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List of abbreviations

AIDS	**Acquired immunodeficiency syndrome**
ART	Antiretroviral therapy
CDC	Centers for Disease Control and Prevention
CO	Charitable organization
DBS	Dried blood spot
ECDC	European Centre for Disease Prevention and Control
EQA	External quality assessment
EUCA	Eastern Europe and Central Asia
Fast Track	UNAIDS Fast-Track strategy to end the AIDS epidemic by 2030
GAM	Global AIDS monitoring
GF	Global Fund to Fight AIDS, Tuberculosis and Malaria
HCFs	Healthcare facilities
HIV	Human Immunodeficiency virus
HIV CBS	Case-based surveillance of HIV infection
HTS	HIV testing services
IBBS	Integrated biobehavioural survey
ICF	International charitable fund
IMs	Instrumental methods (of diagnosis)
KPs	Key populations at increased risk of HIV
M&E	Monitoring and evaluation
MIS	Medical information system
MSM	Men who have sex with men
MTCT rate	Rate of mother-to-child transmission of HIV
NGO	Non-governmental organization
PCR	Polymerase chain reaction
PEPFAR	US President's Emergency Plan for AIDS Relief
PHC	Primary health care
PHC of the MOH of Ukraine	Public Health Center of the Ministry of Health of Ukraine State Institution
PLHIV	People living with HIV
PMTCT	Prevention of mother-to-child transmission of HIV
PrEP	Pre-exposure prophylaxis
PWID	People who inject drugs
RT	Rapid test
SCES	State Criminal-Executive Service of Ukraine
SEM	Seroepidemiological monitoring
SMT	Substitution maintenance therapy
SSD IS	Information system for socially significant diseases
SSSU	State Statistics Service of Ukraine
STIs	Sexually transmitted infections
SWs	Sex workers
TB	Tuberculosis
TP	Transgender people
UN	United Nations
UNAIDS	Joint United Nations Programme on HIV/AIDS
UNAIDS	Joint United Nations Programme on HIV/AIDS
UNICEF	United Nations Children's Fund
VH	Viral hepatitis
VL	Viral load
WHO	World Health Organization

Section I. HIV GLOBAL EPIDEMIC

Overview of relevant publications[1,2,3,4]

In its recent *In Danger* Report, the Joint United Nations Programme on HIV/AIDS (hereinafter — UNAIDS) warns that COVID-19 pandemic and other global crises slowed down the progress in countering the HIV epidemic and led to a decrease in the volume of resources, which subjected millions of lives to the risk of HIV epidemic and other socially significant diseases. As of early 2022, the number of people living with HIV (hereinafter — PLHIV) reached 38.4 million, of which 75% were receiving antiretroviral therapy (ART). 5.9 million PLHIV know their HIV status. The progress towards the achievement of Fast Track 95-95-95 goals at the global level was 85-88-92.

38.4 million	**85%**	**28.7 million**
people living with HIV according to global estimates	[75–97%] of PLHIV know their HIV status in 2021	PLHIV receive antiretroviral therapy

Key facts and trends

- In 2021, the number of new HIV cases globally was 1.5 million, which is 32% less than in 2010, but significantly more than defined by the consolidated targets for 2025 (370,000 persons) and 2030 (335,000 persons) respectively;
- The number of new HIV cases increased in most regions, namely in Eastern Europe and Central Asia, Latin America, Asia-Pacific Region, Middle East and Northern Africa;
- Every day, 4,000 persons acquire HIV infection, of which 1,100 young people aged 15–24 and 49% of women and girls;
- Key populations at increased risk of HIV (hereinafter — KPs) and their sexual partners account for 70% of new HIV cases in the world. UNAIDS views men who have sex with men (hereinafter — MSM), sex workers (hereinafter — SWs) and their clients, transgender people (hereinafter — TP) and people who inject drugs (hereinafter — PWID) as the main KPs which are particularly vulnerable to HIV;
- In 2021, the number of AIDS-related deaths was 650,000, which shows 68% decrease compared to the peak indicator of 2004;
- 10 million PLHIV still have no access to treatment. 2021 witnessed the smallest increase in the number of people receiving ART since 2009 — only by 1.47 million people.

*For more data, see **Table 1.1** Global data on HIV/AIDS in 2021 according to UNAIDS estimates (**Annex 1**).*

[1] https://www.unaids.org/en/resources/documents/2022/UNAIDS_FactSheet
[2] https://www.unaids.org/sites/default/files/media_asset/2022-global-aids-update_en.pdf
[3] https://www.who.int/publications/i/item/9789240053779
[4] https://www.ecdc.europa.eu/sites/default/files/documents/2021-Annual_HIV_Report_0.pdf

HIV epidemic in the WHO European Region

The European Centre for Disease Prevention and Control (hereinafter — ECDC) and the World Health Organization (hereinafter — WHO) Regional Office for Europe are conducting intensified surveillance of HIV/AIDS cases in 53 countries of the European Region of the WHO (hereinafter — the Region)[5].

In the last 30 years, HIV infection was officially registered in 2.2 million people in the Region. In 2020, 46 of 53 countries of the Region reported 104,765 new HIV cases, of which 81% were registered in the East, 15% in the West and 4% in the Centre of the Region (**Table 1**). The significant decrease (by 24%) of the number of detected HIV cases within the 2019–2020 period was caused by the decrease in the volume of HIV testing services during the COVID-19 pandemic.

The highest numbers of newly diagnosed cases of HIV and AIDS in the Region are observed in eastern countries, namely in the Russian Federation, Ukraine, Kazakhstan, Moldova and Belarus.

Table 1: Epidemiological characteristics of newly diagnosed HIV and AIDS cases registered in the WHO European Region, 2020

Indicators	WHO Region	West	Centre	East
HIV cases				
Number of newly diagnosed HIV cases	104,765	15,782	4,427	**84,556**
Number of HIV cases per 100,000 population	11.8	3.7	2.3	**32.6**
Percentage of cases within the age group of 15–24 (%)	5.4	9.5	15.0	**4.2**
Percentage of cases within the age group of 50 and older (%)	14.4	22.9	13.8	**12.9**
Men to women ratio	1.9	3.0	5.3	**1.6**
Modes of transmission, %				
Sexual contacts between men	9.4	39.2	28.0	**2.9**
Heterosexual transmission (men)	29.7	14.5	19.2	**33.1**
Heterosexual transmission (women)	27.9	16.9	8.1	**31.0**
Injecting drug use	22.4	3.3	2.2	**27.0**
Mother-to-child transmission	0.4	0.6	0.6	**0.4**
Unknown	10.0	25.0	41.9	**5.6**
AIDS and late diagnosis of HIV infection				
Percentage of HIV cases with CD4 count < 350 cells/mm^3 (%)	36.1	51.1	45.6	**34.4**
Number of new AIDS cases	7,721	1,549	467	**5,705**
New AIDS cases per 100,000 population	1.2	0.5	0.2	**5.0**

*For more data, see Table 1.2 Number of new cases of HIV, AIDS and AIDS-related deaths in the countries of the eastern part of the WHO European Region in 2020 (**Annex 1**).*

[5] Geographical zones of the European Region of the WHO (53 countries): **West:** Andorra, Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Israel, Italy, Luxembourg, Malta, Monaco, Netherlands, Norway, Portugal, San Marino, Spain, Sweden, Switzerland, United Kingdom. **Centre:** Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Czech Republic, Hungary, North Macedonia, Montenegro, Poland, Romania, Serbia, Slovakia, Slovenia, Turkey. **East:** Armenia, Azerbaijan, Belarus, Estonia, Georgia, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Moldova, Russian Federation, Tajikistan, Turkmenistan, Ukraine, Uzbekistan.

Key strategic and operational goals for countering HIV epidemic as a threat to public health

If the global trends in development of the HIV epidemic remain unchanged, 1.2 million people will be infected with HIV infection in 2025, which is three times more than the target set for 2025 (370,000 new infection cases). To eliminate the gaps in the area of HIV/AIDS control by 2030, it is necessary to concentrate the efforts in the following areas:

- Giving new momentum to HIV infection primary prevention. The countries should give greater political and financial priority to HIV prevention and move from segmental projects to large-scale actions using combined prophylaxis, new prophylaxis means, such as long-acting injectable pre-exposure prophylaxis drugs, as well as to eliminating the inequality between different populations in terms of access to HIV infection primary prevention and gaps in the cascade of services related to vertical transmission of HIV (from HIV-positive mother to child);
- Upholding human rights and implementing gender equality. Repealing discriminatory laws and policies is the key to effective response to HIV epidemic. It is of paramount importance to make women's and girls' rights, including the right to sexual and reproductive health, a priority in countering HIV infection and AIDS;
- Support and efficient funding of community-based response actions. Involving the community in providing comprehensive services is crucial to reduce the number of new HIV cases and to slow down the increase in the number of PLHIV. That will also help to reduce inequality and facilitate more effective and resilient response to challenges posed by HIV epidemic;
- Providing sufficient and sustainable funding. Nowadays, the success of programmes aimed at ending the HIV epidemic largely depends on the unprecedentedly high level of international aid. Low- and middle-income countries need an increase in the volume of domestic resources and international donor investment;
- Solving the issue of inequality in terms of access to HIV-related prophylaxis, testing and treatment for some populations. Countries and communities face inequality which slows down the progress in countering HIV/AIDS. Stakeholders should use more detailed data of better quality in order to bridge the gap in access to HIV-related services between different populations, including key and vulnerable HIV populations.

Section II. ACHIEVING THE 95-95-95 TARGETS

The updated UNAIDS 2025 AIDS Targets are aimed at ensuring that 95% of people living with HIV know their HIV status, 95% of those who know their status initiate treatment and 95% of those receiving treatment reach an undetectable VL level (below 1,000 RNA copies/ml). In the last two years and a half, the overlap between AIDS and COVID-19 epidemics, as well as economic and humanitarian crises in many countries, posed a threat to global efforts aimed at countering HIV. COVID-19 and other problems disrupted the work of healthcare services in many countries. However, in spite of all the challenges, Ukraine continues its steady progress towards achieving the abovementioned goals.

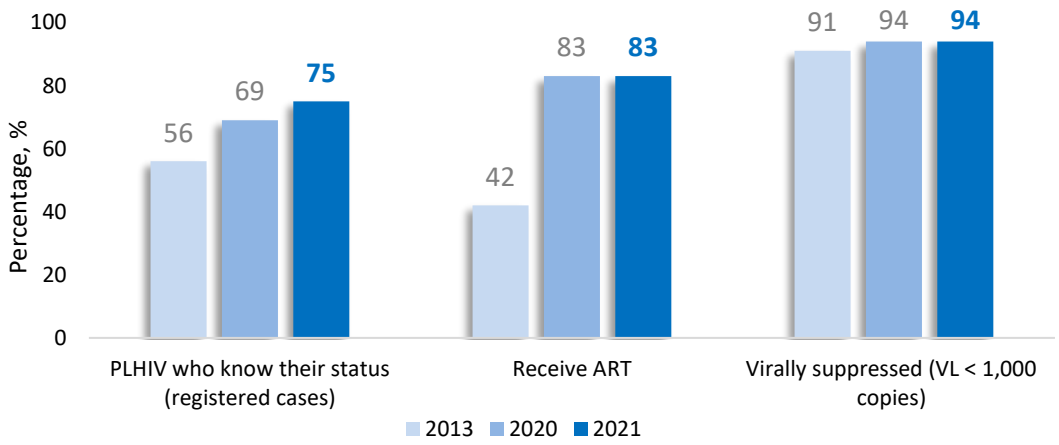
2.1. HIV treatment cascade in Ukraine

Similarly to the global practice, in order to measure its progress towards ending HIV epidemic, Ukraine uses a continuous cascade of care providing for evaluation of consecutive stages of HIV-related care, where the estimated number of people living with HIV (hereinafter — PLHIV) expressed as 100% is used as a starting point for consistent analysis[6].

244,877	**183,929**	**152,226**
number of PLHIV as of the beginning of 2022	PLHIV linked to care (registered)	PLHIV receiving antiretroviral therapy

The cascade below (**Fig. 1**) shows the effect of the complex impact of national strategies compared to 2013, which were primarily aimed at increasing the percentage of PLHIV with established diagnosis, improving linkage to care after HIV infection diagnosis, expanding ART coverage and ensuring its effectiveness, particularly in the context of the negative impact of COVID-19 pandemic.

Figure 1: HIV treatment and diagnosis cascade in Ukraine (2013, 2020, 2021)[7]



[6] https://phc.org.ua/kontrol-zakhvoryuvan/vilsnid/monitoring-i-ocinyuvannya

[7] Including data from the temporarily occupied territories of the Autonomous Republic of Crimea, Sevastopol city and temporarily non-government controlled territories of Donetsk and Luhansk oblasts.

HIV infection in Ukraine

At the 2014 International AIDS Conference in Melbourne, UNAIDS presented the 90-90-90 and 95-95-95 targets to accelerate efforts aimed at ending AIDS epidemic by 2030, which were approved by the UN.

Ukraine, which had significant gaps on its way to ending HIV/AIDS epidemic as of the beginning of 2014, formulated clear strategic goals and concentrated its national efforts in accordance with the global initiative. Among the key issues that the country had to solve was its poor performance regarding ART coverage of PLHIV and a low percentage of PLHIV linked to care. In 2013, only 56% of PLHIV knew their HIV status (and, consequently, were officially registered), and only 42% of them received ART.

As of the end of 2021, in spite of the burden of problems caused by the negative impact of COVID-19 pandemic, Ukraine was still able to demonstrate considerable progress as compared to 2013 and increase the number of PLHIV who know their HIV status to 75%. At the same time, the ART coverage rate doubled and reached 83%. In particular:

75%		**48,600**
of the estimated number of PLHIV in Ukraine know their status	The number of registered HIV cases in Ukraine (people with known HIV-positive status) shows a steady rise. Consequently, the number of PLHIV who either do not know of their HIV status or are not linked to care decreases annually.	persons with HIV infection are still to be detected and linked to care to reach the target of 95% of PLHIV knowing of their status
83%		**22,600**
of PLHIV who know their status and are linked to care receive ART	The result at this stage of PLHIV care cascade demonstrates the most significant progress Ukraine made in the context of implementation of the test-and-treat strategy. The number of PLHIV knowing their HIV-positive status and receiving treatment has doubled since 2013.	PLHIV should initiate ART to achieve the goal of ensuring 95% treatment coverage for people under follow-up as of 01.01.2022
94%		**2,000**
of PLHIV receiving ART reached an undetectable VL level	The result indicates a high level of adherence to treatment and a lower risk of HIV infection transmission. Most PLHIV receiving treatment reached a VL level < 1,000 RNA copies/ml	PLHIV receiving ART should achieve viral suppression as of 01.01.2022

For more details, *see The National Global AIDS Response Progress Report, 2017–2021 (GAM) in Annex 3. For regional indicators, see the PHC web-resource "HIV Monitoring in Ukraine and Regions" available at: https://npsi.phc.org.ua/HIV_Monitoring?indicator=116&tab=infographics*

2.2. Epidemic forecast and evaluation of the number of PLHIV in Ukraine

The projected trends in the development of the HIV epidemic reflect the global ones, particularly those related to improved life expectancy of patients receiving ART, expected stabilisation of the number of people living with HIV, decreased morbidity rates and increased number of patients in need of ART prescription[8].

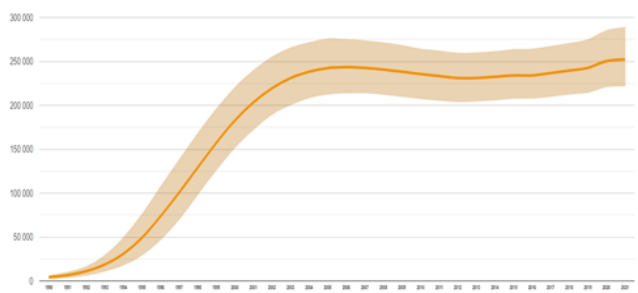
Based on all relevant data (epidemiological, statistical, testing data, etc.) and using Spectrum programme (version 6.19b2), the results of the new estimation of HIV/AIDS situation in Ukraine as of the end of 2021 were obtained, as well as a forecast of the situation for the period until 2025 (**Table 1.3; Annex 1**) [9].

According to the results of the most recent modelling, the estimated number of PLHIV in Ukraine as of the end of 2021 was 245,000 persons [215,000–281,000, including 200,000 persons in territories controlled by Ukraine].

245,000 persons — **Estimated number of PLHIV**

A slow **rise of the estimated number of PLHIV** up to 252,000 by the end of 2025 is expected within the forecast period, which is primarily due to improved PLHIV life expectancy. The HIV prevalence level is 0.66% [0.58–0.76] in adults aged 15 and older, and 0.94% [0.82–1.08] in persons aged 15–49.

Figure 2: Number of people living with HIV in Ukraine (modelling)



The total number of adult PLHIV reached its peak in 2006 and, after a minor decrease, has been rising since 2013 (**Fig. 2**). Since the beginning of the epidemic, the number of men living with HIV has been higher than of women, but in recent years the men to women ratio was close to 1. The extension of prevention programmes and ART coverage in Ukraine is followed by drastic changes in the age structure of PLHIV. Every 8–10 years the median age moved to an older age group. As of the end of 2021, almost a half of all PLHIV were over 40, and by the end of 2025, a half of all PLHIV will be over 45.

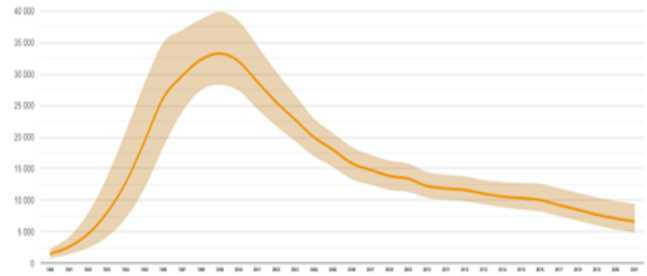
Same as before, the targeted interventions aimed at establishing effective control of the HIV epidemic in Ukraine in the current and forecast period should be more powerful and aimed at suppressing incidence. After 2020, ***the number of new HIV cases*** will continue its rapid decline. This trend is caused by gradual (though much slower than scheduled) progress towards 90% ART coverage in 2025.

6,700 persons — **Infected with HIV in 2021**

[8] For more details, see: https://npsi.phc.org.ua/HIV_Monitoring?indicator=100&tab=description

[9] https://phc.org.ua/kontrol-zakhvoryuvan/vilsnid/monitoring-i-ocinyuvannya

Figure 3: Annual number of new HIV cases in Ukraine (modelling)



The highest number of new infection cases was registered in 1999, amounting to 33,700 persons. After that, the number of infection cases has been falling and may reach the level of 5,700 by 2025 (**Fig. 3**). Number of new HIV cases decreased and amounted to 6,700 persons [4,800–9,500 in the age group of 15 and older] in 2021].

The men to women ratio has been practically the same since 2001, fluctuating within the range of 1.16–1.2, and is expected to remain unchanged until the end of the forecast period. The age structure of new HIV cases has changed drastically. While incidence was the highest in the age groups of 15 to 29 at the beginning of the epidemic, later on, the epidemic was practically stopped in persons aged 15–19 and significantly limited in persons aged 20–24. A slight downward trend has been observed in persons over 24 since 2017.

The programme for prevention of mother-to-child transmission of HIV (hereinafter — PMTCT) primarily aimed at ***preventing new cases of infection in children*** has been one of the most successful programmes implemented within the framework of HIV control actions in Ukraine. Over the 20 years since the beginning of its full-scale implementation in Ukraine, 14,800 cases of child infection through vertical HIV transmission and consequently 9,000 AIDS-related deaths were prevented.

