiv         189         0         2         4         509         458         51	53

### Table 19.1 HIV infection among children aged 0–18 years, by region, Ukraine, 2019

	2017				2018		2019		
Region	absolute	per 100,000	growth rate,	absolute	per 100,000	growth rate,	absolute	per 100,000	growth rate,
	number	population	%	number	population	%	number	population	%
Total Ukraine	9308	24.1	5.8	8839	22.9	-5.0	7511	19.5	-14.8
Vinnytsia	161	10.1	-3.5	190	12.1	19.0	222	14.2	17.0
Volyn	144	13.9	12.7	129	12.4	-10.2	133	12.8	3.4
Dnipropetrovsk	2181	67.3	10.2	1713	53.1	-21.2	1443	44.8	-15.6
Donetsk*	992	50.8	14.1	993	51.4	1.2	930	48.8	-5.0
Zhytomyr	215	17.3	4.7	233	18.8	9.1	198	16.2	-14.1
Zakarpattia	47	3.7	-13.0	78	6.2	66.0	46	3.7	-41.0
Zaporizhzhia	381	21.8	-14.7	301	17.4	-20.3	213	12.4	-28.6
Ivano-Frankivsk	75	5.4	15.8	53	3.9	-29.2	34	2.5	-36.6
Kyiv	345	20	-25.8	380	21.9	9.4	362	20.6	-6.1
Kirovohrad	228	23.7	41.8	200	21	-11.5	227	23.9	13.7
Luhansk*	107	15.2	-18.8	117	16.9	11.1	94	13.7	-18.8
Lviv	245	9.7	41.1	299	11.9	22.2	248	9.8	-17.5
Mykolaiv	356	30.9	-18.8	365	31.9	3.3	294	25.9	-18.9
Odesa	1705	71.7	19.9	1770	74.6	4.0	1404	58.9	-21.0
Poltava	200	14	-3.9	142	10.1	-28.4	84	6.0	-40.9
Rivne	84	7.2	-15.9	101	8.7	20.3	83	7.2	-17.7
Sumy	92	8.3	1.4	107	9.8	17.3	92	8.5	-13.7
Ternopil	28	2.6	-39.9	42	4	51.0	37	3.5	-11.8
Kharkiv	276	10.2	2.4	266	9.9	-3.2	245	9.1	-7.8
Kherson	293	27.7	38.5	216	20.6	-25.7	194	18.6	-9.6
Khmelnytskyi	144	11.2	4.6	169	13.2	18.3	149	11.7	-11.1
Cherkasy	237	19.2	-4.4	209	17.1	-11.0	186	15.3	-10.4
Chernivtsi	30	3.3	-21.2	46	5.1	53.6	40	4.4	-13.4
Chernihiv	234	22.7	-0.9	183	18	-20.8	144	14.2	-21.0
City of Kyiv	508	17.7	-4.0	537	18.6	5.2	409	13.9	-25.3

#### Table 20. AIDS incidence in Ukraine

#### Table 21. Causes of death of HIV-positive people in Ukraine

	2017			2018		2019			
Causes of death	Total	Total People who received		Total	People wh	o received	Total	People who received	
	number of	A	RT	number of	AI	रा	number of	Al	RT
	deceased	number of	%	deceased	number of	%	deceased	number of	%
	people	people		people	people		people	people	
Total number of deceased people, including:	5500	2620	47.6	6761	3082	45.6	5943	3555	59.8
Deaths directly related to HIV infection	3364	1663	49.4	3548	1771	49.9	3097	1751	56.5
People diagnosed with clinical stage III of	66	27	40.9	100	36	36	120	56	46.7
HIV infection									
People diagnosed with clinical stage IV of	3298	1616	49	3448	1738	50.4	2977	1695	56.9
HIV infection									
Including deaths due to TB/HIV co-infection	1684	931	55.3	1743	932	53.5	1448	811	56.0
Causes not related to HIV infection	2105	978	46.5	2555	1273	49.8	2511	1622	64.6
tuberculosis	65	28	43.1	99	40	40.4	94	46	48.9
HBV and/or HCV, liver cirrhosis of viral	305	146	47.9	316	168	53.2	260	165	63.5
aetiology									
other conditions	1374	628	45.7	1752	837	47.8	1779	1146	64.4
other causes	361	176	48.7	388	228	58.8	378	265	70.1
cause of death unknown	31	9	29	658	38	5.8	335	182	54.3
Percentage of PWID among deceased		36.7			40.4			36.6	

		2017			2018			2019		
Region	absolute	per 100,000	growth rate,	absolute	per 100,000	growth rate,	absolute	per 100,000	growth rate,	
	number	population	%	number	population	%	number	population	%	
Total Ukraine	3298	8.5	1.8	3448	8.9	4.6	2977	7.7	-13.2	
Vinnytsia	43	2.7	-15.8	74	4.7	73.5	63	4.0	-14.5	
Volyn	63	6	14.1	56	5.4	-10.9	57	5.5	1.8	
Dnipropetrovsk	873	26.9	-13.2	864	26.7	-0.7	728	22.6	-15.3	
Donetsk*	342	8	-2.0	335	17.3	-1.0	269	14.1	-18.4	
Zhytomyr	91	7.3	3.0	91	7.4	0.7	82	6.7	-9.6	
Zakarpattia	15	1.2	48.9	11	0.9	-26.6	11	0.9	-2.8	
Zaporizhzhia	142	8.1	-0.9	150	8.7	6.6	120	7.0	-19.6	
Ivano-Frankivsk	28	2	-11.9	33	2.4	18.1	12	0.9	-63.6	
Kyiv	126	7.3	11.8	130	7.5	2.5	125	7.1	-5.4	
Kirovohrad	85	8.8	-18.1	118	12.3	40.0	106	11.1	-9.4	
Luhansk*	41	1.9	-1.9	55	7.9	36.3	51	7.4	-5.7	
Lviv	90	3.6	22.5	99	3.9	10.1	72	2.9	-26.9	
Mykolaiv	134	11.6	1.8	157	13.7	18.0	137	12.1	-12.0	
Odesa	455	19.1	36.1	503	21.1	10.7	442	18.6	-12.0	
Poltava	85	5.9	9.9	81	5.7	-3.9	76	5.4	-5.2	
Rivne	22	1.9	-27.2	30	2.6	36.4	22	1.9	-27.0	
Sumy	30	2.7	17.6	38	3.5	27.8	34	3.1	-10.7	
Ternopil	12	1.1	-19.3	9	0.9	-24.5	13	1.2	37.7	
Kharkiv	78	2.9	25.1	81	3	4.3	78	2.9	-3.2	
Kherson	76	7.2	2.5	58	5.5	-23.1	47	4.5	-18.0	
Khmelnytskyi	52	4	-8.4	50	3.9	-3.1	54	4.3	9.1	
Cherkasy	78	6.3	8.7	64	5.2	-17.2	54	4.5	-14.4	
Chernivtsi	22	2.4	21.0	20	2.2	-8.9	24	2.7	20.5	
Chernihiv	78	7.5	-11.7	81	7.9	5.1	72	7.1	-10.0	
City of Kyiv	237	8.1	17.8	260	8.9	9.2	228	7.7	-12.9	