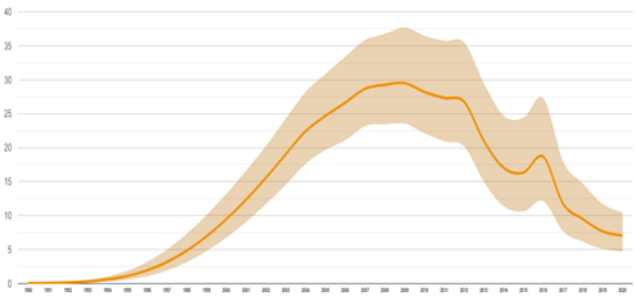
As of the end of 2021, slightly above two thirds of HIV cases were registered in KPs, with an upward trend in the proportion of general public for the period until 2025. Within the forecast period, a vast majority of new infection cases is expected to be directly or indirectly caused by parenteral HIV transmission through injecting drug use, although the number of cases is still expected to decline. The MSM group will be the only KP where the number of new HIV cases is expected to rise.

2,700 persons

Died of AIDS in 2021

AIDS-related mortality rate *is one of the indicators of impact where Ukraine shows the most positive dynamics.* After reaching its peak in 2008 (15,200 cases), the annual number of AIDS-related deaths has fallen by 5.4 times. The estimated number of AIDS-related deaths has been decreasing dynamically since 2010 and amounted to approximately 2,700 cases [2,000–3,600] in 2021. Over the next 4 years, the number of deaths is expected to decline and reach 1,900 in 2025 (**Fig. 4**).

Figure 4: Annual number of AIDS-related deaths in Ukraine (modelling)



By the end of 2025, one third of AIDS-related deaths is going be limited to the age group of 50 and older, together with a steep decline in the number of deaths in persons aged 30–39. The data demonstrate an increase in the life expectancy of HIV-positive people due to the extension of the ART programme. The general estimated number of persons in need of ART is going to remain stable and high with a very slow

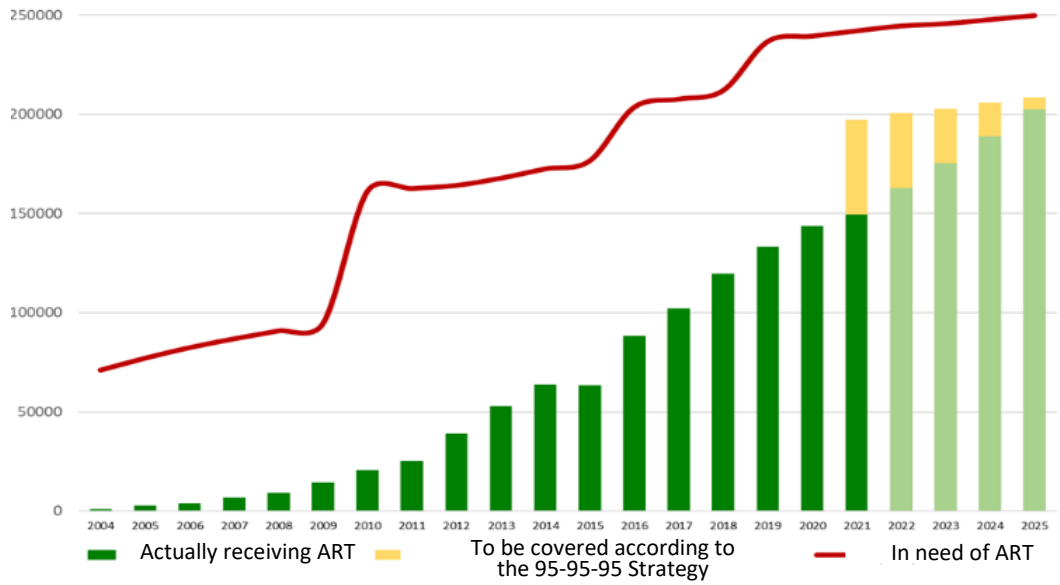
upward trend, first and foremost, due to the slower development of the disease, improved life expectancy and lower mortality rate in HIV-positive persons.

ART coverage of PLHIV is one of the key factors of impact on the key epidemiological indicators. It is a powerful tool in the arsenal of HIV/AIDS countering actions helping to stop the transmission of the virus and control the epidemic. As of the end of 2021, approximately 152,000 PLHIV in Ukraine received ART, which resulted in improved life quality and slower viral transmission rates, as well as in a drastic fall in AIDS-related mortality.

47,800 people **Do not receive ART**

Despite the country's impressive progress in providing ART to every person in need of it, the 2020 UNAIDS targets were not achieved. In 2021, The ART coverage in relation to the estimated number of PLHIV was 62%, meaning it lacked 47,800 persons in absolute numbers to reach the targets of the 95-95-95 strategy (**Fig. 5**).

Figure 5: Results of the forecast of ART coverage of HIV-positive adults until 2025



In recent years, the ART coverage rate in persons under follow-up (83%) rose significantly due to more active linkage of patients to care. However, the increase was not followed by a significant growth of the follow-up group, which explains the relatively low ART coverage to estimated PLHIV number ratio (62%). The further growth of the number of PLHIV receiving ART and, as a consequence, reaching the UNAIDS strategy targets is directly linked to increasing the volume of HIV testing services (hereinafter — HTS) in order to detect as many PLHIV as possible.

Section III. OVERVIEW OF THE EPIDEMIOLOGY[10]

15,360		**40.6**
citizens of Ukraine newly diagnosed with HIV infection were linked to care	The annual number of newly registered HIV cases in Ukraine after 2019 has shown a moderate downward trend in terms of detection and registration	HIV cases per 100,000 population — HIV prevalence according to the latest official registration data
90.8%		**1/3**
of HIV-positive people diagnosed with HIV infection (SEM) were linked to care	Despite significant progress in linkage of HIV-positive persons to care (the current rate is the highest during the whole period of observation), the detection timeliness has worsened.	PLHIV who were linked to care for the first time had overt immunosuppression (CD4 count < 200 cells/µl)
61%		**81%**
of PLHIV linked to care were infected through sexual contacts	Risky sexual behaviours remain the most significant risk factor for HIV infection in general public. Most people newly diagnosed with HIV are persons of working age.	of PLHIV linked to care belonged to the age group of 25–49
150,005		**397.5**
PLHIV were under follow-up at HCFs as of the end of 2021	The increase in the number of PLHIV under follow-up is a cumulative result of effective detection and linkage to care of people infected with HIV.	per 100,000 population — HIV infection prevalence in accordance with registration data
1,928		**5.1**
AIDS-related death were officially registered by HCFs performing follow-up of PLHIV	The number of AIDS-related deaths declines annually, which is primarily a result of timely diagnosis and accessible treatment of HIV infection/AIDS.	AIDS-related deaths per 100,000 population — mortality rate according to the HCFs' data

[10] The information presented in this section **excludes** children born to HIV-positive mothers whose HIV status is not established; it also **does not include** the statistical data of the temporarily occupied territories of the Autonomous Republic of Crimea, Sevastopol city and temporarily non-government controlled territories of Donetsk and Luhansk oblasts; **intensive indicators** for Donetsk and Luhansk oblasts are calculated based on the number of population in territories controlled by the Government of Ukraine.

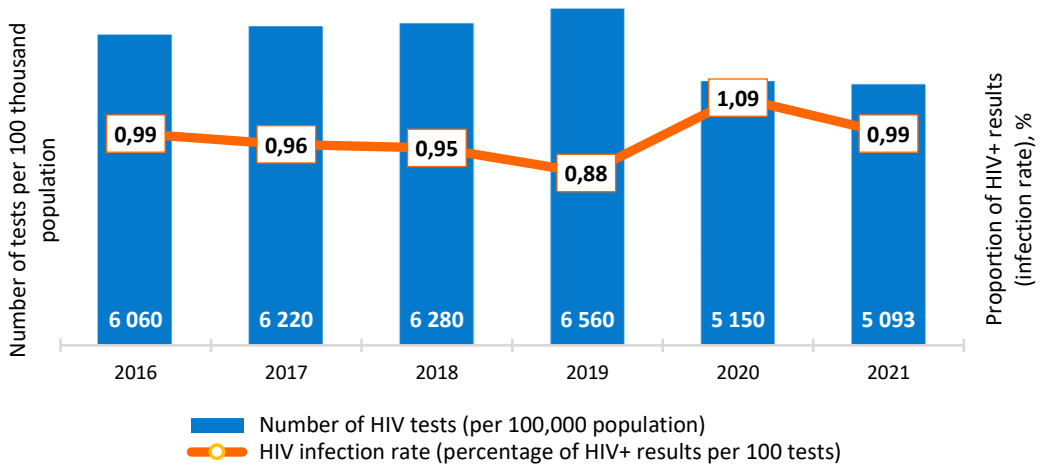
In Ukraine, the HIV epidemic is still in the concentrated phase with regionalisation of the epidemic process: the concentrated phase prevails in most regions, with mixed epidemic type only in 7 regions, namely in Dnipropetrovsk oblast (HIV prevalence in pregnant women — 1.24%), Donetsk oblast (1.71%), Kirovohrad oblast (1.1%), Luhansk oblast (1.13%), Mykolaiv oblast (1.95%), Odesa oblast (1.33%), Kherson oblast (1.37%) and generalised epidemic phase in Zakarpattia oblast.

3.1. Results of HIV prevalence seroepidemiological monitoring

Within the framework of seroepidemiological monitoring of HIV infection prevalence (hereinafter — SEM), an HIV infection rate (performance rate) is calculated, which reflects the percentage of persons with established HIV-positive status when conducting confirmatory (verification) testing in persons tested at the screening phase by serological diagnosis methods (ELISA, RTs) by specific codes (reasons) for testing.

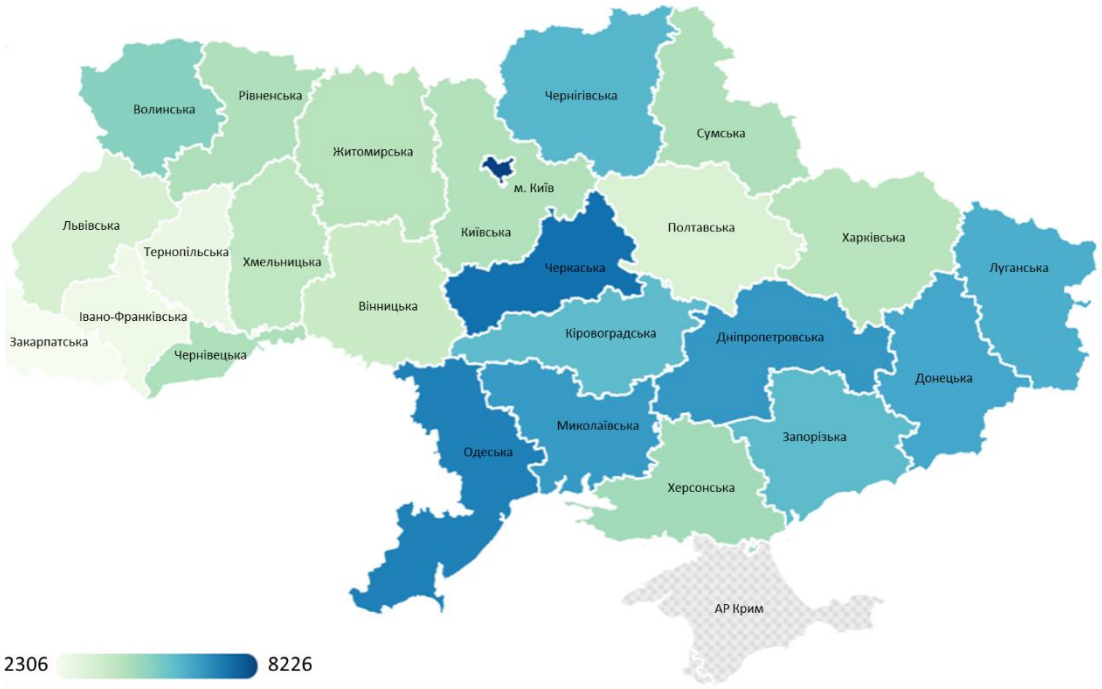
According to SEM data, the annual number of HIV screening tests performed in Ukraine was relatively stable before 2020, amounting to 2.3–2.5 million tests; however, due to quarantine restrictions caused by COVID-19 pandemic, the level of seeking HIV testing decreased. In 2021, 1,922,018 citizens of Ukraine were tested for HIV, which is 5.1% of the mean annual number of population or 5,093 per 100,000 population (**Table 2.1; Annex 2**). The number of positive results dropped by 11% in comparison with 2020 and amounted to 19,040. The general HIV infection level remained within 0.9–1.1% (**Fig. 6**).

Figure 6: Dynamics of HIV testing number (per 100,000 population) and HIV infection rate among the citizens of Ukraine, 2016–2021



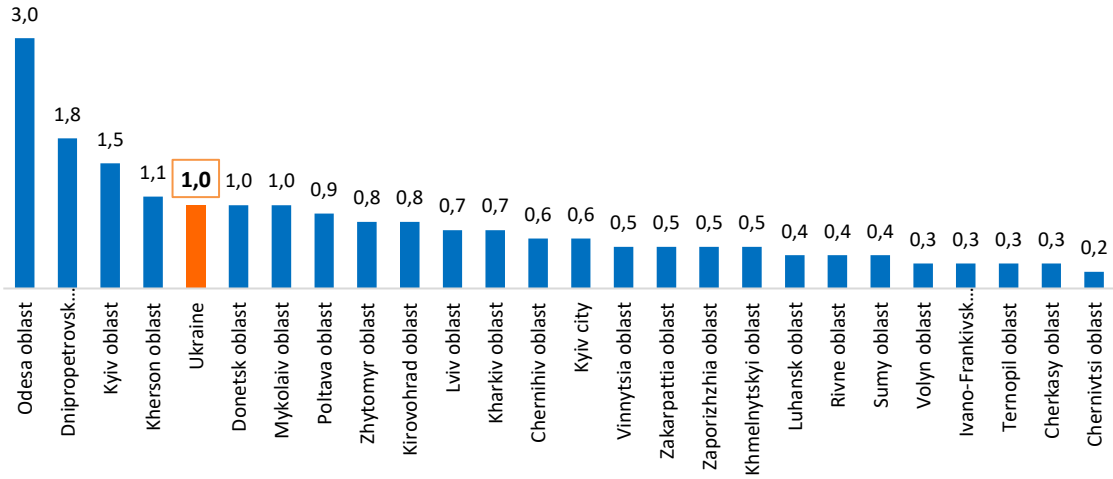
Both testing volume and performance varies depending on the region (**Fig. 7**). As of the end of 2021, Kyiv city, Cherkasy oblast, Odesa oblast, Dnipropetrovsk oblast and Mykolaiv oblast remained the leaders in terms of population coverage with HIV screening tests per 100,000 population (8,226; 7,293; 6,982; 6,534; 6,464 respectively). Kherson oblast was the only one to increase the number of tests in 2020. Testing volume grew in 11 oblasts in 2021, with Kyiv and Kirovohrad oblasts demonstrating almost a 40% increase, although it did not lead to an increase in the number of registered cases. Zakarpattia oblast, Ivano-Frankivsk oblast and Ternopil oblast were the least active in terms of testing (2,306; 2,594 and 2,718 tests per 100 thousand population respectively **(Table 2; Annex 2)).**

Figure 7: HIV infection screening coverage per 100,000 population in the regions of Ukraine, 2021, according to SEM data (code 100)



Testing performance under code 100 (citizens of Ukraine) varies from 0.2% in Chernivtsi oblast to 3.0% in Odesa oblast (**Fig. 8**). The best results, apart from Odesa oblast, were also demonstrated in Dnipropetrovsk oblast (1.8%) and Kyiv oblast (1.5%).

Figure 8: Percentage of positive HIV testing results in the regions of Ukraine, 2021, according to SEM data (code 100)



3.1.1. HIV testing structure in 2021

- *Proportion of donors and pregnant women* among persons tested for HIV was 39% (2020 — 38%, 2019 — 35%). In six oblasts, the rate was higher than 50%, showing insufficient testing coverage in other populations, namely in Zakarpattia oblast (65%), Cherkasy oblast (61%), Khmelnytskyi oblast (60%), Ternopil oblast (55%), Ivano-Frankivsk oblast (54%) and Volyn oblast (52%).

- *Share of KPs* in tested population (excluding donors and pregnant women) declined and was 9.1% (2020 — 13.5%; 2019 — 18%). However, despite small testing volume in KPs in the framework of SEM (107,257 persons), almost a third (27%) of the tested persons were found to be HIV-positive (2020 — 26%; 2019 — 16%)[11].

- *HIV prevalence* under most SEM codes decreased or remained at the level of the last year. Compared to 2020, an increase in the percentage of HIV-positive persons took place only in the following populations: PWID (code 102) — from 4.4% to 6.4%; MSM (code 103) — from 1.2% to 2.6%; persons from other at-risk populations tested based on epidemiological criteria (code 107) — from 1.3% to 4.1%.

- Similar to previous years, *the highest HIV prevalence levels* were found when testing persons who had sexual contacts with HIV-positive people (code 101) — 9.5%, deceased persons (code 119) — 9.4% and PWID (code 102) — 6.4%.

- The vast *majority of positive testing results* in 2021 were obtained using RTs — 73.2% (13,934 persons). Respectively, results obtained using IMs accounted for only a quarter of positive results (**Fig. 9**).

- In the past 5 years, *the volume of HTS using RTs* is continuously rising — from 20% in 2017 to 43% in 2021 (excluding testing in donors and pregnant women — from 43% to 87%). The lowest rates of RT use (<20%) as of the end of 2021 were observed in Khmelnytskyi oblast (9.2%), Ivano-Frankivsk oblast (11.8%), Zakarpattia oblast (14.1%), Ternopil oblast (18.1%), Kharkiv oblast (18.7%) and Volyn oblast (19.8%) (**Fig. 10**).

- Same as before, *a larger proportion of RTs* was used for testing in KPs, with a maximum RT testing proportion (> 90%) in PWID (code 102; 90%), MSM (code 103; 98%), and prisoners (code 112; 97%). Moreover, almost 80% of persons seeking medical care at HCFs (code 113) and persons who had sexual contacts with HIV-positive people (code 101) received HIV testing using rapid tests.

- The majority of *positive results received using RTs* was reported in detected PWID (code 102; 30%), persons with diseases for which the patients are offered HTS when seeking medical care at HCFs (code 113; 25%) and persons who had sexual contacts with HIV-positive people (code 101; 16.5%).

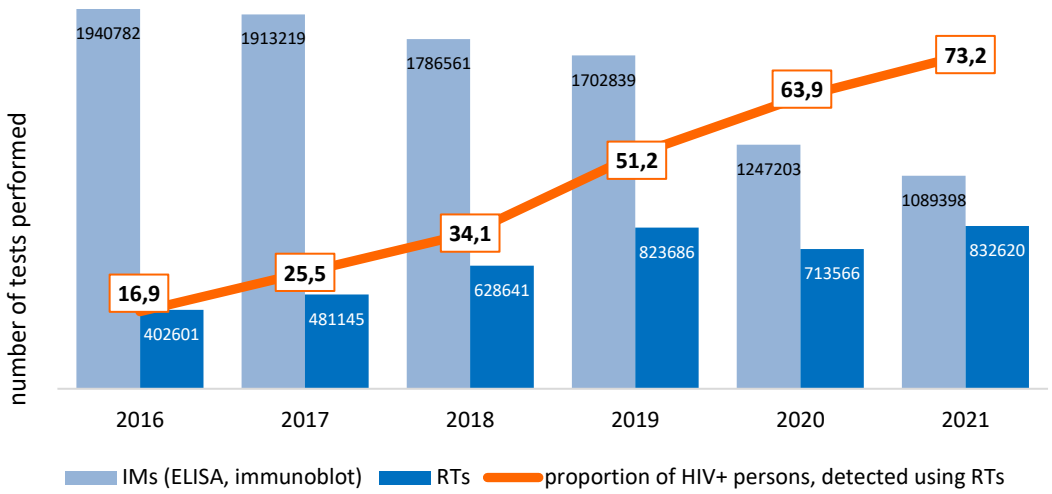
- *HIV testing performance using RTs* (excluding donors and pregnant women) was only 1.67% compared to 3.52% when using instrumental methods (IMs).