#### Table 22. AIDS mortality rate in Ukraine

Region	Number of people registered with HCFs due to opioid use	Number of people enrolled in the OST program	Share of people registered with HCFs covered with OST services
Total Ukraine	278318	12411	4.5%
Vinnytsia	5596	445	8.0%
Dnipropetrovsk	2957	217	7.3%
Zhytomyr	51826	2192	4.2%
Ivano-Frankivsk	11081	493	4.4%
Luhansk	5076	400	7.9%
Mykolaiv	1547	44	2.8%
Poltava	14931	486	3.3%
Sumy	3240	365	11.3%
Volyn	10328	171	1.7%
Donetsk	12677	427	3.4%
Zakarpattia	10137	360	3.6%
Zaporizhzhia	3132	306	9.8%
Kyiv	12078	1026	8.5%
Kirovohrad	26305	552	2.1%
Lviv	6136	738	12.0%
Odesa	15597	573	3.7%
Rivne	5436	230	4.2%
Ternopil	4131	114	2.8%
Kharkiv	12730	438	3.4%
Kherson	5850	348	5.9%
Khmelnytskyi	6410	366	5.7%
Cherkasy	10235	506	4.9%
Chernivtsi	3982	105	2.6%
Chernihiv	6420	294	4.6%
City of Kyiv	30480	1215	4.0%

### **Table 23.** Total number of people receiving OST, by regions, Ukraine, 2019

							0.0	,	
Region	Coverage of HIV testing among pregnant women, %	HIV prevalence among pregnant women, %	Total number of HIV- positive pregnant women	Percentage of pregnant women who tested positive for HIV after 26 weeks of pregnancy, during or after labour (among new HIV diagnoses)	Percentage of HIV-positive pregnant who received ARVs/ART	Percentage of HIV-positive pregnant women who are continuing ART after delivery	Number of deliveries in HIV-positive women	Percentage of HIV- positive pregnant women brought to obstetric hospital prior to labour and delivery	Percentage of HIV- positive women who have given birth by caesarean section
Total Ukraine	99.3	0.72	2203	25.9	95.6	93.4	2083	52.3	27.2
Vinnytsia	98.5	0.57	70	20.0	98.5	98.5	67	37.3	13.4
Volyn	98.9	0.38	41	20.0	100.0	100.0	40	72.5	35.0
Dnipropetrovsk	98.4	1.27	346	32.6	93.4	94.3	331	46.8	22.7
Donetsk	99.0	1.97	222	24.7	97.4	90.7	193	50.3	25.4
Zhytomyr	100.0	0.61	62	13.3	100.0	100.0	62	82.3	12.9
Zakarpattia	98.1	0.14	18	33.3	94.1	88.2	17	29.4	29.4
Zaporizhzhia	98.7	0.66	81	25.0	97.0	94.0	67	46.3	37.3
Ivano-Frankivsk	99.7	0.19	23	25.0	89.3	89.3	28	78.6	35.7
Kyiv	98.8	0.53	84	20.0	100.0	93.6	78	74.4	30.8
Kirovohrad	100.0	1.05	68	76.9	92.6	91.2	68	8.8	23.5
Luhansk	99.2	0.81	31	14.3	95.8	95.8	24	79.2	25.0
Lviv	100.0	0.28	61	41.7	96.9	96.9	64	81.3	50.0
Mykolaiv	99.2	1.27	105	17.6	97.0	97.0	99	35.4	20.2
Odesa	99.7	1.43	306	37.6	96.3	90.5	294	42.9	27.6
Poltava	99.4	0.52	50	8.3	100.0	100.0	37	89.2	43.2
Rivne	99.9	0.27	35	20.0	96.9	96.9	32	62.5	37.5
Sumy	99.8	0.47	33	37.5	100.0	97.0	33	78.8	39.4
Ternopil	98.9	0.16	13	40.0	100.0	100.0	11	90.9	9.1
Kharkiv	99.5	0.48	84	15.8	98.6	98.6	73	78.1	28.8
Kherson	99.9	1.12	84	16.2	92.9	88.1	84	61.9	14.3
Khmelnytskyi	99.3	0.53	55	0.0	95.1	95.1	41	95.1	70.7
Cherkasy	99.8	0.97	78	15.4	94.9	94.9	59	64.4	25.4
Chernivtsi	99.3	0.23	19	13.3	94.4	94.4	18	33.3	16.7
Chernihiv	96.6	1.27	82	14.8	89.9	88.4	69	34.8	18.8
City of Kyiv	99.8	0.63	152	19.6	92.3	90.2	194	37.6	29.4

<b>Table 24.</b> Implementation indicators for the Mother-to-Child HIV	Transmission Prevention Program,	by regions,	Ukraine, 2	2019
--	----------------------------------	-------------	------------	------