- RT use *registration and reporting* is not conducted to a full extent, which creates significant limitations for SEM data on persons tested for HIV using RTs, including those who received a positive result. For instance, the report of Chernivtsi oblast lacks information on any positive RT testing results since 2013, and reports of Zakarpattia, Ivano-Frankivsk, Ternopil and

[11] SEM codes: 101.2+103, 102, 104, 105.2

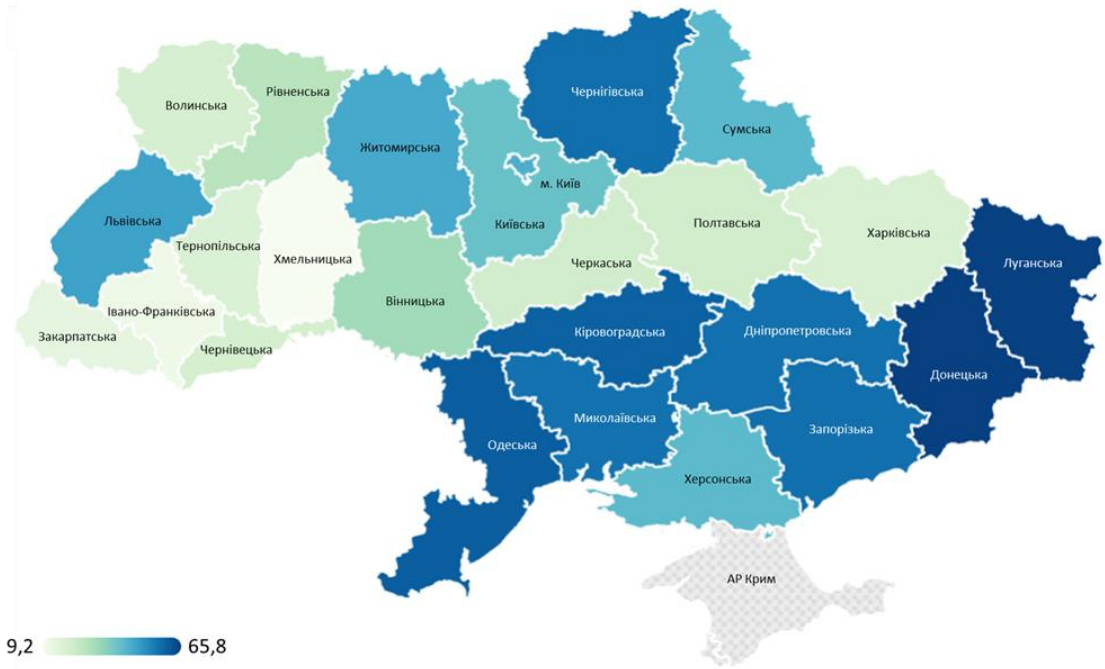
Khmelnytskyi oblasts have accounts of only occasional cases of HIV infection detection when using RTs, which contradicts the overall trends in the country.

Figure 9: Use of RTs for HIV infection diagnosis in Ukraine, 2016–2021



The most active use of RTs for HIV testing in 2021 was reported in the eastern and southern regions of Ukraine, namely in Donetsk oblast (66%), Luhansk oblast (65%), Odesa oblast (60%) and Kirovohrad oblast (60%) (**Fig. 10**). The lowest levels of RT use were observed in Khmelnytskyi (9%) and Ivano-Frankivsk oblasts (12%).

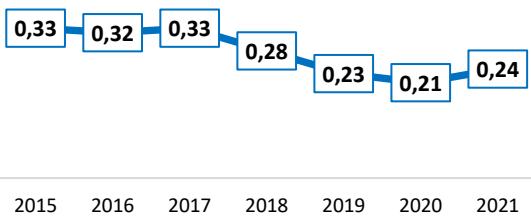
Figure 10: Percentage of persons tested for HIV using RTs in the regions of Ukraine according to SEM data, 2021



3.1.2. Seroepidemiological monitoring of HIV prevalence in pregnant women

According to primary testing results (code 109.1), the number of pregnant women tested for HIV in 2021 was 32% lower than in 2017. The number of new HIV cases in pregnant women within this period decreased by half, from 1,247 to 619.

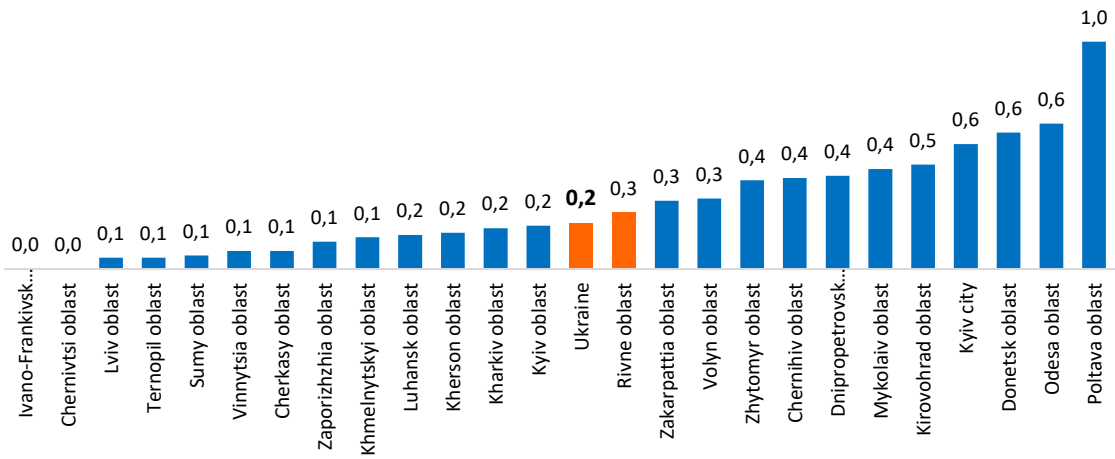
Figure 11: HIV prevalence in pregnant women (code 109.1) in Ukraine (%)



HIV infection rate in pregnant women under code 109.1 is also demonstrating a downward trend — from 0.33% in 2015 to 0.24% in 2021 (**Fig. 11**). The highest rates were reported in Poltava oblast (0.78%), Odesa and Mykolaiv oblasts (0.54% each), Dnipropetrovsk and Zhytomyr oblasts (0.38% each) and Donetsk oblast (0.36%). Furthermore, 23 pregnant women had negative results of the first/second tests and were found to be HIV-positive when retesting for HIV under codes 109.2 and 109.3 (**Table 2.25; Annex 2**).

HIV infection rate in pregnant women aged 15–24 is used as an element of complex evaluation of HIV prevalence in young people and a proxy for recent infection cases (incidence)[12]. Over the past 5 years, this indicator demonstrated a downward trend in Ukraine; however in 2020 the percentage of new HIV cases in pregnant women within this age group rose from 0.18% in 2019 to 0.23% (**Fig. 12**). In 2021, the rate showed a slight decrease to 0.20% with the highest level in Poltava oblast — 1.0% (**Table 2.26; Annex 2**).

Figure 12: HIV infection rate in pregnant women aged 15–24, 2021 (%)

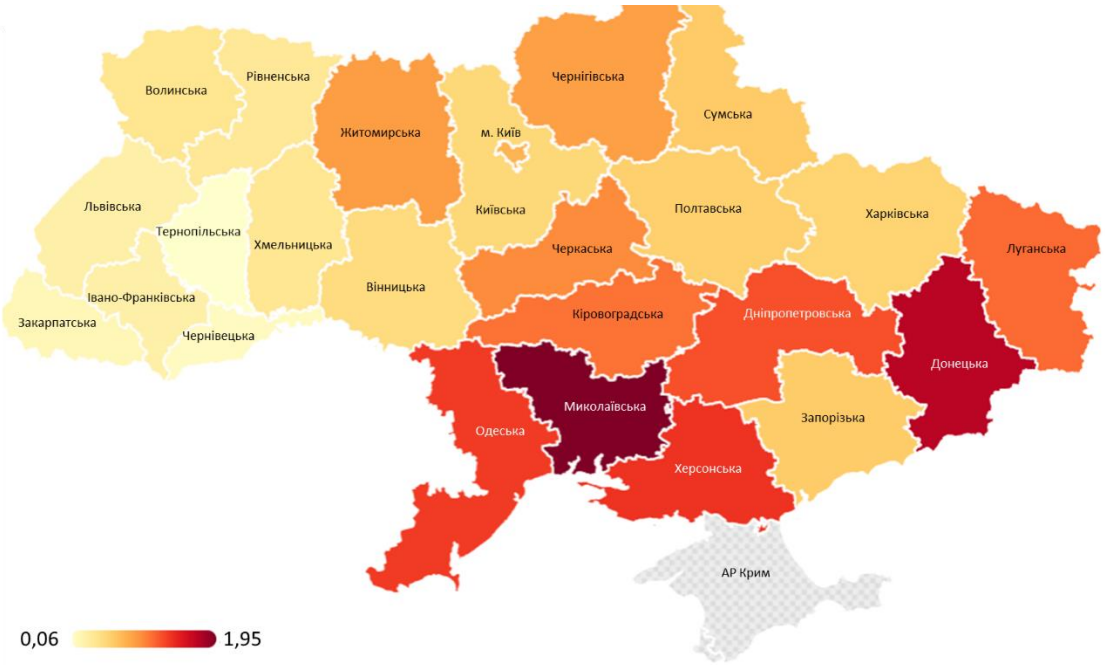


Analysis of HIV prevalence trends in pregnant women is a proxy for the evaluation of the epidemic status based on its transition to general public, which, provided that the level of 1% is exceeded

[12] Guidelines for second generation HIV surveillance: an update: know your epidemic /WHO, UNAIDS, 2013.- 72 p.

together with other indicators, may indicate the generalisation of the epidemic process[13]. From 2017 to 2021 this rate remained almost unchanged at the level of 0.70%–0.72%. In 2021, the rate exceeded the level of ≥ 1% in 7 regions (**Fig. 13**). The highest rates were registered in Mykolaiv (1.95%) and Donetsk (1.71%) oblasts, while the lowest rate was registered in Ternopil oblast (0.06%).

Figure 13: HIV prevalence in pregnant women in Ukraine, 2021 (%)



3.1.3. Seroepidemiological monitoring of HIV prevalence in persons seeking medical care at healthcare facilities

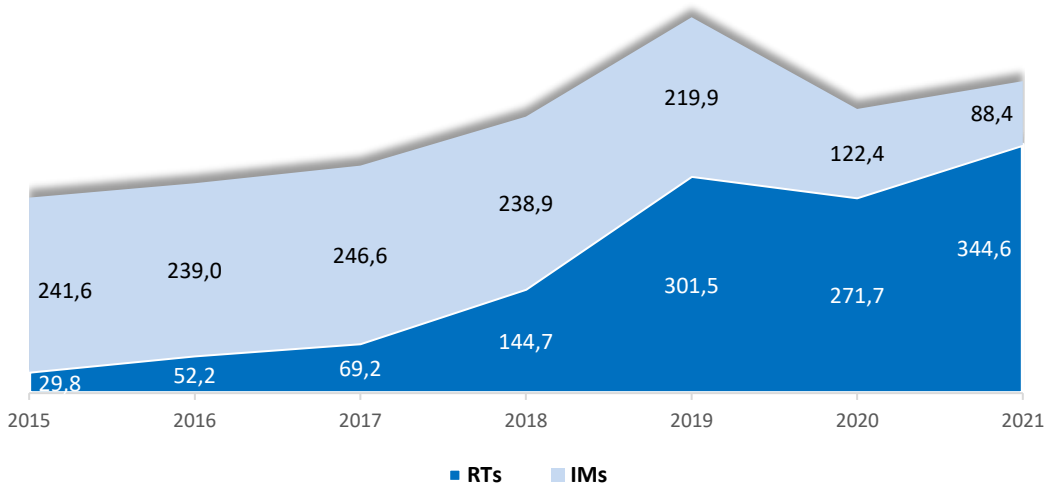
A key area of improving access to HIV-related services is ensuring widespread provider-initiated HTS coverage of the population aimed at establishing diagnosis and initiating ART at the earlier stages of HIV infection.

According to SEM data (code 113), the volumes of HTS delivery to the population when seeking medical care increased annually up to 2019, but in 2020 the number of tests at HCFs declined almost in every region of Ukraine due to quarantine restrictions caused by COVID-19 pandemic.

In 2021, the situation slightly improved, mostly due to the increased volume of RT testing (**Fig. 14**). 433 thousand persons were tested at HCFs, which was 10% more than in 2020. A significant increase in the number of performed tests was reported in Kirovohrad oblast (2.5 times), Vinnytsia oblast (48%), Ivano-Frankivsk and Chernihiv oblasts (40%).

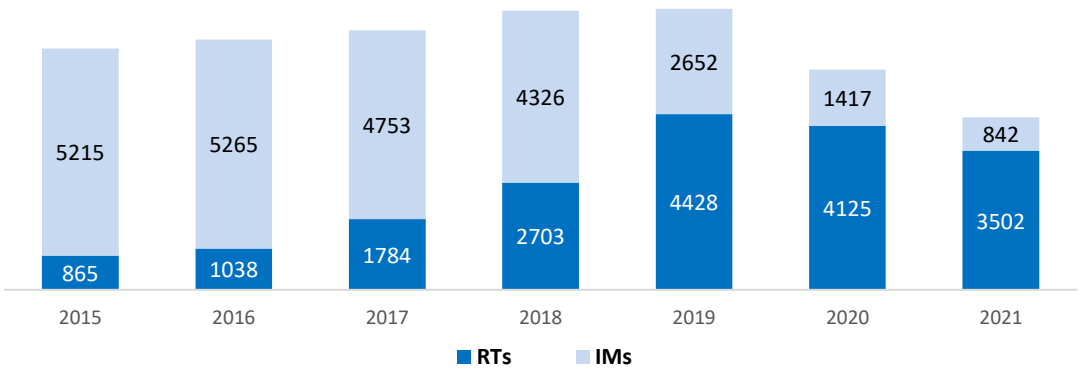
[13] The HIV prevalence in pregnant women includes all pregnant women who knew their HIV status before pregnancy and pregnant women who were first diagnosed with HIV infection during pregnancy within the reporting period.

Figure 14: Number of persons tested for HIV at HCFs (code 113) using instrumental methods (IMs) and RTs in Ukraine, 2015–2021 (thousand persons)



However, the increase in testing volumes did not lead to a rise in the number of HIV-positive persons detected in Ukraine in general; on the contrary, their number fell by 21% compared to the previous year, from 5,542 to 4,354 persons (**Fig. 15**).

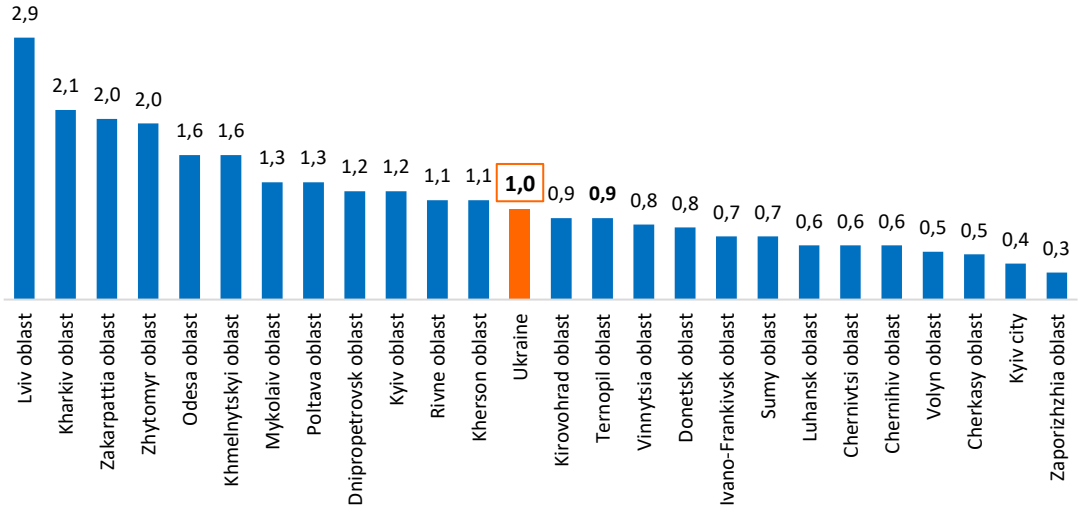
Figure 15: Number of HIV+ results received at HCFs when testing persons under code 113, by testing method in 2015–2021



From 2015 to 2021, HIV infection rate under code 113 showed a downward trend, falling from 2.2% to 1.0%. Increase in the percentage of HIV-positive persons compared to 2020 was registered in 7 oblasts: Zhytomyr oblast (from 1.42% to 1.95%), Ivano-Frankivsk oblast (from 0.47% to 0.72%), Lviv oblast (1.25% to 2.91%), Rivne oblast (from 0.72% to 1.12%), Kharkiv oblast (from 1.39% to 2.09%), Cherkasy oblast (from 0.38% to 0.47%) and Chernivtsi oblast (from 0.49% to 0.63%).

Same as before, the situation in regions differs both in terms of HTS volumes and testing performance, varying from the highest performance level in Lviv oblast (2.91%) to the lowest level in Zaporizhzhia oblast (0.32%) (**Fig. 16**).

Figure 16: Percentage of HIV-positive results in persons who received HTS when seeking medical care at HCFs in the regions of Ukraine based on SEM data, 2021



Only in the past 5 years, RT testing volume under code 113 increased by 5 times, while IM use decreased by three times. In 2021, most HTS at HCFs were provided using RTs (80%), and it was with the use of RTs that the majority of HIV-positive persons were detected (81%). However, the performance of HTS using RTs and IMs remained at the same level — 1.02% and 0.95% respectively, which primarily reflected the duplication of RTs with laboratory tests using IMs, the results of which were entered to official reports.

This prevents fair assessment of the progress towards provider-initiated HTS delivery and requires improving approaches to SEM reporting both at local and at national levels.

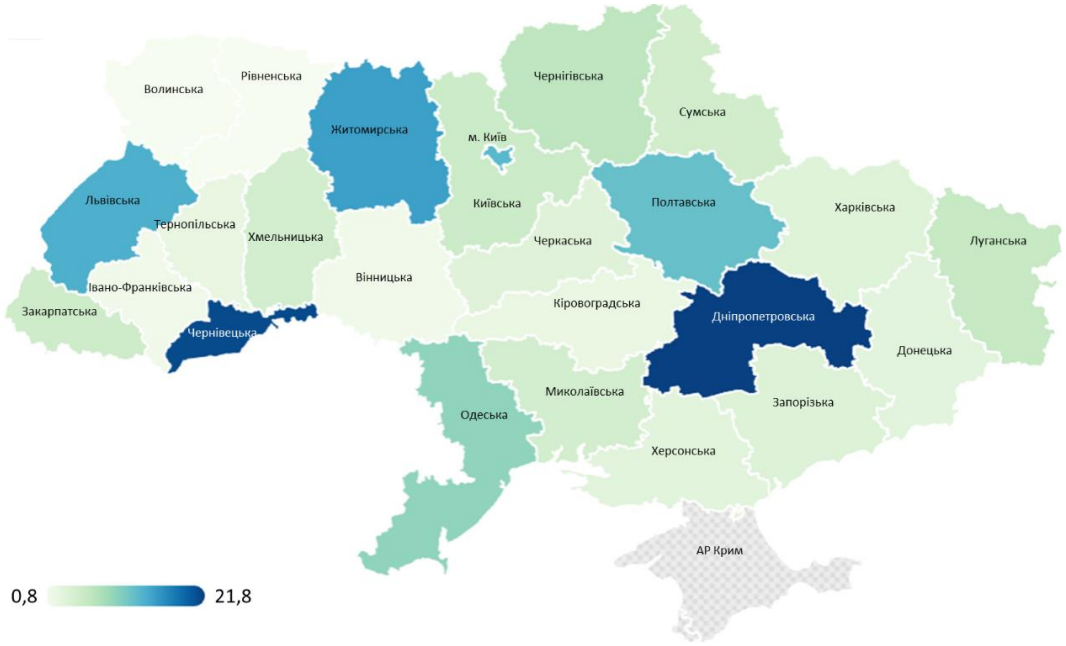
3.1.4. Seroepidemiological monitoring of HIV prevalence in key populations

The indicators of HIV prevalence in KPs at HCFs in the context of HTS delivery have a low level of informative value due to patients' refusal to report belonging to a certain KP. However, taking into account the data on HIV prevalence in KPs from other sources, the dynamic monitoring of SEM results under specific codes creates an opportunity to evaluate the role of KPs in the development of the epidemic process at the current stage as a whole.