**Table 25.** Results of the SEM among pregnant women, by regions,
 Ukraine, 2019

Region	Code 109.1 (p HIV for the f regardles	regnant women irst time during s of the gestati	n screened for g pregnancy, onal age)	Code 109.2	Code 109.3
	people	People who	tested positive	People who	People who
	HIV	abs. number	%	for HIV	for HIV
Total Ukraine	341383	792	0.23%	28	0
Vinnytsia	12652	24	0.19%	0	0
Volyn	11446	9	0.08%	1	0
Dnipropetrovsk	33148	100	0.30%	2	0
Donetsk	12176	62	0.51%	6	0
Zhytomyr	10415	29	0.28%	1	0
Zakarpattia	14961	11	0.07%	0	0
Zaporizhzhia	12712	18	0.14%	1	0
Ivano-Frankivsk	12300	9	0.07%	2	0
Kyiv	15973	48	0.30%	0	0
Kirovohrad	8048	26	0.32%	0	0
Luhansk	3431	8	0.23%	0	0
Lviv	22571	24	0.11%	0	0
Mykolaiv	8428	40	0.47%	3	0
Odesa	24772	94	0.38%	3	0
Poltava	9085	18	0.20%	5	0
Rivne	13766	11	0.08%	0	0
Sumy	7319	16	0.22%	0	0
Ternopil	8330	5	0.06%	0	0
Kharkiv	19649	38	0.19%	0	0
Kherson	8717	35	0.40%	2	0
Khmelnytskyi	11740	14	0.12%	0	0
Cherkasy	9054	25	0.28%	0	0
Chernivtsi	9948	12	0.12%	1	0
Chernihiv	7627	26	0.34%	1	0
City of Kyiv	33115	90	0.27%	0	0

### Table 26. Results of the SEM among pregnant women aged 15–24 years, by regions, Ukraine,

2	n	1	q
~	v	-	-

2015	0 1 400	Codes 100 1 1 100 1 2 (prospert							
Region	Codes 109.	L.1+109.1.2 (	pregnant	Ranking					
	women	ageu 15-24	years)						
	neonle	People w	ho tested						
	screened	positive	for HIV						
	for HIV	abs.	%						
		number							
Total Ukraine	78307	143	0.18%						
Vinnytsia	3400	4	0.12%	11					
Volyn	3207	3	0.09%	8					
Dnipropetrovsk	6902	18	0.26%	18					
Donetsk	1935	15	0.78%	25					
Zhytomyr	2686	0	0.00%	1					
Zakarpattia	3876	5	0.13%	12					
Zaporizhzhia	2979	2	0.07%	5					
Ivano-Frankivsk	4471	3	0.07%	4					
Kyiv	3710	7	0.19%	16					
Kirovohrad	1184	5	0.42%	22					
Luhansk	1109	1	0.09%	7					
Lviv	7963	4	0.05%	2					
Mykolaiv	2102	7	0.33%	20					
Odesa	4818	21	0.44%	23					
Poltava	2427	9	0.37%	21					
Rivne	1826	2	0.11%	9					
Sumy	1786	3	0.17%	14					
Ternopil	3,245	2	0.06%	3					
Kharkiv	4334	5	0.12%	10					
Kherson	2566	8	0.31%	19					
Khmelnytskyi	3452	3	0.09%	6					
Cherkasy	1617	3	0.19%	15					
Chernivtsi	3770	5	0.13%	13					
Chernihiv	848	4	0.47%	24					
City of Kyiv	2094	4	0.19%	17					

Region	Number of live births in HIV-infected women	Number of new perinatal HIV-infection cases per 100,000 live births	Percentage of children born to HIV-positive women who received ARVs for prevention	Percentage of children born to HIV-positive women that were covered by early diagnosis within the first 2 months after birth	Number of HIV-positive children under the age of 18 who are registered with HCFs and living in families (with their parents, relatives, or were adopted)
Total Ukraine	2086	10.5	97.7	87.8	2746
Vinnytsia	67	8.4	98.5	50.0	43
Volyn	41	0.0	97.6	100.0	38
Dnipropetrovsk	338	45.2	98.2	97.0	533
Donetsk	189	28.0	100.0	68.8	250
Zhytomyr	62	0.0	100.0	100.0	64
Zakarpattia	17	0.0	88.2	100.0	8
Zaporizhzhia	67	0.0	98.5	98.5	65
Ivano-Frankivsk	30	0.0	93.3	91.7	24
Kyiv	78	8.5	100.0	97.4	152
Kirovohrad	68	16.3	97.1	100.0	95
Luhansk	24	0.0	100.0	87.5	38
Lviv	65	4.6	100.0	100.0	66
Mykolaiv	99	38.2	99.0	91.6	164
Odesa	293	14.2	100.0	66.2	421
Poltava	37	0.0	100.0	85.2	60
Rivne	33	0.0	93.9	90.0	31
Sumy	34	15.5	100.0	82.4	28
Ternopil	11	0.0	100.0	100.0	9
Kharkiv	70	5.7	100.0	73.0	67
Kherson	84	27.0	97.6	96.3	102
Khmelnytskyi	42	0.0	95.2	97.6	44
Cherkasy	57	0.0	98.2	100.0	79
Chernivtsi	17	0.0	94.1	100.0	102
Chernihiv	67	33.0	97.0	95.5	89
City of Kyiv	196	7.0	89.3	100.0	174

**Table 27.** Implementation indicators for the Mother-to-Child HIV Transmission Prevention Program, by regions, Ukraine, 2019 (cont.)

 Table 28. Number of new HIV diagnoses established by PCR-based assays in children born to HIV-positive mothers (per 100,000 live births)

 Region
 2018
 2019

 Number of live
 Number of new HIV
 Indicator per 100,000

Region	Number of live births1	Number of new HIV diagnoses2	Indicator per 100,000 live births	Number of live births1	Number of new HIV diagnoses2	Indicator per 100,000 live births
Total Ukraine	318733	38	11.9	294148	31	10.5
Vinnytsia	12639	0	0.0	11842	1	8.4
Volyn	11398	0	0.0	10558	0	0.0
Dnipropetrovsk	24502	11	44.9	22117	10	45.2
Donetsk	11623	4	34.4	10722	3	28.0
Zhytomyr	10766	0	0.0	9691	0	0.0
Zakarpattia	13729	0	0.0	12845	0	0.0
Zaporizhzhia	12228	0	0.0	11317	0	0.0
Ivano-Frankivsk	12773	0	0.0	12225	0	0.0
Kyiv	12978	3	23.1	11710	1	8.5
Kirovohrad	6839	1	14.6	6136	1	16.3
Luhansk	3587	2	55.7	3212	0	0.0
Lviv	22862	0	0.0	21619	1	4.6
Mykolaiv	8970	2	22.3	7849	3	38.2
Odesa	22733	7	30.8	21143	3	14.2
Poltava	10210	2	19.6	9106	0	0.0
Rivne	13652	0	0.0	12499	0	0.0
Sumy	7108	0	0.0	6433	1	15.5
Ternopil	8468	0	0.0	7801	0	0.0
Kharkiv	19070	2	10.5	17563	1	5.7
Kherson	8143	1	12.3	7410	2	27.0
Khmelnytskyi	10753	1	9.3	9922	0	0.0
Cherkasy	8523	1	11.7	7580	0	0.0
Chernivtsi	8640	0	0.0	8216	0	0.0
Chernihiv	6792	1	14.7	6065	2	33.0
City of Kyiv	29747	0	0.0	28567	2	7.0

<sup>1</sup> Reference: reporting form No. 21 (annual) "Report on Health Care for Pregnant Women, Women in Labour and Parturient Women."

<sup>2</sup> Reference: reporting form No. 63 (annual) "Prevention of Mother-to-child Transmission of HIV"

Region	Cohort of c	children born in 2017 (PCF	R, ELISA, IB)	Children born in 2019 (early diagnoses by PCR-based assays)			
	Number of HIV-	RMTCT, %	Mean RMTCT 1, %	Indicator of PCR	Number of HIV-	RMTCT, %	
	positive children			coverage, %	positive children		
Total Ukraine	2571	3.3	3.6	94.1	31	1.6	
Vinnytsia	68	4.8	3.5	88.1	1	1.7	
Volyn	30	3.5	4.7	97.6	0	0.0	
Dnipropetrovsk	405	4.6	4.8	88.5	10	3.3	
Donetsk	219	3.3	3.7	93.7	3	1.7	
Zhytomyr	87	2.3	1.9	100.0	0	0.0	
Zakarpattia	20	0.0	10.0	88.2	0	0.0	
Zaporizhzhia	70	0.0	1.7	98.5	0	0.0	
Ivano-Frankivsk	19	0.0	0.0	80.0	0	0.0	
Kyiv	154	3.7	3.3	97.4	1	1.3	
Kirovohrad	88	3.7	5.2	100.0	1	1.5	
Luhansk	40	2.9	1.9	100.0	0	0.0	
Lviv	71	4.4	5.0	92.3	1	1.7	
Mykolaiv	142	2.1	3.0	96.0	3	3.2	
Odesa	345	4.8	4.4	94.9	3	1.1	
Poltava	63	5.4	2.4	78.4	0	0.0	
Rivne	46	0.0	1.4	90.9	0	0.0	
Sumy	35	0.0	0.0	100.0	1	2.9	
Ternopil	16	6.7	4.0	100.0	0	0.0	
Kharkiv	80	4.4	2.0	90.0	1	1.6	
Kherson	93	3.3	3.4	96.4	2	2.5	
Khmelnytskyi	54	2.2	2.5	97.6	0	0.0	
Cherkasy	83	1.2	1.7	98.2	0	0.0	
Chernivtsi	19	15.8	9.4	100.0	0	0.0	
Chernihiv	82	1.5	1.4	98.5	2	3.0	
City of Kyiv	242	1.1	3.8	97.4	2	1.1	

**Table 29.** Rate of mother-to-child HIV transmission (RMTCT) in Ukraine, according to the results of early and serological diagnosis, 2019

Mean RMTCT was calculated with the use of the rank aggregation technique, taking into account the number of children with established HIV status and HIV-positive children in 2014-2016 for each region and the country as a whole. This method is used for observations, which for a long time do not always make it possible to identify a clear trend in the dynamics of a certain phenomenon

Pagion	New HIV o	diagnoses		Children linkage to HIV care services as of 01.01.2020				
Region	HIV-infections*	AIDS	Children registered when	children with HIV-	infection diagnoses	Children diagnosed with		
			confirmed as HIV-negative	total number of children*	including AIDS patients	HIV, awaiting confirmation		
Total Ukraine	80	57	2068	3368	1,012	4431		
Vinnytsia	2	1	67	52	35	106		
Volyn	1	0	41	45	11	66		
Dnipropetrovsk	19	6	325	695	220	607		
Donetsk	4	8	189	301	94	290		
Zhytomyr	1	0	62	62	22	111		
Zakarpattia	0	0	19	10	3	33		
Zaporizhzhia	0	1	70	78	25	114		
Ivano-Frankivsk	0	0	30	24	9	48		
Kyiv	8	5	97	182	80	396		
Kirovohrad	2	3	68	116	24	169		
Luhansk	0	1	21	48	9	36		
Lviv	2	3	66	66	20	203		
Mykolaiv	3	0	99	251	26	188		
Odesa	10	22	289	556	164	884		
Poltava	3	0	35	54	9	93		
Rivne	1	0	32	31	9	66		
Sumy	2	0	33	27	4	61		
Ternopil	1	0	11	9	4	27		
Kharkiv	2	1	70	78	22	165		
Kherson	1	0	84	114	19	137		
Khmelnytskyi	0	1	42	53	47	67		
Cherkasy	1	0	57	100	20	101		
Chernivtsi	2	1	17	104	54	29		
Chernihiv	5	2	65	98	20	110		
City of Kyiv	10	2	179	214	62	324		