The proportion of KPs in the total number of persons tested in Ukraine (excluding donors and pregnant women) is still on the decline and was 9.1% in 2021 (13.5% in 2020, 18% in 2019). The probable explanation for this situation may be the decrease in HTS volume due to quarantine restrictions in the context of COVID-19 pandemic.

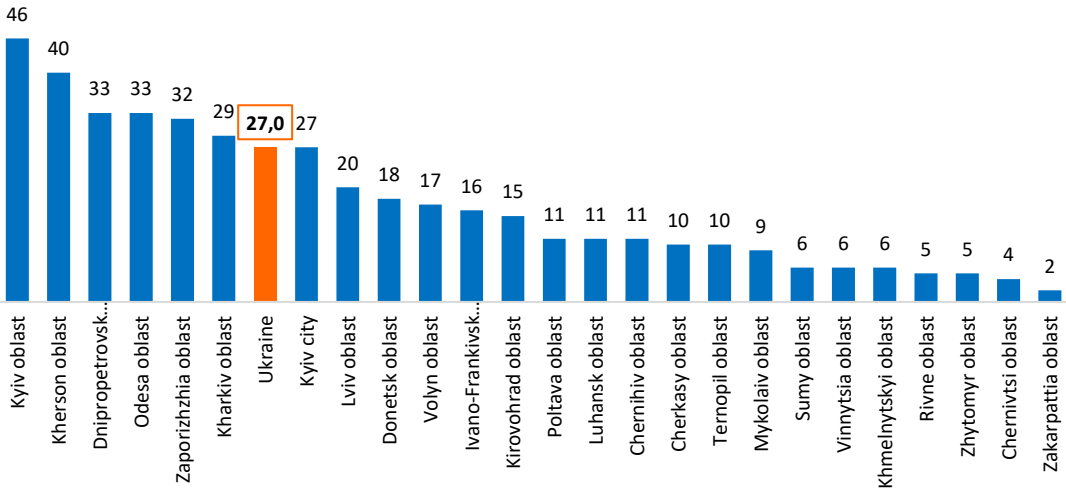
At the regional level (**Fig. 17**), the rate varied from 0.8% (Rivne oblast) to 21.8% (Dnipropetrovsk oblast), which highlights the significant differences in the organization of HTS delivery to KPs at the regional level (**Table 2.5, Annex 2**).

Figure 17: Regional differences in SEM results in terms of the proportion of KPs among the tested population (%, excluding donors and pregnant women), 2021



In 2021, although the volume of KP testing was small and continued falling, the KPs amounted for almost a third (27%) of the total number of HIV-positive persons detected within the framework of SEM (2020 — 26%; 2019 — 16%), with regional rates varying from 2% (Zakarpattia oblast) to 46% (Kyiv oblast) (**Fig. 18**).

Figure 18: Regional differences in SEM results (excluding donors and pregnant women), the proportion of KPs among the persons tested positive for HIV, 2021



Code 101.1 — Persons who had heterosexual contacts with HIV-positive persons

Based on SEM data, a total of 25.7 thousand persons who had heterosexual contacts with HIV-positive persons were tested in 2021 (**Table 2.6; Annex 2**). Most people from this population were tested in the framework of index testing, which helped to detect 2,418 HIV-positive persons in 12 months with a high performance rate of 9.4%, indicating a high level of HIV prevalence in partners of PLHIV and underscoring the relevance of index testing.

Overall, 80% of persons were tested under code 101.1 and 93% of HIV-positive persons were detected with a testing performance level of 11% (20,458 persons tested, 2,246 HIV+ persons detected). Testing performance when using IMs was much lower and amounted to 3.3% (5,222 persons tested, 172 HIV+ persons detected).

Code 102 — People who inject drugs (PWID)

Extending HTS coverage in PWID is one of the priority tasks to slow down the epidemic. According to biobehavioural surveys, HIV prevalence in PWID has been practically unchanged since 2013, remaining at a high level of 21%–23% with a slight decline to 20.3% in 2020[14].

Table 2: Dynamics of key indicators of epidemiological monitoring of HIV infection in people who inject drugs in Ukraine (2017–2021)

	2017	2018	2019	2020	2021
Seroepidemiological monitoring indicators					
Number of people who inject drugs tested for HIV (code 102)	181,294	173,305	128,219	107,059	67,491
of which persons with detected HIV serological markers	2,467	2,248	2,662	4,759	4,327
Percentage of HIV+ results (%)	1.4	1.3	2.1	4.5	6.4
Registration of HIV cases (linkage to care of persons newly diagnosed with HIV)					
Number of persons infected through parenteral transmission when injecting drugs linked to care during the reporting year	4,002	3,776	4,218	5,964	5,325
PWID percentage of all registered cases (%)	22.0	20.9	22.9	33.9	30.8
Number of PWID referred by NGOs	1,642	1,677	1,988	3,633	3,661
Percentage of PWID referred by NGOs (%)	41.1	44.4	47.2	61.0	68.8
AIDS and late diagnosis of HIV infection					
Number of new AIDS cases	2,872	2,343	1,916	1,027	914
Percentage of AIDS cases of the total amount of registered cases (%)	71.9	62.1	45.5	17.2	17.2

14 https://www.phc.org.ua/sites/default/files/users/user90/Results%20of%20IBBS_PWID%202020_ukr_online.pdf

In 2021, 67.5 thousand PWID were tested in the framework of SEM under code 102, which is 37% less than in the previous year (**Table 2.7; Annex 2**). In 90% of cases, the HTS services were provided using RTs. 4,327 PWID received positive test results, 97% of which were obtained using RTs.

Over the past 5 years, the infection rate by the code rose from 1.4% to 6.4%, which highlights the high level of HIV prevalence in PWID, the effectiveness of targeted actions aimed at HTS coverage of this population, as well as the need to further ensure unhindered access to HTS for PWID, including using RTs. Testing performance under code 102 using IMs was 1.7% (6,936 persons tested, 121 HIV+ persons detected) and 6.95% when using RTs (60,555 persons tested, 4,206 HIV+ persons detected).

The results provided in **Table 2** demonstrate that despite a significant decrease in the HTS volume in PWID, the overall screening performance was satisfactory. Most (almost 70%) PWID linked to care in 2021 were referred to HCFs by NGO social workers. This underlines a significant contribution of the civil society to epidemic response.

Code 103 — Persons who had homosexual contacts with HIV-positive persons (code 101.2) and persons whose HIV status is unknown

In 2021, a total of 14.7 MSM were tested for HIV infection (of which 395 under code 101.2 and 14.4 under code 103), which is 32% less than in 2020. The HIV infection rate rose to 2.9% (430 HIV-positive MSM were detected), which was the highest rate over the past 5 years (**Table 2.8; Annex 2**).

HIV infection rate in MSM in regions varied significantly (excluding Kirovohrad, Luhansk, Sumy and Chernivtsi oblasts, where no HIV-positive MSM were detected): from 0.3% in Zhytomyr oblast to 34.4% in Ivano-Frankivsk oblast. Almost 60% of HIV cases in MSM were detected in Kyiv city (124 persons), Kyiv oblast (66) and Odesa oblast (54). The results underline both regional differences in the number of MSM and the overall difficulty of HTS delivery to men, in particular at the stage of establishing sexual behaviour risks and defining homosexual contacts as a possible mode of transmission.

In 2021, 98% of MSM were tested and 92% of all HIV+ MSM were detected with testing performance of 2.75% (14,415 tested, 397 HIV+ persons). Testing performance when using IM was 9.9% (333 persons tested — 33 HIV+ persons detected).

Code 104 — Persons having symptoms of or diagnosed with sexually transmitted infections (STIs)

The annual growth of the number of cases of HIV infection through sexual contacts indicates the spread of risky sexual behaviours among the general population. Thus, HIV detection in persons with sexually transmitted infections (hereinafter — STIs) who have the highest risk of HIV acquisition is an important component of prevention programmes aimed at early detection of HIV infection.

HIV infection rate in persons with symptoms of or diagnosed with STIs (code 104) in Ukraine over the past 5 years remains almost unchanged at the level of 1.0% (**Table 2.9; Annex 2**). In 2021, a total of 16 thousand persons with STIs were tested in the framework of SEM, of which 76% — using RTs. 151 (1.0%) of the tested persons received a positive testing result. Most of them (81% — 122 persons) were detected using RTs with 1.03% performance (11,814 persons tested, 122 HIV+ persons detected). HTS performance when using IMs was slightly lower and amounted to 0.8% (3,778 persons tested, 29 HIV+ persons detected).

Code 105 — Persons with risky sexual behaviours

This code is used to register HTS delivery for the following populations: 105.1 — persons having unprotected contacts with casual sex partners; and 105.2 — commercial sex workers. Over the past 5 years, HIV infection rate in persons with risky behaviour within the framework of SEM was almost the same at the level of 1.1%–1.3%, although the number of tested person was gradually increasing.

In 2021, a total of 106.4 thousand persons were tested under code 105, of which HIV infection was detected in 1,420 (1.3%). Most HIV+ persons are detected when testing under code 105.1, which accounted for 98% of all persons with positive test results tested under code 105 in 2021. The highest infection rates by this code were registered in Khmelnytskyi (5.9%), Odesa (4.6%), Rivne (4.3%) and Kirovohrad (3.3%) oblasts.

HTS extension for these populations is performed through RT implementation. In 2021, two thirds (67%) of the persons were tested and 87% detected using RTs with a performance rate of 1.7% (71,355 persons tested, 1,236 HIV+ persons detected). Testing performance when using IM was 0.5% (35,019 persons tested — 18 HIV+ persons detected).

Within the framework of SEM improvement, starting from 2013, Ukraine has been monitoring HIV test results in commercial sex workers (code 105.2). The infection rate in this population within the framework of SEM was 0.3% in 2021 (9.4 thousand persons tested, only 29 HIV+ persons detected). However, based on the data of the Integrated biobehavioural survey in 2021, HIV prevalence in SWs exceeded the SEM data under code 105.2 and was 3.1%. This difference in prevalence rates may indicate difficulties with access to HTS for SWs in most regions.

Code 112 — People detained in penitentiaries, including pre-trial detention facilities

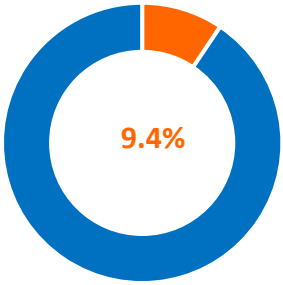
HIV prevalence in penitentiaries is higher than that of the general public due to the risky behaviours of the population, criminalisation, recidivism, etc., which allows viewing people in penitentiaries, or prisoners, as a KP. According to the most recent biobehavioural survey data, HIV prevalence in prisoners was 8.9% in 2019[15].

Over the past 5 years, the HTS access of people residing at the facilities of the State Criminal-Executive Service (hereinafter — SCES) improved significantly (**Table 2.10; Annex 2**). According to SEM data, HIV testing volume increased 2.6 times compared to 2017, from 29.4 to 76.8 thousand persons. Only in the past year, the volume of provided HTS rose by 45% in comparison with 2020; At the same time, the HIV infection rate demonstrates a downward trend, from 3.32% (974 persons) to 0.8% (595 persons) respectively. In 2021, similarly to the previous years, screening and verification tests in the SCES facilities were performed using RTs — 97% and 95% respectively. Testing performance was 0.8% for RTs (74,451 persons tested, 565 HIV+ persons detected) and 1.3% for IMs (345 persons tested — 30 HIV+ persons detected).

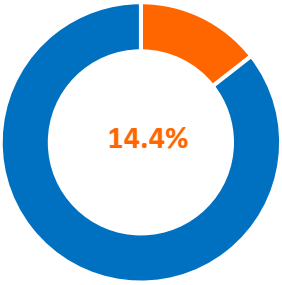
[15] https://phc.org.ua/sites/default/files/users/user90/IBPD_prison_report.pdf

Figure 19: Summary HIV infection testing results in KPs based on SEM data in Ukraine, 2021 (number of tests and the percentage of positive results)

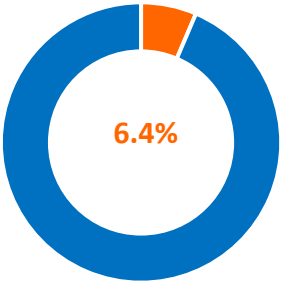
Persons who had heterosexual contacts with HIV-positive persons (code 101.1) — 25,680 persons tested



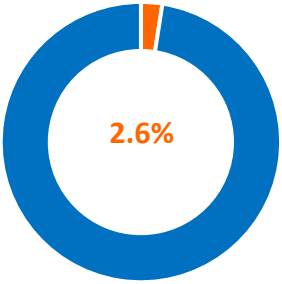
Persons who had homosexual contacts with HIV-positive persons (code 101.2) — 395 persons tested



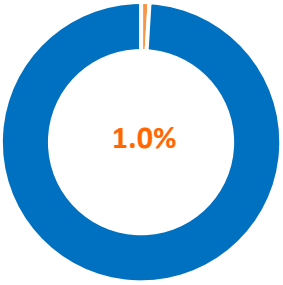
People who inject drugs (code 102) — 67,491 persons tested



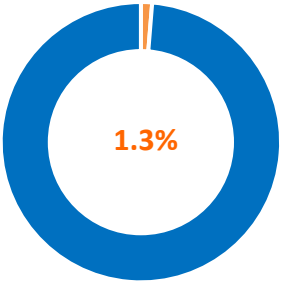
Persons who had homosexual contacts with persons whose HIV status is unknown (code 103) — 14,353 persons tested



Persons with symptoms of or diagnosed with STIs (code 104) — 15,592 persons tested



Persons with risky sexual behaviours (code 105) — 106,374 persons tested



The data on SEM results provided in **Table 19** should be assessed in a comprehensive way taking into account the regional context, namely the demographical and epidemiological specificities, the volume and effectiveness of HTS, the targeted prevention measures in KPs, the results of biobehavioural surveys, etc.

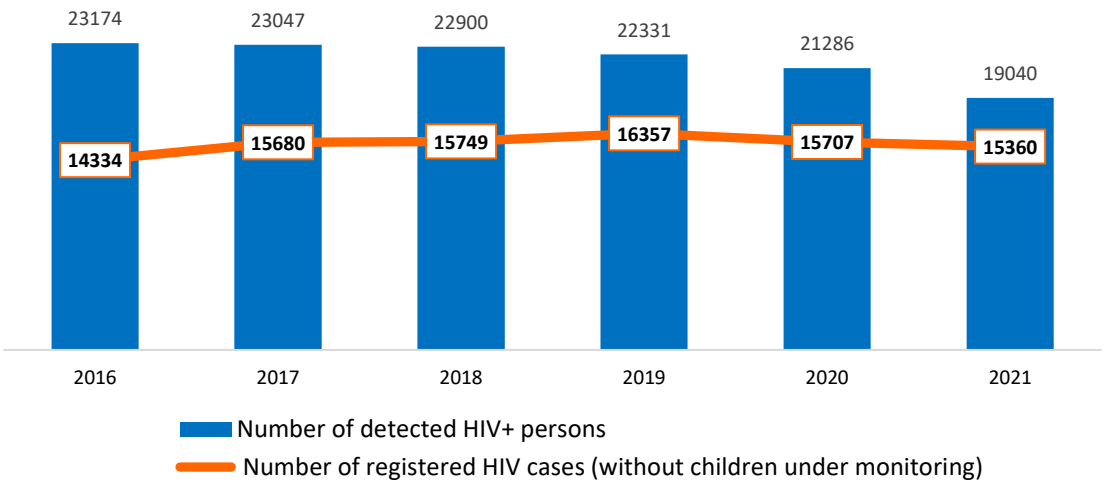
Unfortunately, the current SEM system does not allow taking into account the simultaneous presence of several signs and risk factors. As a result, it distorts the perception of the whole picture of the development of the epidemic in specific populations. Thus, one of the areas of work for the next years should be improving approaches to SEM taking into account the current needs of surveillance and the regional specificities of the epidemic, which would facilitate the further improvement of data quality and precision, as well as the formation of a precise evaluation of the epidemiological situation with the aim of taking appropriate prevention and anti-epidemic measures against HIV infection/AIDS.

The issue of improving access to HTS for KPs and their sexual partners remains relevant for Ukraine. Together with extending the coverage of prevention programmes and improving access to HTS, the focus should be on solving issues of ensuring quality and intensity of the targeted interventions, since the ultimate goal of the specified measures is transitioning to a safer behaviour at the individual level. This issue remains highly relevant as of today, which is well confirmed by the data of the most recent rounds of biobehavioural surveys.

3.2. Registration and linkage to care of HIV cases

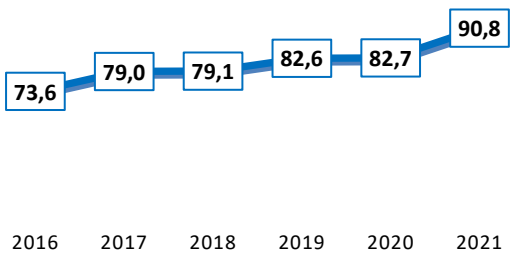
In 2021, the number of HIV cases diagnosed and linked to care demonstrated a proportional decrease (**Fig. 20**). Throughout the year, HIV infection was newly diagnosed in 19,040 persons, which is 11% lower than in the previous year; 2% fewer patients were linked to care (15,360 persons).

Figure 20: Number of HIV-positive persons detected based on SEM data and registered HIV cases in Ukraine (2016–2021)



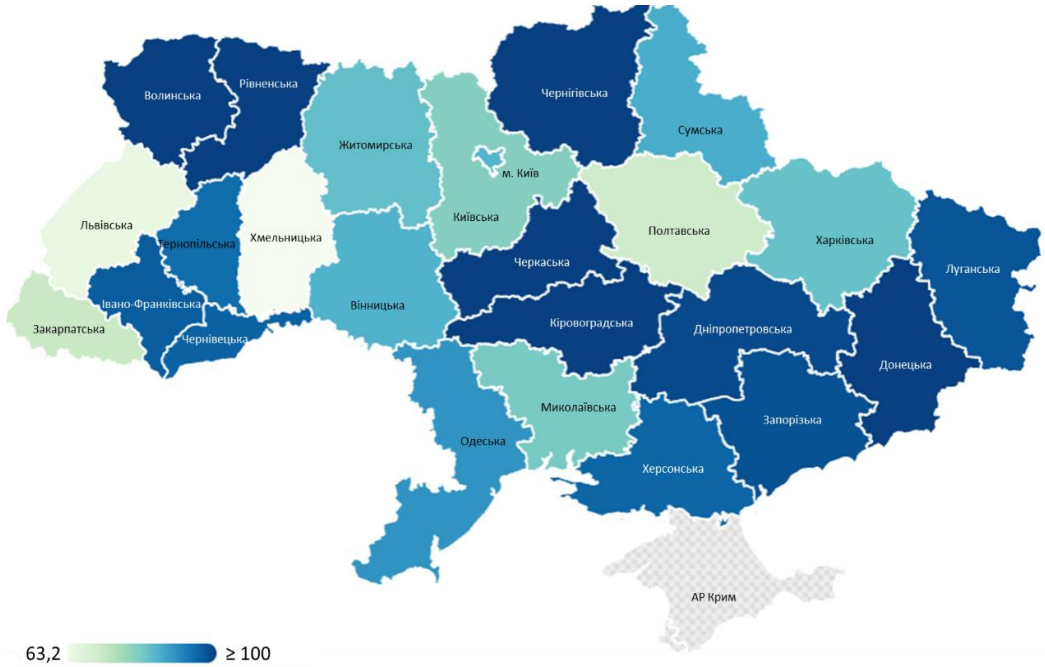
Taking into account the development of the epidemic in Ukraine, the incidence based on the data of official registration of HIV cases directly depends on such significant factors as the volume and performance of HTS and the effectiveness of measures aimed at linking HIV-positive persons to care. A rational combination of all the factors will contribute to the achievement of the UNAIDS goal "95% of people living with HIV know their HIV status".