#### Table 30. Children born to HIV-infected women in health care facilities, 2019

\* excluding children with indeterminate HIV status born to HIV-positive women

Region		HCFs of N	IoH and NAMS of	Jkraine			Total (HCFs of		
/ Organization	State Budget	Global Fund	PEPFAR	ANTIAIDS Foundation	Total, MoH and NAMS of Ukraine	Global Fund	State Budget	Total, SPC of Ukraine	MoH, NAMS & SCESU)
Total Ukraine	77,375	19,999	12,378	49	109,801	2,233	1,012	3,245	113,046
Vinnytsia	1600	485	0	0	2085	28	55	83	2168
Volyn	1223	283	0	0	1506	25	22	47	1553
Dnipropetrovsk	13511	4114	2876	0	20501	376	190	566	21067
Donetsk	7711	1409	829	0	9949	149	67	216	10165
Zhytomyr	1760	548	0	0	2308	122	43	165	2473
Zakarpattia	449	39	0	0	488	3	2	5	493
Zaporizhzhia	2639	731	477	0	3847	103	65	168	4015
Ivano-Frankivsk	811	78	0	0	889	6	12	18	907
Kyiv	3537	1069	694	0	5300	193	66	259	5559
Kirovohrad	1661	338	519	0	2518	66	49	115	2633
Luhansk	1467	326	0	0	1793	12	4	16	1809
Lviv	1761	552	0	0	2313	83	44	127	2440
Mykolaiv	4573	960	834	0	6367	133	36	169	6536
Odesa	9841	2350	2486	0	14677	188	45	233	14910
Poltava	2031	452	315	47	2845	56	51	107	2952
Rivne	1102	256	0	0	1358	48	18	66	1424
Sumy	937	192	0	0	1129	36	32	68	1197
Ternopil	359	100	0	0	459	22	8	30	489
Kharkiv	2243	995	0	0	3238	232	57	289	3527
Kherson	2182	822	516	0	3520	188	36	224	3744
Khmelnytskyi	1209	405	0	0	1614	19	47	66	1680
Cherkasy	2037	605	585	0	3227	115	37	152	3379
Chernivtsi	515	145	0	0	660	5	4	9	669
Chernihiv	2183	457	589	0	3229	25	22	47	3276
City of Kyiv	7489	1536	1658	0	10683				10683
NCSH "Okhmatdyt"	246	12	0	2	260				260
HIEID of the NAMS of Ukraine	2298	740	0	0	3038				3038

**Table 31.** Total number of people on ART (by sources of funding) in Ukraine as of 01.01.2020

	Nu	mer of ART site	s	ART provision by type of organization as of 01.01.2020							
Region	as of	as of	change	AIDS o	entre	Central district	Sites on	the basis of sp	ecialized health care f	acilities	
	01.01.2019	01.01.2018		regional	city	hospitals, city	tuberculosis	dermato-	neuropsychiatry	narcology	
				hospitals	hospitals	hospitals,	clinics	venerolog	clinics	clinics	
						outpatient		y clinics			
						hospitals, territorial					
						medical association					
Total Ukraine	387	439	52	24	6	374	23	3	1	6	
Vinnytsia	6	9	3	1		8					
Volyn	7	7	0	1		6					
Dnipropetrovsk	43	49	6	1	2	40	3	1	1	1	
Donetsk	22	24	2	1	1	20	2				
Zhytomyr	5	5	0	1		4					
Zakarpattia	1	1	0	1							
Zaporizhzhia	18	27	9	1	1	22	3				
Ivano-Frankivsk	7	7	0	1		6					
Kyiv	32	29	-3	1		25	3				
Kirovohrad	10	11	1	1		9	1				
Luhansk	5	17	12	1		16					
Lviv	10	10	0	1		8	1				
Mykolaiv	15	27	12	1		24	2				
Odesa	53	39	-14	1	1	35	1	1			
Poltava	16	25	9	1		21	2			1	
Rivne	7	7	0	1		6					
Sumy	8	8	0	1		7					
Ternopil	6	6	0	1		5					
Kharkiv	11	11	0	1		8	2				
Kherson	23	25	2	1		22	1			1	
Khmelnytskyi	12	12	0	1		11					
Cherkasy	27	27	0	1		24	1			1	
Chernivtsi	1	1	0	1							
Chernihiv	12	25	13	1		24					
City of Kyiv	28	28	0		1	23	1	1		2	
National level HCFs	2	2	0								

### Table 32. Facilities and organizations providing ART

**Table 33.** Number of PLHIV on ART in the regions of Ukraine and ART coverage among patients linked to HIV care services as of 01.01.2020

		2018			2019				
Region	Number of PLHIV	PLHIV	on ART	ART	Number of PLHIV	PLHIV o	n ART	ART	
	registered with	total number	including	coverage,	registered with	total number of	including	coverage,	
	HCFs1	of people	children aged	%2	HCFs1	people	children aged	%2	
			0-17 years				0-17 years		
Total Ukraine	137,176	102432	2960	75%	135,902	113,046	2961	83%	
Vinnytsia	2723	1974	45	72%	2879	2085	45	72%	
Volyn	2179	1446	45	66%	2076	1506	41	73%	
Dnipropetrovsk	24961	18282	559	73%	24504	20501	555	84%	
Donetsk	12213	9404	272	77%	11753	9949	269	85%	
Zhytomyr	3373	2341	68	69%	3385	2308	66	68%	
Zakarpattia	585	429	10	73%	653	488	9	75%	
Zaporizhzhia	4359	3621	63	83%	4409	3847	65	87%	
Ivano-Frankivsk	1088	896	21	82%	1107	889	21	80%	
Kyiv	7310	5298	160	72%	7590	5300	159	70%	
Kirovohrad	2982	2317	97	78%	3339	2518	96	75%	
Luhansk	2086	1720	43	82%	2116	1793	39	85%	
Lviv	3645	2392	65	66%	3743	2313	67	62%	
Mykolaiv	8670	6200	164	72%	8074	6367	169	79%	
Odesa	20486	13227	428	65%	19519	14677	431	75%	
Poltava	3611	2850	62	79%	3462	2845	63	82%	
Rivne	1929	1352	28	70%	1969	1358	31	69%	
Sumy	1553	1062	29	68%	1602	1129	29	70%	
Ternopil	956	468	9	49%	928	459	11	49%	
Kharkiv	4347	3155	61	73%	4748	3238	65	68%	
Kherson	4153	3235	97	78%	4449	3520	101	79%	
Khmelnytskyi	2070	1492	45	72%	2126	1614	42	76%	
Cherkasy	3472	3032	86	87%	3652	3227	82	88%	
Chernivtsi	923	605	97	66%	979	660	98	67%	
Chernihiv	4078	2906	85	71%	3824	3229	84	84%	
City of Kyiv	13424	9543	183	71%	13016	10683	173	82%	
NCSH "Okhmatdyt"		249	138			260	147		
HIEID of the NAMS of Ukraine		2936	0			3038	0		
SCESU		2981	0			3,245	3		

<sup>1</sup> Excluding children with indefinite HIV status born to HIV-positive women

<sup>2</sup> s

Region	PLHIV on ART	First-l	line ART	Second-line ART		Third-line ART	
		number of	% of all patients	number of people	% of all patients	number of	% of all patients
		people	who receive ART		who receive ART	people	who receive ART
Total Ukraine	113,04	10782	95.4	492	4.4	29	0.3
	6	7	%	1	%	8	%
Vinnytsia	2085	1985	95%	100	5%	0	0.0%
Volyn	1506	1460	97%	46	3%	0	0.0%
Dnipropetrovsk	20501	19859	97%	633	3%	9	0.0%
Donetsk	9949	9597	96%	348	3%	4	0.0%
Zhytomyr	2308	2245	97%	63	3%	0	0.0%
Zakarpattia	488	476	98%	11	2%	1	0.2%
Zaporizhzhia	3847	3648	95%	196	5%	3	0.1%
Ivano-Frankivsk	889	845	95%	44	5%	0	0.0%
Kyiv	5300	5055	95%	242	5%	3	0.1%
Kirovohrad	2518	2493	99%	25	1%	0	0.0%
Luhansk	1793	1719	96%	74	4%	0	0.0%
Lviv	2313	2218	96%	95	4%	0	0.0%
Mykolaiv	6367	6175	97%	182	3%	10	0.2%
Odesa	14677	13956	95%	716	5%	5	0.0%
Poltava	2845	2709	95%	135	5%	1	0.0%
Rivne	1358	1278	94%	80	6%	0	0.0%
Sumy	1129	1070	95%	59	5%	0	0.0%
Ternopil	459	395	86%	64	14%	0	0.0%
Kharkiv	3238	3084	95%	154	5%	0	0.0%
Kherson	3520	3474	99%	46	1%	0	0.0%
Khmelnytskyi	1614	1535	95%	78	5%	1	0.1%
Cherkasy	3227	3087	96%	140	4%	0	0.0%
Chernivtsi	660	655	99%	4	1%	1	0.2%
Chernihiv	3229	3105	96%	122	4%	2	0.1%
City of Kyiv	10683	10047	94%	635	6%	1	0.0%
HCSH "Okhmatdyt"	260	233	90%	23	9%	4	1.5%
HIEID of the NAMS of	3038	2199	72%	586	19%	25	8.3%
Ukraine						3	
SCESU	3,245	3225	99%	20	1%	0	0.0%

#### **Table 34.** Number and percentage of PLHIV on ART as of 01.01.2020, by lines

Region	Total number of	VL 40–1000 copies/ml		VL <40–1000 copies/ml		Inefficacy of ART VL	
/ Organization	screened people	absolute number	%	absolute number	%	absolute	%
Total Ukraine	88,696	76,291	86.0%	7,036	7.9%	5,369	6.1%
Vinnytsia	1,327	1,176	88.6%	57	4.3%	94	7.1%
Volyn	1,185	948	80.0%	80	6.8%	157	13.2%
Dnipropetrovsk	14,949	12,775	85.5%	1,290	8.6%	884	5.9%
Donetsk	8,808	7,045	80.0%	890	10.1%	873	9.9%
Zhytomyr	2,206	1,769	80.2%	242	11.0%	195	8.8%
Zakarpattia	409	282	68.9%	86	21.0%	41	10.0%
Zaporizhzhia	3,057	2,663	87.1%	237	7.8%	157	5.1%
Ivano-Frankivsk	810	705	87.0%	62	7.7%	43	5.3%
Kirovohrad	1,903	1,486	78.1%	128	6.7%	289	15.2%
Kyiv	4,481	4,049	90.4%	276	6.2%	156	3.5%
Luhansk	1,413	1,208	85.5%	94	6.7%	111	7.9%
Lviv	1,728	1,424	82.4%	156	9.0%	148	8.6%
Mykolaiv	6,336	5,433	85.7%	446	7.0%	457	7.2%
Odesa	13,121	11,876	90.5%	1,049	8.0%	196	1.5%
Poltava	2,390	2,103	88.0%	130	5.4%	157	6.6%
Rivne	1,073	935	87.1%	59	5.5%	79	7.4%
Sumy	957	860	89.9%	46	4.8%	51	5.3%
Ternopil	548	395	72.1%	71	13.0%	82	15.0%
Kharkiv	2,271	1,866	82.2%	256	11.3%	149	6.6%
Kherson	2,725	2,393	87.8%	156	5.7%	176	6.5%
Khmelnytskyi	891	776	87.1%	53	5.9%	62	7.0%
Cherkasy	3,099	2,795	90.2%	171	5.5%	133	4.3%
Chernivtsi	545	449	82.4%	52	9.5%	44	8.1%
Chernihiv	2,735	2,389	87.3%	153	5.6%	193	7.1%
City of Kyiv	9,729	8,491	87.3%	796	8.2%	442	4.5%