Figure 21: Follow-up coverage rate in HIV-positive persons of the number of HIV+ persons detected based on the data of SEM in Ukraine (%), 2016-2021.



The follow-up coverage rate in HIV-positive people demonstrates a positive trend and reached a level of 90.8% in 2021 due to joint efforts by HCFs and NGOs, in particular within the framework of HealthLink projects implementation (**Fig. 21**). The coverage rates vary significantly at the regional level (**Table 2.14; Annex 2**). In five regions the rates exceed 100%, which can be explained by an increase in the number of HIV-positive persons who were detected before 2021 and linked to care only within the reporting year. The lowest coverage levels were reported by Khmelnytskyi oblast (63.2%) and Lviv oblast (66) (**Fig. 22**).

Figure 22: Follow-up coverage rate in HIV-positive persons in 2021 based on the data of SEM in the regions of Ukraine (%)

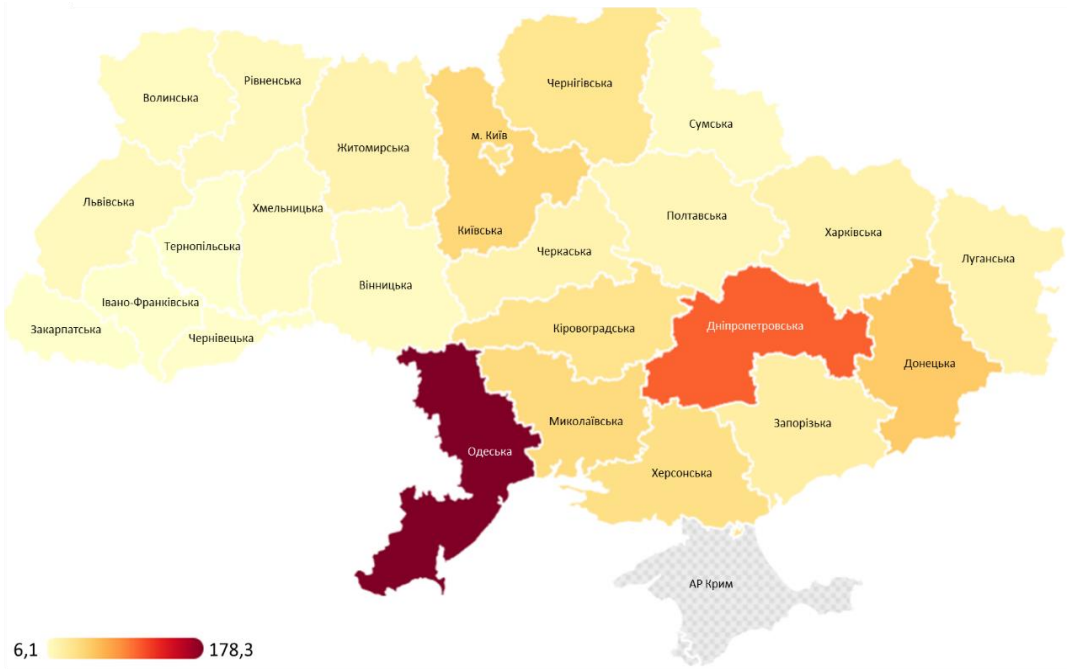


HIV infection in Ukraine

In 2021, 15,360 people with newly diagnosed HIV infection were registered. Taking into account the data, an HIV incidence is formed based on the official registration data of confirmed cases in Ukraine, which amounted to 40.6 per 100 thousand population with the lowest rate in Ternopil oblast (6.1) and the highest rate in Odesa oblast (178.3) (**Fig. 23**)[16].

The HIV incidence demonstrated a slight decrease compared to 2020, from 41.1 to 40.6 per 100,000 population (increase rate -1.2%) due to the decline in the number of registered cases **(Table 2.13; Annex 2).** Most the regions of Ukraine had negative incidence increase rate in 2021 with the largest value in Cherkasy oblast (increase rate -22%). Positive increase was observed only in 7 regions with the highest level in Ivano-Frankivsk oblast (increase rate 39.1%).

Figure 23: HIV incidence in the regions of Ukraine, 2021



The regions' contribution to the increase in the number of registered HIV cases varies significantly (**Fig. 23).** Two-thirds (63%) of the number of cases are accounted for by 4 regions: Odesa oblast (4,210), Dnipropetrovsk oblast (3,392), Donetsk oblast (1,045) and Kyiv city (1,104). Thus, the specificities of the epidemiological situation and full-scale interventions in these regions will have the most significant impact on setting the trends of the national epidemic indicators.

Timeliness of HIV infection diagnosis still remained a relevant problem for Ukraine in 2021. Increasing the number of PLHIV on ART is the key factor for slowing down the spread of HIV infection. Late HIV diagnosis or refusal of follow-up by people with known HIV status leads to an increase in the number of people with a transmissive HIV infection.

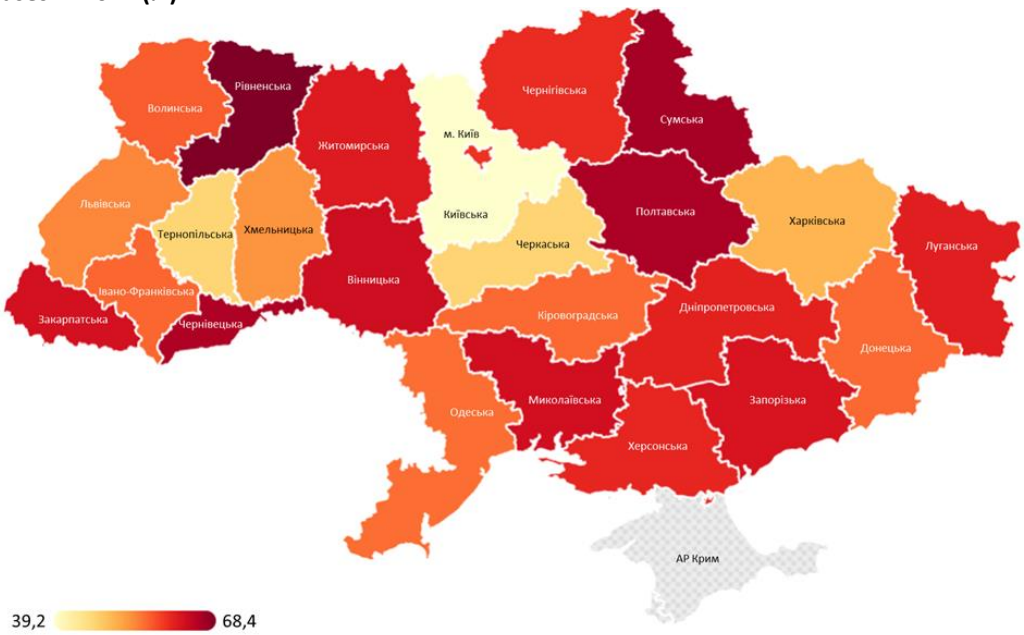
CD4 testing coverage in persons newly diagnosed with HIV infection when linking to care was 86.2% Most of them (57.3%) had CD4 count < 350 cells/µl (54.5% in 2020). Geographically, the situation does not show any clear patterns. The lowest levels were registered in Kyiv oblast (39.2%), Ternopil

[16] The HIV incidence based on the official registration data should be assessed exclusively in the context of the epidemic and the specificities of the implementation of regional targeted programmes. This indicator is different from the HIV incidence level, which means new HIV cases that uses modelling as a source of data.

oblast (46.5%) and Cherkasy oblast (46.7%); the highest levels — in Rivne oblast (68.4%) and Sumy oblast (66%) (**Fig. 24**).

Determining the proportion of PLHIV with initial CD4 count < 200 cells/µl serves as an additional indicator of timeliness of diagnoses. Compared to the previous year, the rate grew from 28.7% to 35.3%, varying from 16.3% in Ternopil oblast to 50% in Chernivtsi oblast.

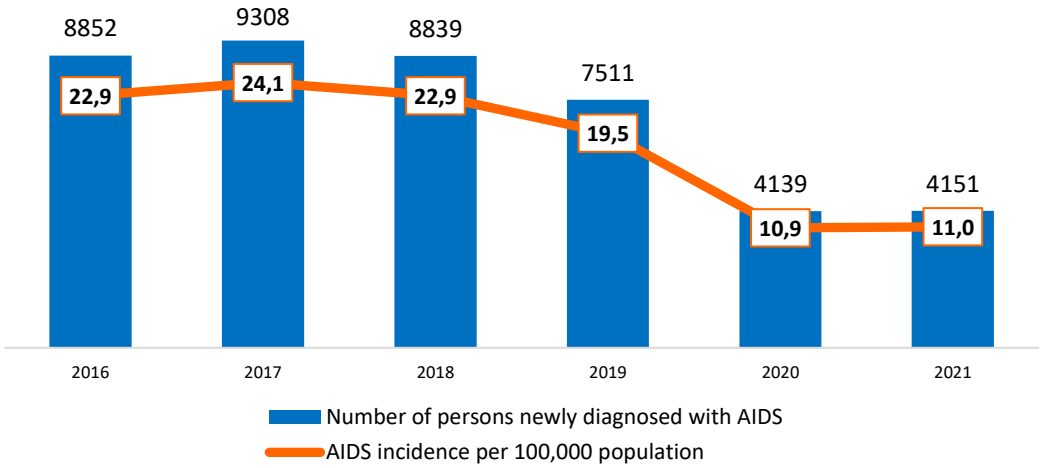
Figure 24: Percentage of persons with CD4 count < 350 cells/µl among newly registered HIV cases in 2021 (%)



In may be appropriate to assess the timeliness in combination with accounting for programme actions aimed at detecting HIV positive persons and linking them to care.

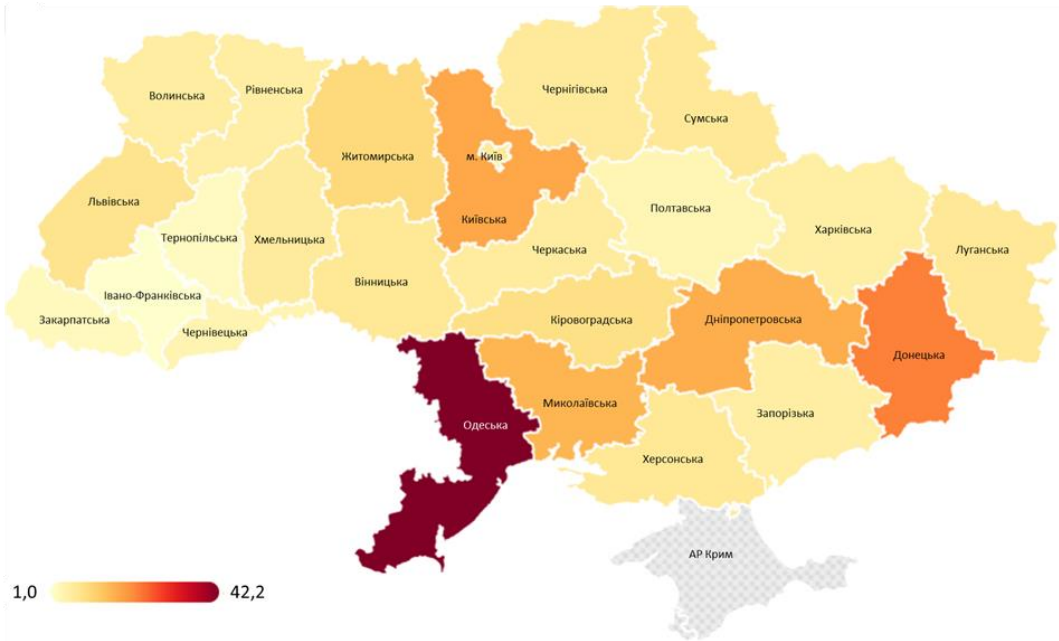
AIDS incidence among the general population according to the data on officially registered cases shows similar trends based on modelling results (Spectrum). In 2021, 4,151 AIDS cases were registered in HIV-positive people, which is 11.0 per 100,000 population (**Fig. 25**).

Figure 25: Total number and incidence per 100,000 population of registered AIDS cases in HIV-positive people in Ukraine, 2016–2021



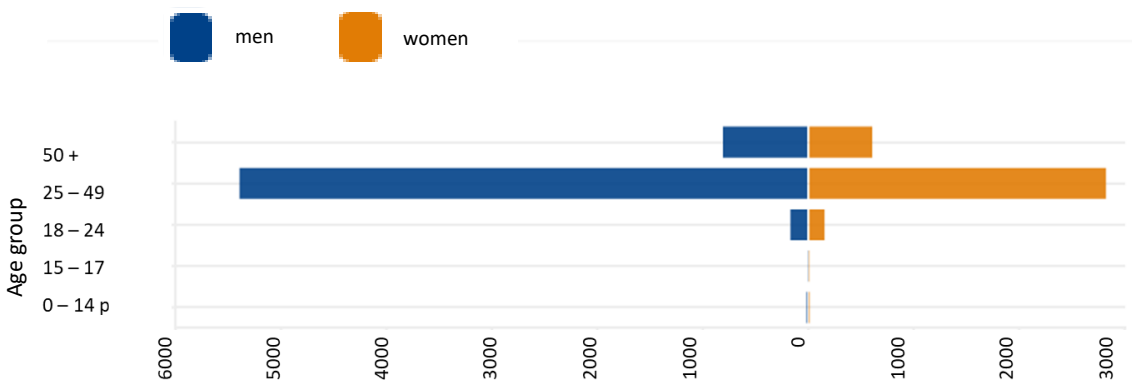
The highest number of AIDS cases in 2021 was registered in Odesa oblast (997), which amounts to a quarter of all cases registered in the country **(Fig. 26).** Consequently, the incidence in the region was almost 4 times higher than the country's average and amounted to 42.2 per 100,000 population. The lowest rates were reported by Ivano-Frankivsk (1.0), Ternopil (2.3) and Zakarpattia (2.6) oblasts (**Table 2.19; Annex 2**).

Figure 26: AIDS incidence in the regions of Ukraine, 2021



The age-sex characteristics of new HIV cases are changing gradually. The sex structure of registered cases of HIV infection retains a trend to a gradual increase in the proportion of men, who accounted for 63% of cases in 2021 (**Fig. 27**). The age structure of newly registered HIV cases, same as before, is characterised by the prevalence of the age group of 25–49, the proportion of which was 82.2% in 2020. The number and proportion of persons aged 15-24 continue declining (517; 3.3%).

Figure 27: Age-sex structure of PLHIV newly linked to care in Ukraine, 2021



Similar to previous years, the majority of persons newly diagnosed with HIV were registered among urban residents (81%).

Over the past years, modes of HIV transmission remain largely unchanged. The proportion of sexual transmission (predominantly through heterosexual contacts) exceeded the proportion of artificial parenteral transmission when injecting drugs and amounted to 64.9% (5,141) (**Fig. 28**).

Figure 28: Dynamics of the key modes of HIV transmission in Ukraine in persons newly linked to care, 2005–2021

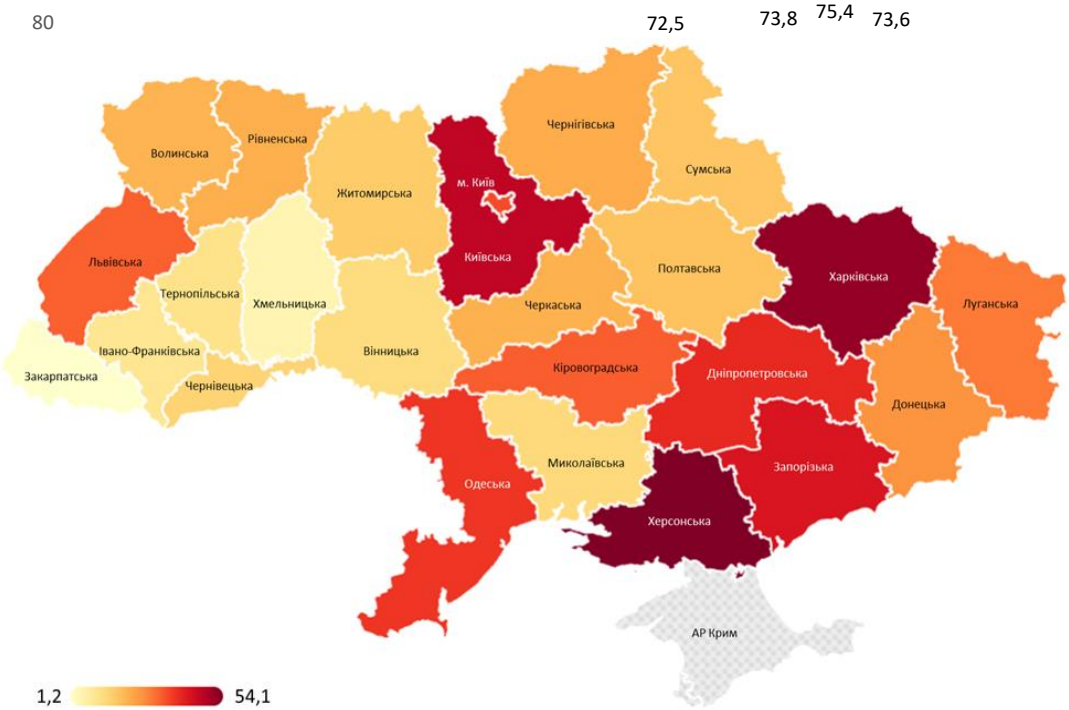


Figure 29: Percentage of persons with parenteral HIV transmission among persons newly diagnosed with HIV in Ukraine, 2021

Although the number of persons with heterosexual transmission was 62.1% as before, there is a large probability of a certain number of HIV-positive people deliberately concealing the facts of risky behaviours (unprotected homosexual contacts or experience of injecting drugs, etc.). The number of persons with homosexual transmission amounted to 2.8% among all persons with determined mode of transmission.

Parenteral transmission amounted to 34.7% (3,661), vertical — 0.3% (48), indeterminate mode of transmission is registered in 0.1% of cases (21). The number of persons with parenteral transmission among persons with newly registered HIV cases varies from 1.2% in Zakarpattia oblast to 54.1% in Kherson oblast (**Fig. 29**). At the same time, 55% of the total number of cases was registered in two regions: Odesa (1,578) and Dnipropetrovsk (1,330) oblasts.

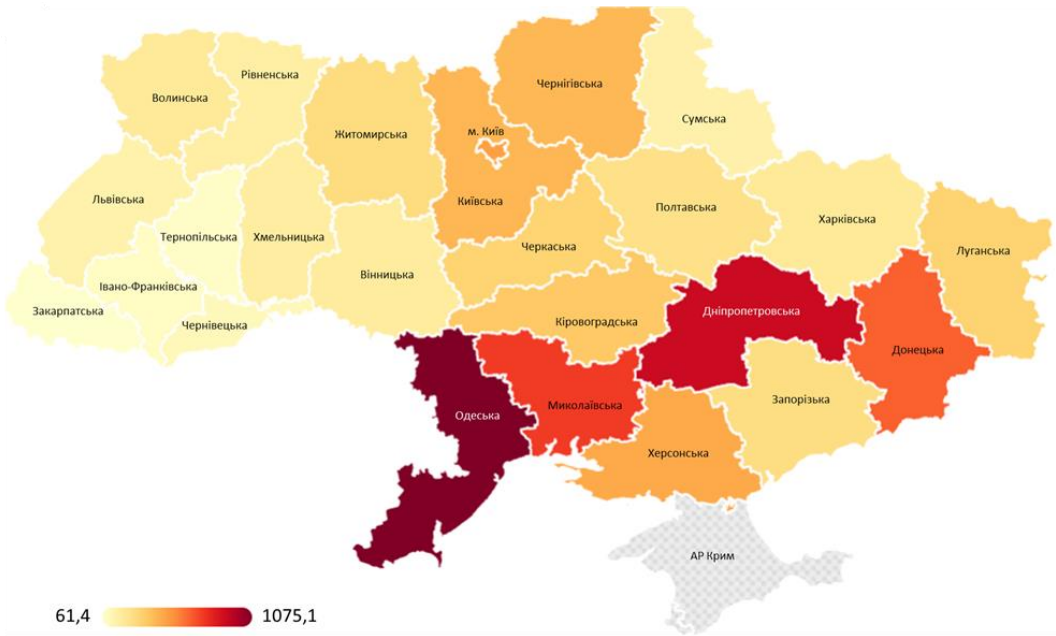
3.3. Follow-up group at healthcare facilities

As of 01.01.2022, 150,005 HIV-positive citizens of Ukraine and 262 foreigners were under follow-up at HCFs. This means that approximately a quarter of the estimated number of PLHIV either do not know their HIV status or do not seek medical care.