**Table 35.** Virological efficacy data of ART in patients treated for 6 months or more as of 2019

## ANNEX 3

## **TABLE 1.** INDICATORS OF THE NATIONAL REPORT ON GLOBAL AIDS RESPONSE PROGRESS IN 2018-2019 (GAM)

No.	Indicator	Indicator description	2018	2019
	Estimates of people living with HIV <sup>1</sup>	Estimated number of PLHIV as of the end of reporting period	240,750	251,168
1.1	PLHIV who know their HIV status	Number of PLHIV who know their HIV status	169,433	169,787
	Achievement of the first 90 target	% of PLHIV who know their HIV status	70%	68%
1.2	People living with HIV who are on antiretroviral therapy	Number of PLHIV on ART	122,697	136,105
	Achievement of the second 90 target	% of PLHIV on ART from the number of people who know their HIV status	72%	80%
1.3	People living with HIV who have a suppressed viral load	Number of people living with HIV who have suppressed viral load	113,578	127,871
	Achievement of the third 90 target	% of PLHIV who suppressed viral load among those on ART	93%	94%
1.4	Late HIV diagnosis	Percentage and number of adults and children newly diagnosed with the initial CD4 cell count <200 cells/mm3 and <350 cells/mm3 during the reporting period	36.6%	35.1%
		Percentage and number of adults and children newly diagnosed with the initial CD4 cell count <200 cells/mm3 and <350 cells/mm3 during the reporting period	58.7%	59.0%
1.6	AIDS mortality <sup>2</sup>	Total number of people who have died from AIDS-related causes	3,448	2,977
		Total number of people who have died from AIDS-related causes per 100,000 population	8.1	7.7
1.7	HIV testing volume and positivity <sup>3</sup>	Percentage of HIV-positive results returned to people in the calendar year	-	3.1%
		Number of tests conducted where an HIV- positive result was returned to a person (positivity)	-	16,344
		Number of tests performed where results were received by a person (testing volume)	-	520,119
	Self-testing	Number of self-test kits purchased (not distributed or used) in a year by the national	17,000	20,950

 $<sup>^1\,</sup>$  Based on the results of forecasting using the Spectrum program

<sup>&</sup>lt;sup>2</sup> According to the reporting form No. 2-HIV/AIDS "Report on People with Conditions and Diseases Caused by the Human Immunodeficiency Virus (HIV), 2019" <sup>3</sup>Community-level HTS reporting: Data on facility-level testing are not provided due to the impossibility of disaggregating data in accordance with the definition of the indicator.

No.	Indicator	Indicator description	2018	2019
		government, including (but not limited to) donors		
		Number of individual self-test kits that were distributed in a year	523	25,540
2.1	Early infant diagnosis	Percentage of infants born to women living with HIV receiving a virological test for HIV within two months of birth	60.9%	82.1%
2.2	Mother-to-child transmission of HIV	Percentage of infants born to women living with HIV receiving a virological test for HIV within two months of birth	3.6%	3.32%
		Number of infants who received an HIV test within two months of birth during the reporting period. $^{\rm 4}$	1.64%	1.58%
2.3	Preventing the mother-to-child transmission of HIV	Percentage of pregnant women living with HIV who received antiretroviral medicine to reduce the risk of mother-to-child transmission of HIV	96.2%	95.6%
2.4	Syphilis among pregnant women	Percentage of women accessing antenatal care services who were tested for syphilis, tested positive for syphilis and treated	0.069%	0.15%
2.5	Congenital syphilis rate (live births and stillbirth)	Percentage of reported congenital syphilis cases (live births and stillbirth)	0.0003%	0.0003%
2.6	HIV testing among pregnant women	Percentage of pregnant women with known HIV status	99.5%	99.9%
3.1	HIV incidence <sup>5</sup>	Number of people newly infected with HIV in the reporting period per 1,000 uninfected population	-	0.2841
		A. Size estimations for SWs	86,600	-
	Size estimations for key populations	B. MSM	179,400	-
3.2		C. Size estimations for PWID	350,300	-
5.2		D. Size estimations for transgender people	-	-
		E. Prisoners <sup>6</sup>	-	52,863
		A. Percentage of sex workers living with $\ensuremath{HIV}$	_	-
3.3	HIV prevalence among key populations	B. Percentage of men who have sex with men who are living with HIV	-	-
		C. Percentage of people who inject drugs who are living with HIV	_	-
		D. Percentage of transgender people who are living with HIV	_	-
		E. Percentage of prisoners/inmates/detainees who are living with HIV <sup>7</sup>	8.0%	7.2%

 <sup>&</sup>lt;sup>4</sup>According to reporting form No.63 (annual) "Rate of the Mother-to-Child Transmission of HIV", 2019
 <sup>5</sup> Based on the results of forecasting using the Spectrum program
 <sup>6</sup> According to the State Criminal-Executive Service of Ukraine
 <sup>7</sup> According to the State Criminal-Executive Service of Ukraine

No.	Indicator	Indicator description	2018	2019
3.4	HIV testing among key populations	A. Percentage of sex workers who tested for HIV in the past 12 months or who know they are living with HIV	-	-
		B. Percentage of men who have sex with men who tested for HIV in the past 12 months or who know they are living with HIV	-	-
		C. Percentage of people who inject drugs who tested for HIV in the past 12 months or who know they are living with HIV	-	-
		D. Percentage of transgender people who tested for HIV in the past 12 months or who know they are living with HIV	-	-
3.5	Antiretroviral therapy coverage among PLHIV and key populations	A. Percentage of SWs living with HIV who received antiretroviral therapy in the past 12 months	_	-
		B. Percentage of MSM living with HIV who received antiretroviral therapy in the past 12 months	_	_
		C. Percentage of PWID living with HIV who received antiretroviral therapy in the past 12 months	-	-
		D. Percentage of TP living with HIV who received antiretroviral therapy in the past 12 months	-	-
		E. Percentage of prisoners living with HIV who received antiretroviral therapy in the past 12 months $^{8}$	82.9%	87.4%
	Condom use among key populations	A. Percentage of sex workers reporting using a condom with their most recent client	-	-
3.6		B. Percentage of MSM reporting using a condom the last time they had anal sex with a male partner	-	-
		C. Percentage of people who inject drugs reporting using a condom the last time they had sexual intercourse	-	-
		D. Percentage of transgender people reporting using a condom during their most recent sexual intercourse or anal sex	-	-
3.7	Coverage of HIV prevention programmes among key populations	A. Percent of sex workers who are reached with HIV prevention interventions designed for sex workers	46.0%	52.5%
		Number of sex workers reached with HIV prevention interventions designed for sex workers	39,832	45,446
		B. Percent of men who have sex with men who are reached with HIV prevention interventions designed for men who have sex with men	25.2%	31.2%

<sup>56</sup> According to the State Criminal-Executive Service of Ukraine

No.	Indicator	Indicator description	2018	2019
		Number of men who have sex with men reached with HIV prevention interventions designed for men who have sex with men	45,278	55,905
		C. Percent of people who inject drugs who are reached with HIV prevention interventions designed for people who inject drugs	58.3%	66.8%
		Number of people who inject drugs reached with HIV prevention interventions designed for people who inject drugs	204,291	233,905
		D. Percent of transgender people who are reached with HIV prevention interventions designed for transgender people	-	_
		Number of transgender people reached with HIV prevention interventions designed for transgender people	1,049	1,747
3.8	Safe injecting practices among people who inject drugs	Percentage of people who inject drugs reporting the use of sterile injecting equipment the last time they injected	-	_
3.9	Needles and syringes distributed per person who injects drugs	Number of needles and syringes distributed per person who injects drugs per year by needle and syringe programmes	57.2	53.3
	Coverage of opioid substitution therapy	Percentage of people who inject drugs receiving opioid substitution therapy (OST)	3.8%	4.5%
3.10		Number of people who inject drugs and are receiving opioid substitution therapy at a specified date	11,385	12,411
3.11	Active syphilis among sex workers	Percentage of sex workers with active syphilis	-	0.49% <sup>9</sup>
3.12	Active syphilis among men who have sex with men	Percentage of men who have sex with men with active syphilis	-	0.54%10
		Number of condoms distributed to prisoners	0	1,276,500
3.13	HIV prevention programmes in prisons	Number of people living with HIV among prisoners	3,860	3,824
		Number of prisoners who received ART	3,200	3,343
		Number of prisoners tested for HIV	48,314	54,025
3.14	Viral hepatitis among key populations	Prevalence of hepatitis and coinfection with HIV among PWID	-	-
		Prevalence of hepatitis C and coinfection with HIV among SWs	-	-
		Prevalence of hepatitis C and coinfection with HIV among MSM	-	-
		Prevalence of hepatitis C and coinfection with HIV among TP	-	-

107

 $^{\rm 9,\,58}$  According to program monitoring and prevention programs (SYREX database)

No.	Indicator	Indicator description	2018	2019
3.15	People who received pre-exposure prophylaxis	Number of people who received oral PrEP at least once during the reporting period	125	1,735
3.18	Condom use at last high-risk sex	The percent of respondents who say they used a condom the last time they had sex with a non- marital, non-cohabiting partner, of those who had sex with such a partner in the last 12 months.	-	-
3.19	Annual number of condoms distributed	Number of condoms distributed during the past 12 months	-	10,287,03 6 <sup>11</sup>
4.1	Discriminatory attitudes towards people living with HIV	Percentage of women and men aged 15-49 who report discriminatory attitudes towards people living with HIV	-	-
4.2	Avoidance of health care by key populations because of stigma and discrimination	A. Number of sex workers who reported having avoided seeking health care because of stigma and discrimination	-	-
		B. Number of MSM who reported having avoided seeking health care because of stigma and discrimination	-	-
		C. Number of PWID who reported having avoided seeking health care because of stigma and discrimination	-	-
		D. Number of TP who reported having avoided seeking health care because of stigma and discrimination	-	-
4.3	Prevalence of recent intimate partner violence	Proportion of ever-married or partnered women aged 15-49 who experienced physical or sexual violence from a male intimate partner in the past 12 months	-	-
4.4	Experience of HIV- related stigma and discrimination in the health care setting	Percentage of people living with HIV who report experience of stigma and discrimination in the past 12 months	-	_
5.1	Young People: Knowledge about HIV prevention	Percentage of women and men 15-24 years old who correctly identify both ways of preventing the sexual transmission of HIV and reject major misconceptions about HIV transmission	-	18.9%
5.2	Demand for family planning satisfied by modern methods	Percentage of women of reproductive age (15- 49 years old) who have their demand for family planning satisfied with modern methods	_	_
8.1	Approved and executed public		-	-

 $^{11}\ensuremath{\operatorname{According}}$  to program monitoring and prevention programs (SYREX database)
## ANNEXES

No.	Indicator	Indicator description	2018	2019
	earmarked HIV budgets			
8.2	Volume and prices of antiretrovirals per regimen		_	yes
8.3	HIV expenditure by categories and funding sources		-	-
10.1	Co-managing TB and HIV treatment	Number of HIV-positive new and relapse TB patients started on TB treatment during the reporting period who were already on antiretroviral therapy or started on antiretroviral therapy during TB treatment within the reporting year	4,806	4,860
10.2	People living with HIV with active TB disease	Total number of people living with HIV with active tuberculosis (TB) expressed as a percentage of those who are newly enrolled in HIV treatment during the reporting period.	22.8%	20.3%
10.3	People living with HIV who started TB preventive therapy	Total number of people living with HIV currently enrolled in HIV treatment who started treatment for latent TB infection during the reporting period	60.6%	55.8%
10.4	Men with urethral discharge	Number of men reported with urethral discharge during the reporting period	0.002%	0.001%
10.5	Gonorrhoea among men	Rate of laboratory-diagnosed gonorrhoea among men in countries with laboratory capacity for diagnosis	0.016%	0.013%
10.6	Hepatitis C testing	Proportion of people starting antiretroviral therapy who were tested for hepatitis C virus (HCV)	-	-
10.7	People coinfected with HIV and HCV starting HCV treatment	Proportion of people coinfected with HIV and HCV starting HCV treatment	7.7%	4.4%
10.8	Cervical cancer screening among women living with HIV	Proportion of women living with HIV who have ever been screened for cervical cancer using any of the following methods: VIA, Pap smear or human papillomavirus (HPV) test.	-	-