150,005	**394.5**
people living with HIV were registered at HCFs as of the end of 2021	persons per 100,000 population — HIV prevalence among general public based on the official registration data (2021)

HIV prevalence *(based on official case registration data) is* 394.5 per 100,000 population and varies depending on the region from 61.4 in Zakarpattia oblast to 1,075.1 in Odesa oblast.

Figure 30: Number of HIV cases per 100,000 population (prevalence based on PLHIV registration data) in the regions of Ukraine as of 01.01.2022



At the same time, 54% of all registered cases are concentrated in 4 regions of Ukraine: Dnipropetrovsk oblast (28,275), Odesa oblast (25,341), Donetsk oblast (12,261) and Kyiv city

(14,576) (**Fig. 30; Table 2.19; Annex 2).** The proportion of children aged 0–14 in the general follow-up group is 4.0% (6,182), of which the majority is represented by HIV-exposed children under monitoring (4,219).

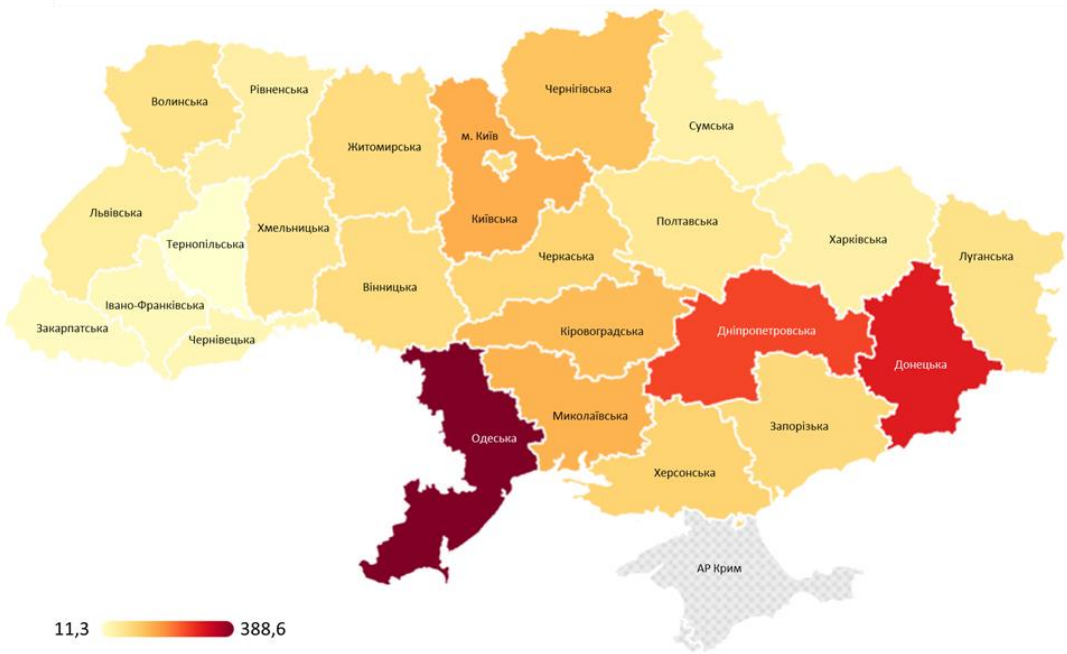
The specificities of age-sex structure of PLHIV under follow-up at HCFs:

- The majority is represented by men (54.7%);
- The largest age group is from 25 to 49 (78.7%);
- 77.7% are urban residents.

Every year, active ***patient movement*** is taking place within the regions of Ukraine. Most frequently this is caused by changing the place of residence of PLHIV. According to statistics, 148,350 citizens of Ukraine and 259 foreigners were linked to care as of the beginning of the year[17]. Overall, 15,220 citizens of Ukraine were deregistered in 2021, of which: 1,863 children due to the absence of HIV infection; 4,430 citizens of Ukraine and 23 foreigners due to the change of the place of residence; 5,020 persons died and 3,907 were deregistered due to other reasons (due to termination of follow-up or absence of information on such persons, etc.). According to HCF data, in 2021, 3,806 of PLHIV who were linked to care were not those newly diagnosed with HIV infection, namely persons who changed their place of residence within the year or were lost to follow-up and re-engaged into care.

As of 01.01.2022, 47,652 persons ***diagnosed with AIDS*** were linked to care at HCFs (32% of all PLHIV linked to care), which is 126.3 per 100,000 population (**Table 2.19; Annex 2**). The AIDS prevalence based on official registration data varies from 11.3 per 100,000 population in Ternopil oblast to 388.6 in Odesa oblast (Fig. 31).

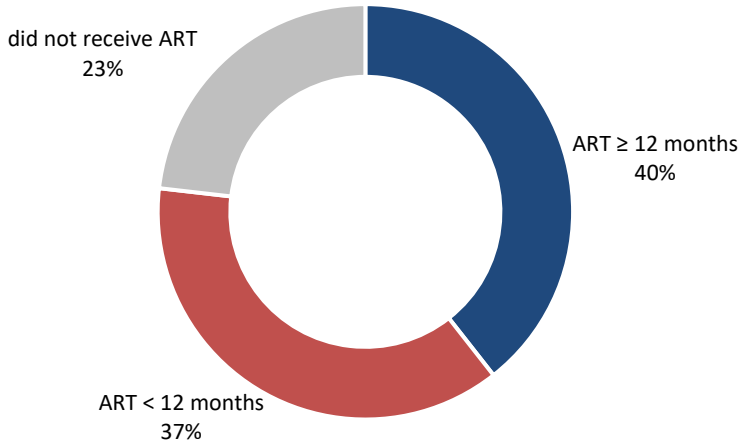
Figure 31: Number of registered AIDS cases per 100,000 population (prevalence based on PLHIV registration data) in the regions of Ukraine as of 01.01.2022



[17] Including HIV-exposed children under monitoring

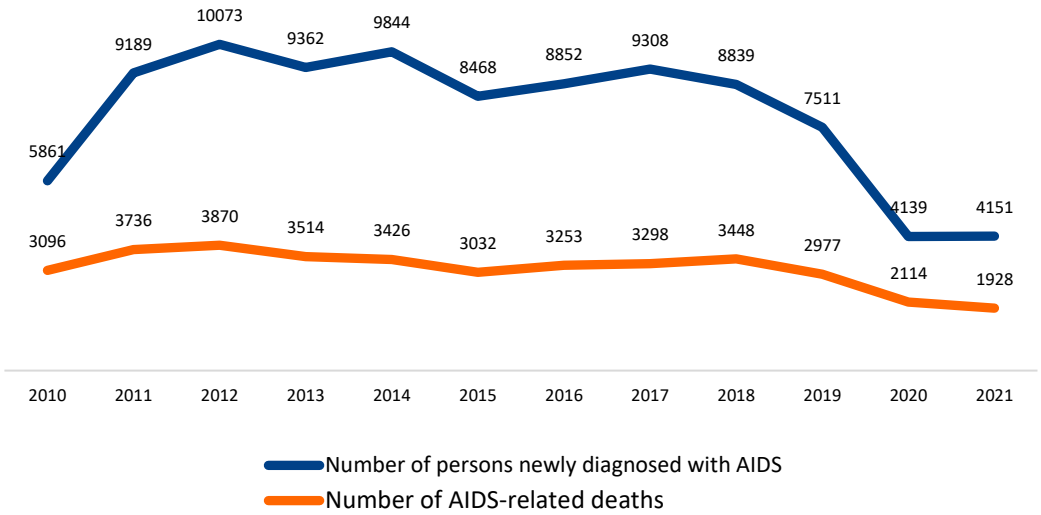
Among 2,144 persons who died due to reasons directly related to HIV infection in 2021, the majority (77%; 1,647) were on ART, in particular: 40% had been on ART for more than 12 months and 37% — for less than 12 months (**Fig. 32**).

Figure 32: Receipt of ART among persons who died due to reasons directly related to HIV (%), 2021



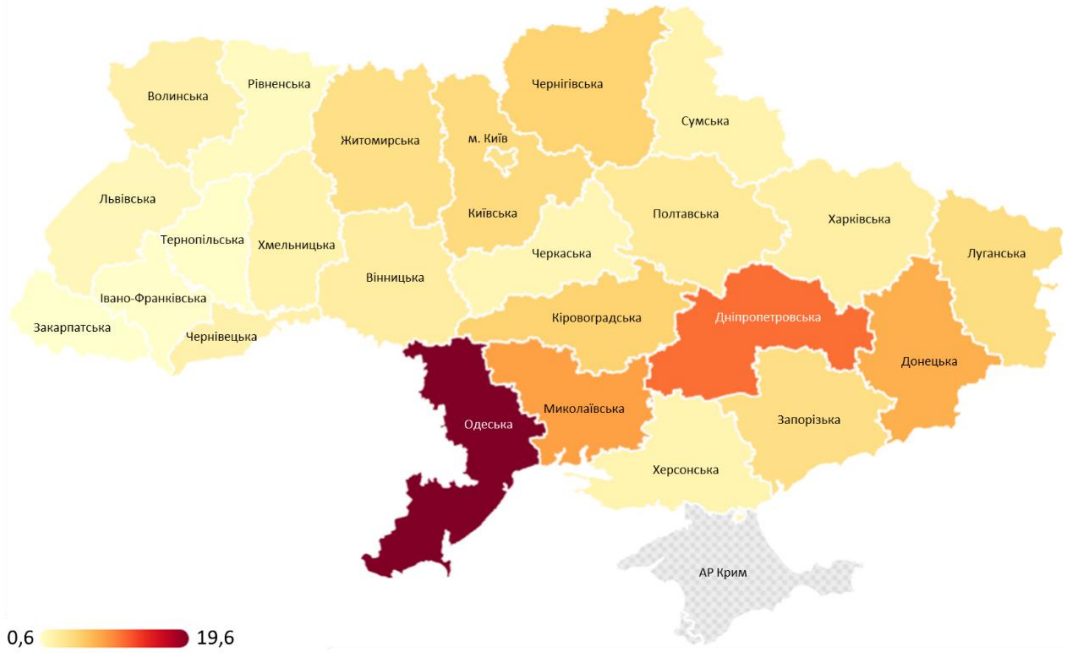
Based on data from HCFs performing follow-up of PLHIV, Ukraine maintains a downward trend concerning the number of AIDS cases and AIDS-related deaths (**Fig. 33**). Overall, the situation is similar to the one based on modelling results (see Section II).

Figure 33: Number of registered AIDS cases and AIDS-related deaths (based on HCF data), 2010–2021



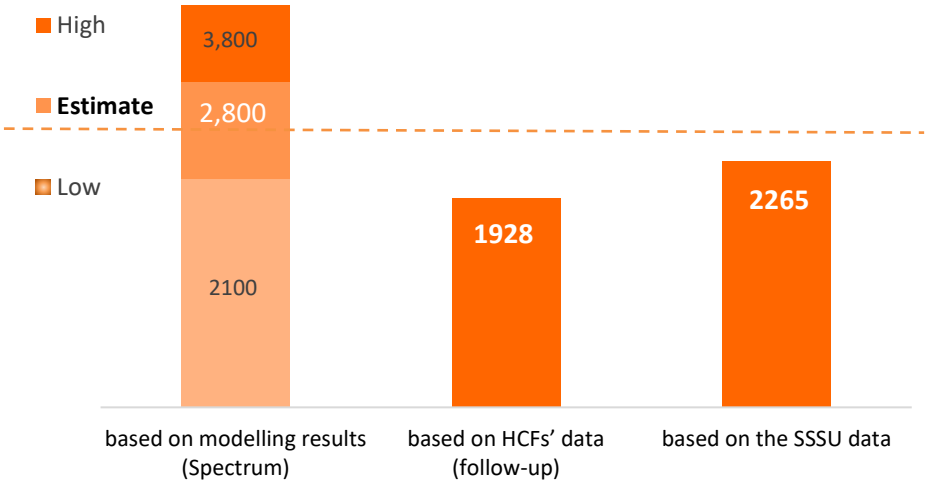
AIDS mortality rate in recent years in Ukraine shows a steady downward trend and amounts to 5.1 per 100,000 population — from the lowest rate in Zakarpattia oblast (0.6) to the highest rate in Odesa oblast (19.6) (**Fig. 34; Table 2.22; Annex 2**).

Figure 34: AIDS mortality per 100,000 population in Ukraine, 2021



The presented AIDS mortality rates are based on data received from HCFs performing registration of PLHIV. At the same time, the difference with the SSSU data has decreased from 28% to 15% as compared to 2020, but the gap in relation to the modelling result has increased. This is demonstrated by the example of evaluating data from different sources (**Fig. 35**).

Figure 35: Comparison of the estimated number of AIDS-related deaths and statistical data on registered AIDS-related deaths in 2021



3.4. New areas of improvement for surveillance

The modern HIV surveillance in Ukraine is a multicomponent system that employs various information resources and, as a whole, allows conducting integral evaluation of the epidemiological situation, the effectiveness of treatment and prevention programmes aimed at countering the HIV epidemic.

Within the framework of the SILab project (2016–2021) "Support to the HIV Surveillance System and Quality Management/Quality Improvement Laboratories System of the Ministry of Health of Ukraine, Improving the use of Strategic Information and Building Public Health Potential" implemented by the Public Health Center of the Ministry of Health of Ukraine and financed by the United States Centers for Disease Control and Prevention (CDC), within the framework of the United States President's Emergency Plan for AIDS Relief (PEPFAR), an assessment of the HIV surveillance system has been conducted and the harmonisation of the existing surveillance system with the international standards and national priorities in the area of countering HIV/AIDS was initiated based on the obtained results.

Based on the results of the conducted evaluation[18] and considering the willingness to achieve the Fast Track 95–95–95 targets, the key tasks of the reorganisation of the HIV surveillance system are the following[19]:

- introducing surveillance system for HIV cases based on established HIV-positive status (on the basis of verification testing) and creating a single electronic case-based registry (HIV case-based surveillance);
- defining effective methods of identification of KPs among HIV-positive persons;
- building up the routine surveillance of recent infection and HIV genotyping among the new HIV cases;
- improving the approaches to the registration of HIV-related deaths;
- strengthening the laboratory system capacity in the area of ensuring surveillance functions, in particular: optimization of laboratory HIV diagnostics and establishment of a reliable quality management system for HIV testing algorithms.

3.4.1. Case-based surveillance of HIV infection

HIV case-based surveillance (hereinafter — HIV CBS) is a component of surveillance, the measures of which are taken immediately and routinely for every new case of HIV infection by means of collecting data on the key (registered) events that are registered throughout the whole follow-up period of an HIV-positive person.

The HIV CBS system in Ukraine complies with the minimal obligatory list of registered events[20] in accordance with international guidelines[21], but the information value of the HIV CBS may grow significantly provided that it incorporates surveillance data on incidence, molecular surveillance and other components of HIV surveillance system. All case-based events should be traced within a single health information system.

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[18] https://phc.org.ua/sites/default/files/users/user90/Zvit_pro_rezultaty_otsinky_systemy_EN_2018.pdf

[19] https://phc.org.ua/sites/default/files/users/user90/The%20concept%20of%20the%20National%20Strategy%20for%20HIV%20Testing_UKR.pdf

[20] **The minimal list of HIV CBS events** provides for the registration of the following dates: the date of the first HIV-positive test → the date of placement under follow-up → the date of ART prescription → the date of receipt of the result of the first CD4 and/or VL test → the date of receipt of VL test result with an undetectable level (< 1,000 copies/ml) → the first date with CD4 count < 200 → the first date of AIDS indicator disease diagnosis → the date of death.

[21] https://cdn.who.int/media/docs/default-source/hq-hiv-hepatitis-and-stis-library/who_consolidated_guidelines_annexes_3.5.2.pdf?sfvrsn=2e9d30de_5

HIV incidence surveillance

The phased introduction of the routine surveillance of recent HIV cases was the first step towards HIV CBS improvement. Within the framework of surveillance, "recent HIV infection" means that the person acquired infection within the past year.

Based on recent infection cases, the ***HIV incidence*** (true incidence) is calculated, which is crucial for HIV epidemic control and assessment of the effectiveness of prevention programmes and requires a quick response of the healthcare system.

2019 was marked by the initiation of building the recent HIV infection surveillance system at HTS delivery points by using RTs for the detection of recent HIV infection (Asanté ™ HIV-1 Rapid Recency®) in adults newly diagnosed with HIV (hereinafter — the tests).

Testing for recent HIV infection (RTRI) is conducted at specialised HCFs providing HIV treatment services. According to the Recent HIV infection testing algorithm (RITA), VL testing shall be conducted for all recent infection cases detected when performing RTRI. Provided the detected VL is > 1,000 RNA copies/ml, the recent HIV case shall be considered verified. The RTRI and RITA results are related to demographical, behavioural data and access to services. All patients involved in the testing are offered index testing. The patient's refusal from any testing stage shall not have any impact on their access to HIV-related healthcare services.

At the preparatory stage, the protocol, the testing toolkit, and the collection of standard operating procedures were developed[22]; a number of trainings for testing site specialists were held, including trainings on the evaluation of recent HIV infection testing quality and conducting monitoring visits for the provision of mentoring support to testing sites; the "recent infection" module was developed within the SSD IS for data collection.

As of the beginning of 2021, 13 HTS sites in 3 PEPFAR regions — Dnipropetrovsk oblast, Odesa oblast and Kyiv city — were involved in HIV testing. Starting from October 2021, they were joined by 26 more HTS sites in the other 9 PEPFAR regions. In 2021, a total of 2,236 persons were tested for recent HIV infection (1,402 men and 834 women), of which the vast majority were represented by persons aged 30–39 (34%) and 40–49 (35%); 761 persons (34%) had risky behaviour, of which 612 PWID, 144 MSM and 5 SWs.

According to the previous RTRI-based results, 89 persons (4.0%) tested positive for recent infection. Based on RITA results, recent infection was finally established in 65 persons (2.9%). The percentage of persons with confirmed recent infection was higher:

- in men than in women (3.4% and 2.2% respectively);
- in the age group of 30–39 (3.0%);
- in MSM (6.3% (2.8% in PWID)).

The survey includes regular checks of recent infection testing quality including internal quality control, namely correct interpretation of presence or absence of control band when testing sets of control samples with known content of HIV serological markers, and external quality assessment, namely testing specimens with unknown characteristics with the aim of testing the staff's competence and the proper functioning of the test. All laboratory specialists using RTs for recent infection will be trained before testing patients' samples, will have their competence assessed during training and will receive regular refresher trainings in the future.

The use of recent HIV infection tests creates opportunities for the establishment of recent HIV infection surveillance and integration of this method to standard HIV testing services. The further

[22] https://phc.org.ua/sites/default/files/users/user90/SOPs_Recent_Infection_Surveillance_Ukraine.pdf

extension of recent HIV infection testing up to 54 HTS sites in all 12 PEPFAR regions is planned for 2022.

3.4.2. Surveillance of HIV-related deaths

The existing statistical data and results of conducted evaluations show that Ukraine has problems with the system for message organization and registration of deaths in HIV-positive persons[23][24]. Tracing of causes of death in diagnosed and non-diagnosed persons who were not linked to care is a part of surveillance and will require supervision on a larger scale.

In order to improve mortality surveillance at the local level, a survey entitled "Analysis of the HIV-Related Mortality Surveillance System and Hospital Surveillance of HIV-Associated Mortality in Ukraine" was held in Kyiv in 2021 in the framework of the SILab project (hereinafter — the Survey). ***The Survey was focused on measuring HIV positivity in deceased persons who were not diagnosed with HIV during their lives.***

Five healthcare facilities providing multidisciplinary inpatient care and emergency care and having pathology departments with a high load in terms of the number of autopsies were selected in Kyiv city to participate in the Survey, namely Kyiv City Clinical Emergency Hospital and Kyiv City Clinical Hospitals No. 3, No. 4, No. 5 and No. 8. During the preparatory phase of the Survey, the protocol, the Survey toolkit, the collection of standard operating procedures[25] defining the algorithm for establishing the HIV status of a deceased person, the data registration procedures and the organizational principles of the survey were developed.

HIV testing of all deceased adults aged 18 and older sequentially admitted to pathology departments of HCFs was performed by pathologists using RTs at the screening and verification phases. All HIV-positive samples and 10% of control negative samples were tested for VL. According to the results of the survey, the total number of persons in the sample was 1,513, of which 95% lived in Kyiv city at the time of death; 55% of the deceased were women, 65% — persons aged ≥ 65, 29% had a confirmed COVID-19 case.

According to HIV testing results, 39 (2.6%) of the deceased were HIV-positive, of which 54% were men, a half of them belonged to the age group of 40-44 and 45-49 (22% and 29% respectively) and 24% had a history of injecting drugs. As for the awareness of their HIV status, 32 of the deceased persons had their HIV-positive status established during the lifetime; all of them were registered in SSD IS; the other 7 persons were new HIV cases.

Thus, the Survey findings demonstrated that under the circumstances of the lack of efficient interaction and data exchange between health information system and vital registration system, conducting surveillance of HIV-related deaths at pathology departments may be viewed as a valuable alternative approach to finding new cases of deaths in HIV-positive people, considering the specificities of the clinical course and the postmortem laboratory diagnosis of HIV infection. Moreover, the Survey highlighted the necessity of strengthening the monitoring of HIV-positive persons who were under follow-up but did not receive HIV-related services due to various reasons and did not disclose their HIV-positive status at the time of death[26].

[23] https://phc.org.ua/sites/default/files/users/user90/Zvit_pro_rezultaty_otsinky_systemy_EN_2018.pdf
[24] https://aph.org.ua/wp-content/uploads/2020/10/Otsinka-smertnosti_2020_web.pdf
[25] https://phc.org.ua/sites/default/files/users/user90/SOPs_HIV_mortality_28.07.2021-final.pdf
[26] The final Survey findings will be presented in a separate analytical report.

3.4.3. Strengthening laboratory capacities in the area of HIV/AIDS

HIV/AIDS Reference Laboratory of the PHC of the MoH of Ukraine was accredited for compliance with the DSTU EN ISO 15189:2015 standard; the accreditation process took place in two phases: 2019 — accreditation for conducting immunological tests (HIV serology, CD4 lymphocyte count testing); 2021 — expanding the accreditation system with molecular and genetic testing methods (HIV-1 viral load testing and testing for mutations of HIV resistance to antiretroviral drugs). In order to strengthen the laboratory capacities, a manual entitled "National Guidance on the Implementation of the Quality Management System in Laboratories in Compliance with the DSTU EN ISO 15189:2015" and an online course on the topic were developed. Training courses on HIV testing using RTs and laboratory diagnosis using molecular methods were also developed for remote learning[27].

In order to improve the performance of the laboratory network and the quality of diagnostic tests in the area of HIV/AIDS, a ***SWOT analysis of the functioning of the network of HCFs*** involved in performing laboratory tests for HIV infection was conducted within the framework of the SILab project; based on the findings of the analysis, the National strategic plan for strengthening the capacity of laboratories performing HIV diagnosis in Ukraine was developed.

Table 3: Results of the implementation of the Programme for external quality assessment of laboratory tests in Ukraine (2018–2021)

	2018	2019	2020	2021
HIV serological markers testing using instrumental methods				
Number of laboratories	98	98	94	94
Degree of precision (%)	**98.1**	**98.98**	**99.5**	**99.4**
HIV serological markers testing using RTs				
Number of laboratories	28	28	28	28
Degree of precision (%)	**100.0**	**100.0**	**100.0**	**100.0**
CD4 lymphocyte count testing				
Number of laboratories	25	28	28	26
Degree of precision (%)	**92.0**	**92.8**	**92.9**	**96.2**
HIV-1 viral load testing				
Number of laboratories			17	22
Degree of precision (%)			**99.01**	**98.48**

The HIV/AIDS Reference Laboratory of the PHC of the MoH of Ukraine introduced an ***external quality assessment (hereinafter — EQA) programme***. Overall, 14 assessment rounds have taken place since 2018 (**Table 3**).

In 2021, a programme for EQA of HIV serological markers laboratory testing using RTs was introduced at the regional level (**Table 4**). In order to improve the quality of HIV testing services using RTs and laboratory services of HIV infection treatment efficacy monitoring, 549 HTS sites were assessed using the SPI-RRT Checklist (performance level from 16% to 98%) and 10 laboratories were evaluated using the Viral Load and Infant Virological Testing Scorecard checklist (performance level

[27] For more details, see: https://portal.phc.org.ua/en/view_all_courses/

from 35% to 88%); based on the assessment results, plans for the improvement of service delivery quality were developed.

Table 4: Findings of the EQA of HIV serological markers laboratory testing using RTs (2021)

Region	Number of participants	Degree of precision (%)
Ukraine	1,570	**99.12**
Dnipropetrovsk oblast	396	**97.09**
Dnipropetrovsk oblast (Kryvyi Rih town)	198	**99.27**
Donetsk oblast (Mariupol town)	37	**100.0**
Donetsk oblast (Sloviansk town)	37	**100.0**
Zaporizhzhia oblast	85	**100.0**
Kyiv oblast	71	**99.0**
Kirovohrad oblast	50	**100.0**
Kyiv city	170	**100.0**
Mykolaiv city	107	**100.0**
Odesa oblast	106	**100.0**
Kherson oblast	99	**96.9**
Cherkasy oblast	80	**96.29**

Section IV. KEY POPULATIONS IN THE CONTEXT OF HIV EPIDEMIC

There are key populations in every region of the world that are particularly vulnerable to HIV infection. MSM, PWID, SWs, transgender women and people in prisons and other closed settings have a significantly higher risk of HIV infection than the general population. Overall, KPs and their sexual partners accounted for 62% of all new infection cases in the world in 2019 (**Fig. 36**).

Prevention of HIV acquisition in KPs is an important component of countering HIV/AIDS in Ukraine. This area includes a wide range of services, from large-scale harm reduction programmes and HIV testing services to prevention and diagnosis of viral hepatitis, STI, TB, etc. Over the past 15 years, a powerful network of NGOs providing HIV services emerged in Ukraine; these NGOs provide comprehensive prevention services to KPs in cooperation with HCFs.

4.1. Transition of HIV-related services to State funding

Figure 36: Relative risk of HIV acquisition, Global, 2019[28]

[28] https://www.unaids.org/sites/default/files/media_asset/global-commitments-local-action_en.pdf

Ukraine became one of the first countries in the EUCA region with successful experience of fulfilling its obligations regarding the implementation of transition of HIV-related services to State funding. The transition was implemented in 2017–2019 in cooperation with all stakeholders. A predictable outcome of the process was the creation of the mechanism for ensuring funding sustainability of the abovementioned services, as well as the creation of a unified and transparent mechanism for using public funds within the framework of implementation of active interventions in the area of control over diseases with the most negative social, demographic and economic impact.

In 2021, the Order of the MoH of Ukraine 08.06.2015 No. 325 "On Approval of the State Sanitary and Anti-Epidemic Rules and Norms on Medical Waste Management" was amended as regards the disposal of accumulated syringes and used test systems as a result of the implementation of harm reduction programmes. Based on the amendments, organizations conducting activity in the area of countering the spread of HIV on a legal basis may collect and store dangerous waste for its further handover to HCFs for disposal. The amendments to the Order enter into force on 1 October 2022.

UAH 135.34 million	**256,047**
allocated for purchasing prevention services for the purposes of service coverage	KP representatives received State-funded prevention services
UAH 72.15 million	**31,752**
allocated for purchasing care and support services for the purposes of service coverage for 31,752 PLHIV	people living with HIV received State-funded care and support services

In 2021, pursuant to the approved budget programme "Public Health and Measures to Combat Epidemics", the State allocated UAH 207.49 million for HIV prevention services and care and support services. During the period from April to December 2021, the Public Health Center of the MoH of Ukraine SI concluded 92 Contracts with service providers (67 Contracts in the prevention area and 25 Contracts in the care and support area) in 24 regions and Kyiv city.

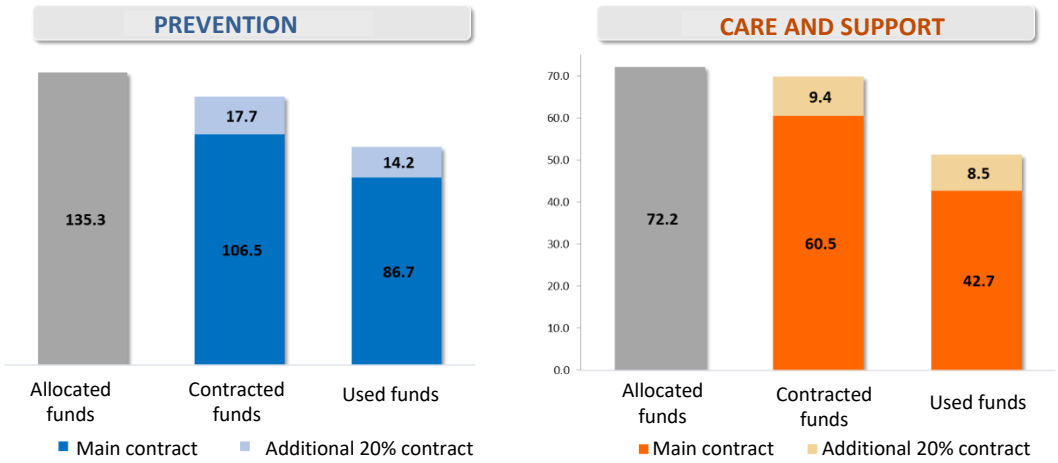
29 service providers were contracted ***in the area of prevention*** and 22 providers were contracted in the area of care and support (including provisions of services in two areas by one organization). Thus, the continuity of provision of services funded from the State budget was ensured without using additional funds. The recipients of HIV prevention services include men who have sex with men, commercial sex workers and people who inject drugs. The prevention services for which State funding is provided include the following:

- providing targeted information, education and communication services on HIV acquisition and harm reduction;
- distribution of condoms and lubricants;
- syringe exchange and distribution;
- HIV testing;
- tuberculosis screening.

The care and support services for people living with HIV include the following:

- engaging the partners of PLHIV to providing HIV-related healthcare services;
- building adherence to HIV treatment in PLHIV;
- engaging HIV-positive PWID into receiving HIV-related medical care and building adherence to treatment.

Figure 37: State funding of HIV prevention services in KPs and PLHIV care and support services, 2021 (UAH million)



The primary recipients of HIV-related care and support services are PLHIV receiving ART or preparing for ART initiation and their sexual partners who do not know their HIV status. The total amount of costs in 2021 was UAH 152.03 million, of which UAH 100.88 million in the prevention area and UAH 51.15 million in the care and support area (**Fig. 37**). Overall, this is 9% higher than the amount of costs in the previous year (UAH 140.09 million).

Table 5: Planned coverage with HIV prevention services in KPs and PLHIV care and support services, 2021

	Planned coverage	Actual coverage	Implementation of the plan (%)
Prevention in KPs			
PWID	183,818	164,717	**90**
SWs	46,451	41,636	**90**
MSM	41,588	37,808	**91**
PLHIV care and support			
Building adherence to treatment in PLHIV	32,305	29,095	**87**
Building adherence to treatment in PLHIV/PWID	4,703	3,625	**77**

In order to further improve the quality and effectiveness of State-funded services delivery in the context of HIV infection, the Public Health Center of the MoH of Ukraine SI signed a memorandum on cooperation with the Coordination Centre for Free Legal Aid to create conditions for unimpeded access of the representatives of at-risk populations, who are beneficiaries of the services, to free legal aid.

At the end of 2021, a survey entitled "Assessment of Service Quality among Clients of Prevention and C&S Programmes" was launched aiming at detecting the barriers and drivers influencing the quality of provided services. Publication of the findings of the survey and the report on the findings is planned for the middle of 2022. The process of tariff revision of State-funded services has been initiated.

4.2. Community-based prevention programmes

A wide network of community-based organizations has been involved in the implementation of prevention programmes in KPs in Ukraine. The minimal package of prevention services for PWID includes a syringe and/or a needle, a condom a consultation with a specialists; for SWs, MSM and TP the package includes a condom and a consultation with a specialist if required. Within the framework of KP-oriented programmes implemented by NGOs with the support of the Alliance for Public Health ICF and 100% Life All-Ukrainian Charitable Organization, much effort has been made regarding HIV infection detection and case management service provision for the initiation of ART.

Further expansion of universal access to NGO-based HTS in KPs is performed. According to Alliance for Public Health and 100% Life CO, in 2021, 795,333 persons were tested using RTs within the framework of implementation of prevention programmes, of which 19,741 received a positive result. At the same time, testing performance increased from 1.6% to 2.5%. Moreover, 116.9 thousand self-test kits were procured to be used by KPs representatives in the field within the framework of HIV/AIDS prevention projects. 40,454 kits were distributed during the year.

4.2.1. People who inject drugs

The harm reduction programmes remain one of the most important factors influencing HIV prevention in PWID and their sexual partners aimed at reducing the adverse health impact and the social and economic harm related to drug use without demanding that the persons stop using drugs[29].

350,300	20.3%
persons — estimated number of PWID in Ukraine (relevant since 2018)	HIV prevalence in PWID based on the findings of the Integrated biobehavioural survey (2020)[30]

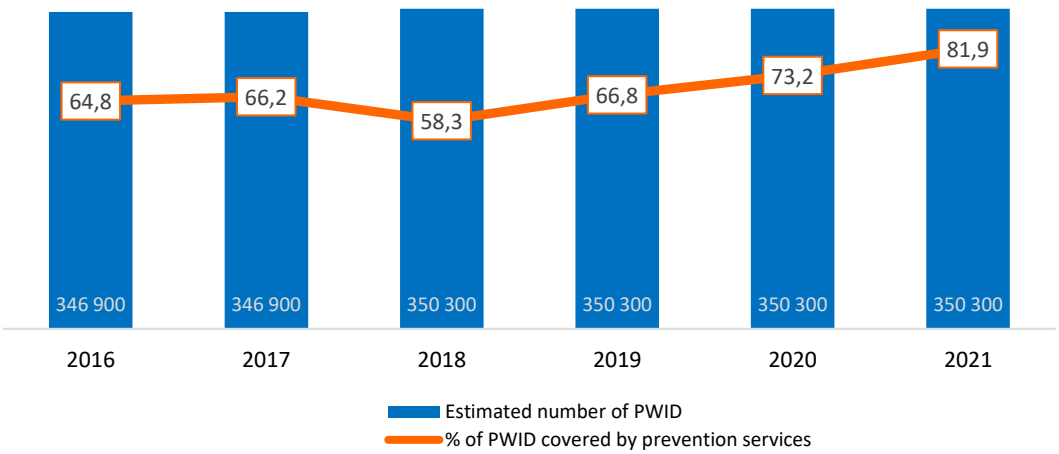
Due to the implementation of prevention programmes, HIV prevalence in PWID decreased from 22.6% to 20.3% (IBBS 2017; 2020). According to IBBS results (2020), percentage of PWID who were tested for HIV in the past 12 months, or who know that they are living with HIV rose from 43.1% to 51%. The percentage of PWID living with HIV and receiving ART in the past 12 months is 86.2%.

During 2021, prevention services for PWID were provided in 2,024 NGO-based service points. The clients received sterile injection products (primary and secondary syringe exchange), condoms and alcohol wipes, as well as counselling, HIV and hepatitis C testing and tuberculosis early detection services. The services were provided at fixed points, on outreach routes, at mobile clinics and pharmacies. In 2021, a total of 286,940 PWID were covered by prevention services, which is 81.9% of the estimated number of PWID population in Ukraine (**Fig. 38**).

[29] https://www.hri.global/files/2018/09/25/lost-decade-harm-reduction-funding-2018.PDF

[30] https://www.phc.org.ua/sites/default/files/users/user90/Results%20of%20IBBS_PWID%202020_ukr_online.pdf

Figure 38: Coverage of PWID with prevention programmes in Ukraine, 2016–2021



Within the framework of the programme for needle and syringe exchange and distribution (SEP), 17.7 million sterile needles and syringes were distributed among PWID (51 per one person) in order to lower the risk of HIV and viral hepatitis acquisition. This is the lowest rate over the past 5 years.

The programme for substitution maintenance therapy (hereinafter — SMT) has proved its effectiveness for reducing injecting drug use and may help lower the risk of HIV transmission, improve access and adherence to ART for HIV-positive PWID, reduce the number of overdose cases and related deaths, decrease criminal activity and lead to overall improvements of physical and mental health. Since 1 April 2020, the SMT programme was included in the State Programme of Medical Guarantees as a service called "Treatment of Persons with Mental and Behavioural Disorders due to Opioid Use with Substitution Maintenance Therapy".

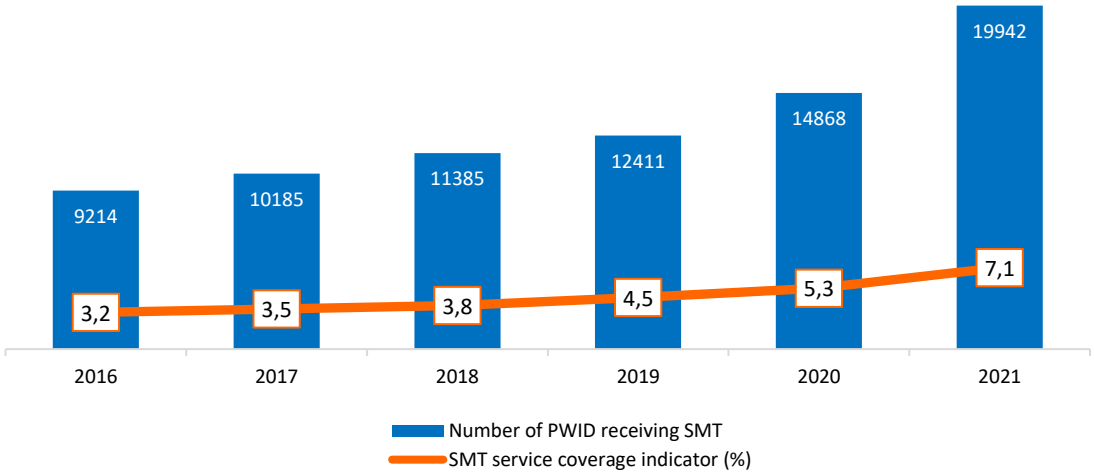
During 2021, the SMT programme was developed at the regional level in accordance with the approved national targets for the coverage of persons with mental and behavioural disorders due to opioid use with SMT (hereinafter — the Targets). The 2021 Target, approved at the meeting of the Programme Committee of the National Council for Tuberculosis and HIV/AIDS envisages SMT coverage for 20,596 persons. Progress towards achieving the 2021 Target is 82.7%.

As of 01.01.2022, a total of 19,942 persons with mental and behavioural disorders due to opioid use received SMT, of which 17,043 persons (85.5%) — at state-owned HCFs (**Table 2.23-a; Annex 2**). 2,782 persons (14%) received SMT at non-governmental facilities and 117 persons (0.5%) — at other facilities (**Table 2.23-б; Annex 2**).

As for the structure of prescribed drugs, most patients (14,897 persons (87.4%)) receive methadone hydrochloride tablets, 2,065 persons (12.1%) receive buprenorphine hydrochloride tablets and 81 persons (0.48%) receive methadone hydrochloride (oral solution).

The number of new patients engaged in SMT treatment in the second half of 2021 was 3,188 persons. The SMT coverage rate of the estimated number of PWID who use opioids, rose to 7.1% in 2021 (**Fig. 39**).

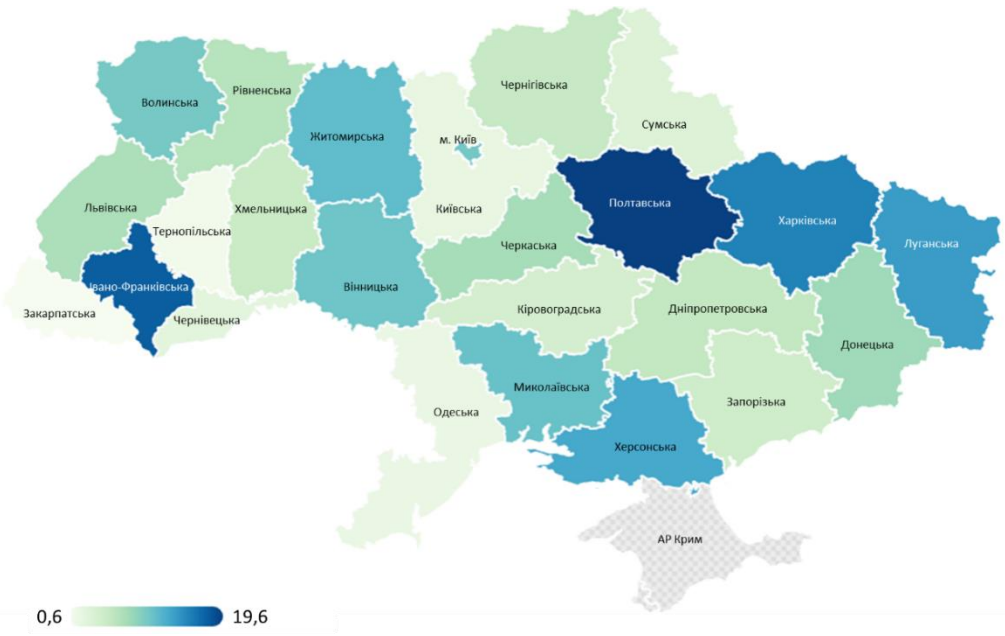
Figure 39: Number and percentage of PWID receiving SMT services in Ukraine, 2016–2021



Among patients on SMT receiving treatment as of the end of 2021, 35.2% were HIV positive. The percentage of PLHIV of the total number of patients on SMT who received ART was 95.6%.

In most regions, ART coverage is at least 90%, a 95% ART coverage level is achieved in 13 regions of Ukraine. The lowest coverage rate (85%) was observed in Volyn, Lviv and Khmelnytskyi oblasts (**Fig. 40**).

Figure 40: SMT services coverage of PWID in Ukraine (% of the estimated number of PWID using opioids), 2021



In addition to the changes in the SMT services volume, the last 3 years were characterised by significant changes within the service sector with the expansion of possibilities to receive such services.

The trends of the ***practice of dispensing SMT drugs to patients for independent administration*** outside healthcare facilities that was significantly expanded in the previous periods due to COVID-19 response, remained unchanged in 2021. As of the end of the year, the number of persons receiving SMT drugs for independent administration outside healthcare facilities was 14,392 persons (84.4%). The highest rates are registered in Kyiv (98%) Mykolaiv (97.2%) and Ternopil (94%) oblasts.

In 2021, ***private healthcare centres*** started providing medical care using SMT drugs in accordance with the Procedure for performing SMT. The total number of private healthcare facilities as of 31.12.2021 was 19 in 6 the regions of Ukraine; 2,782 persons received SMT as of the end of the year.

Starting from December 2019, ***SMT services became available for prisoners and people in custody.*** The actual start of the implementation of the programme for comprehensive treatment using SMT drugs took place in Bucha Multidisciplinary Hospital No. 85 of the branch of the Health Centre of the SCES of Ukraine in Kyiv city and Kyiv oblast. Over 2020 and 2021, within the framework of the continued initiative of the Ministry of Justice of Ukraine and the Health Centre of the SCES of Ukraine, the provision of the service was launched and nowadays the programme is implemented in 7 healthcare facilities of the Health Centre of the SCES of Ukraine; in 7 more SCES facilities access to SMT is ensured for persons with mental and behavioural disorders due to opioid use among prisoners and persons in custody.

A total of 372 persons received SMT in the facilities of the SCES of Ukraine in 2021, of which 170 persons were provided with drugs from the Health Centre of the SCES of Ukraine and 202 were provided with drugs from the MoH of Ukraine. HIV-positive people are a priority group for SMT prescription. The abovementioned healthcare facilities of the Health Centre of the SCES of Ukraine make ongoing efforts aimed at increasing the number of participants of the SMT programme, creating motivation to change and building adherence to treatment of both the main disease and comorbidities. To ensure the continuity of receiving SMT by prisoners and persons in custody, the Health Centre of the SCES of Ukraine approved the Order of 22 October 2021 No. 308-ОД "On Improving the Organizational Activities of the Health Centre of the SCES of Ukraine Related to Ensuring the Continuity of Conducting Substitution Maintenance Therapy".

4.2.2. Men who have sex with men

Gays and other men who have sex with men are disproportionally vulnerable in the context of the HIV epidemic and have a 26 times higher risk of acquiring HIV than other adult men[31].

179,400	3.9%
persons — estimated number of MSM in Ukraine (relevant since 2018)[32]	HIV prevalence in MSM based on the findings of the Integrated biobehavioural survey (2021)

Based on the results of the IBBS (2021), HIV prevalence in MSM decreased from 7.5% to 3.9% as compared to 2017. At the same time, as earlier, HIV prevalence in MSM over 25 is higher than in MSM under 25: 5.4% and 1.6% respectively. The percentage of MSM who were tested for HIV in the

[31] https://www.unaids.org/sites/default/files/media_asset/03-hiv-human-rights-factsheet-gay-men_ru.pdf.
[32] http://aph.org.ua/wp-content/uploads/2019/06/Otsinka-chiselnosti_32200.pdf

past 12 months or who know that they are living with HIV rose from 39.2% to 72% as compared with 2017. The percentage of MSM living with HIV and receiving ART in the past 12 months is 55.4%.

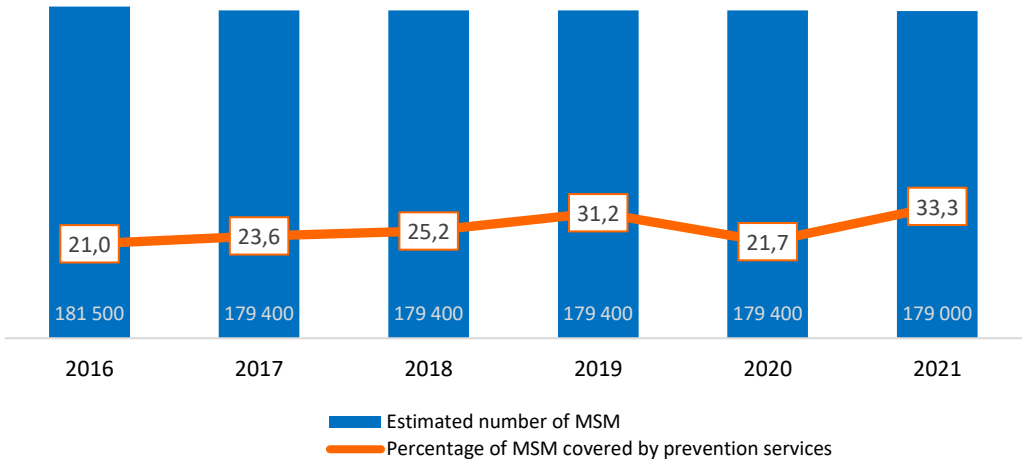
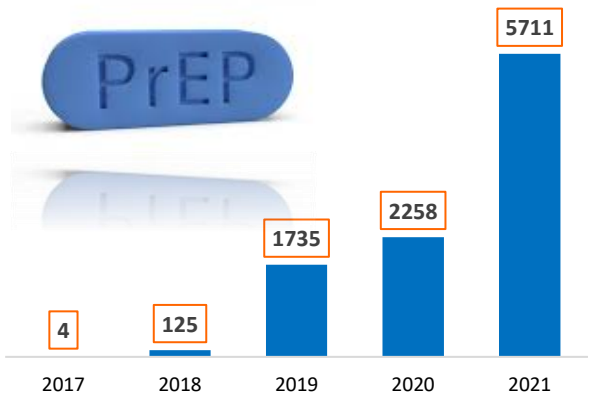


Figure 41: MSM coverage with prevention programmes in Ukraine, 2016–2021

According to the data by the Alliance for Public Health ICF and 100% Life, the number of MSM who received prevention services rose by 15% in comparison with the previous year and amounted to 59,818 persons. Thus, a third of the estimated MSM number was covered with prevention (**Fig. 41**). Within the framework of providing MSM with the basic package of services, 2.6 million condoms and lubricants were distributed in 2021.

Pre-exposure prophylaxis of HIV (hereinafter — PrEP) is one of the progressive strategies that proved to be effective as a prevention method complementary to barrier contraception. PrEP prescription is targeted at KP representatives, including partners of people living with HIV, men who have sex with men, commercial sex workers and persons who inject drugs.

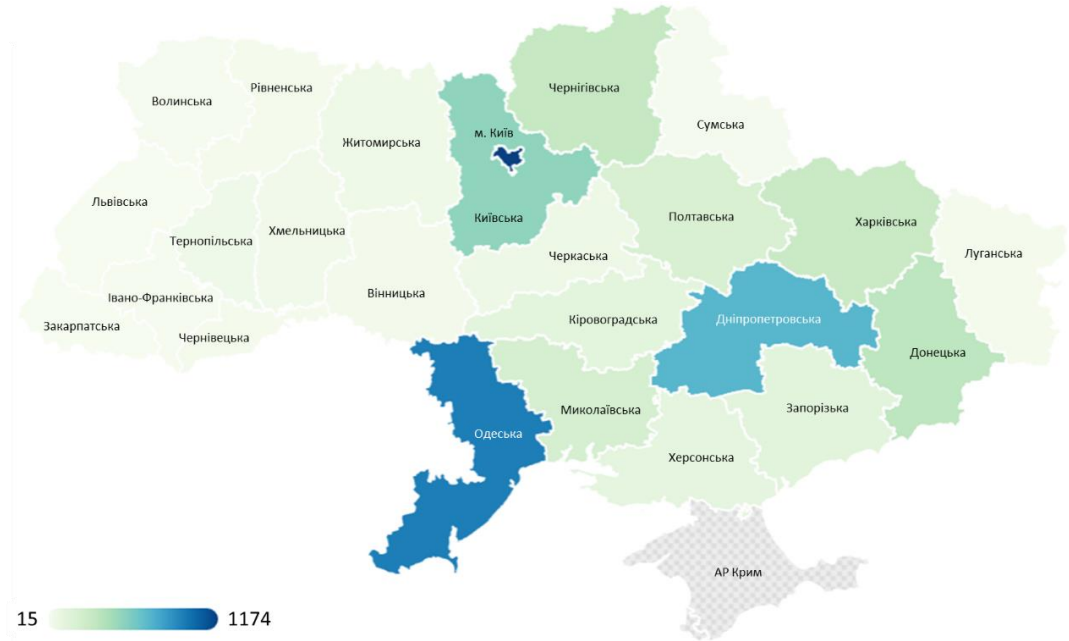
Figure 42: PrEP expansion in Ukraine (2017–2021)



PrEP introduction in Ukraine started in 2017 as a pilot project in MSM in Kyiv city supported by Centers for Disease Control and Prevention of the United States in accordance with the US President's Emergency Plan for AIDS Response (PEPFAR) conducted in cooperation with the ALLIANCE.GLOBAL NGO. Over the five years, the PrEP geography extended from the capital to all regions, and the number of people receiving PrEP increased from 4 MSM in Kyiv city to 5,711 people (**Fig. 42**)

At the moment, PrEP has a significant potential for implementation in Ukraine, since a large proportion of MSM are willing to take PrEP and agree with its conditions. The social characteristics of the participants of the programme have also changed. Although most of them (42%) are representatives of the MSM population, as of the end of 2021, 828 PWID, 144 SWs, 4 TP and 2,346 persons belonging to other populations received PrEP at least once during the year. Men receive PrEP more frequently than women and account for 72% of the total number. In 2021, the largest expansion of the PrEP programme took place. 4,794 persons received PrEP for the first time in their lives. The largest number of persons receiving PrEP is registered in Kyiv city, which accounted for a fifth of all persons receiving PrEP in the past year, and Odesa oblast (**Fig. 43**).

Figure 43: PrEP programme expansion in Ukraine (number of people who received PrEP in 2021).



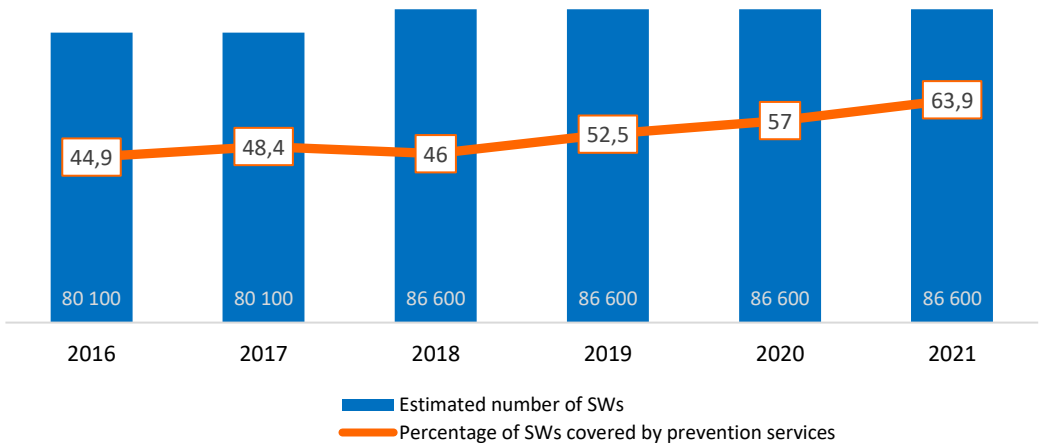
4.2.3. Commercial sex workers

Introduction of prevention programmes in SWs had a significant impact on HIV prevalence in this KP. According to the findings of the latest Integrated biobehavioural survey (2021), HIV prevalence in SWs shows a steady downward trend. Within the framework of NGO project activities, each client of the harm reduction programme was offered a basic package of services (consultations, condoms, lubricants, HIV and syphilis testing, early detection of tuberculosis).

86,600	3.1%
persons — estimated number of SWs in Ukraine (relevant since 2018)[33]	HIV prevalence in SWs based on the results of the Integrated biobehavioural survey (2021)

Based on the results of the most recent IBBS round (2021), HIV infection prevalence in SWs retains a downward trend and amounts to 3.1%, with a prevalence in men being slightly higher (3.8%). Same as before, significant age-based differences were detected. Thus, HIV prevalence reaches the level of 4.1% in persons aged 25 and above (5.2% in 2017), as compared to 0.7% in SWs under 25 (1.3% in 2017). The percentage of SWs who were tested for HIV in the past 12 months or who know that they are living with HIV rose from 58.2% to 64.2% as compared with 2017. A positive fact is that the percentage of SWs reporting using a condom with their most recent client remains high and amounts to 92.2%. The percentage of SWs living with HIV and receiving ART in the past 12 months is 78%.

Figure 44: Coverage of SWs with prevention programmes in Ukraine, 2016–2021



In 2021, 55.3 thousand SWs were covered with prevention at 929 service points, which is 11% more that in the previous year despite the COVID-19 pandemic and amounts to 63.8% of the estimated number of the SW population in Ukraine (**Fig. 44**). In particular, 6.7 million condoms and lubricants were distributed within the framework of providing SWs with a basic service package in 2021.

[33] http://aph.org.ua/wp-content/uploads/2019/06/Otsinka-chiselnosti_32200.pdf

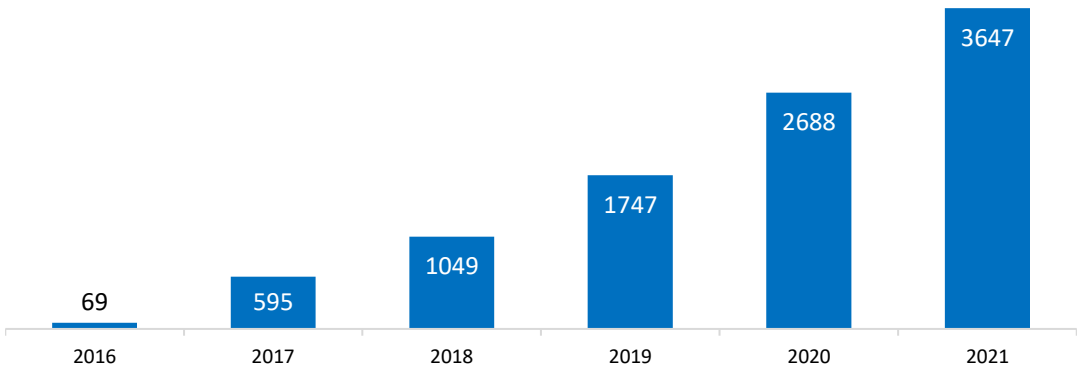
4.2.4. Transgender people

Transgender people (hereinafter — TP) are a social group included into the list of five key populations that are particularly vulnerable to HIV but frequently do not receive proper access to required services[3435]. Based on conservative estimates, the number of transgender people in Ukraine (excluding the territories of the Autonomous Republic of Crimea and the territories where the anti-terroristic operation is conducted) amounts to 8,200 (interval 3,400–14,000)[36].

8,200	1.7%
persons — the estimated number of TP in Ukraine (2020)	HIV prevalence in TP based on the findings of the Integrated biobehavioural survey (2020)

According to international experts, although TP have a 13 times higher risk of HIV acquisition than other adults, the level of access to HIV-related services for TP is lower than for the rest of the population[37]. Every year the number of TP receiving prevention services in the context of HIV infection in Ukraine rises (**Fig. 45**). In 2021, within the framework of NGO project activity, 49 sites provided the following prevention services for TP with the support of the Alliance for Public Health ICF: distribution of condoms and lubricants, counselling of social workers and healthcare specialists, assisted HIV, syphilis and hepatitis C testing and early detection of tuberculosis.

Figure 45: Number of TP who received prevention services in Ukraine, 2016–2021



Based on IBBS findings (2020), 21% of 873 surveyed transgender women and 15% of 100 surveyed transgender men reported being clients of NGOs providing HIV prevention services[38]. More than a half of TP in all cities where the survey was conducted reported receiving HTS. Based on the conducted survey, it was established that HIV prevalence in TP is low (1.7%); in particular, no HIV-positive results were detected in transgender men, and in transgender women the rate was 1.9%. The percentage of TP living with HIV and receiving ART in the past 12 months is 41.2%.

[34] ЮНЭЙДС (2019), Информационный бюллетень – Глобальная статистика по ВИЧ, Женева: ЮНЭЙДС.
[35] https://www.unaids.org/en/resources/documents/2022/in-danger-global-aids-update-summary
[36] https://www.researchgate.net/publication/348325740_Analiticnij_zvit_OCINKA_CISELNOSTI_TRANSGENDERNIH_LUDEJ_V_UKRAINI
[37] https://www.unaids.org/ru/resources/documents/2021/04-hiv-human-rights-factsheet-transgender-gender-diverse
[38] https://phc.org.ua/sites/default/files/users/user90/trans-IBBS-Ukraine_2020_all.pdf

4.2.5. Prisoners

Based on the data by the Health Centre of the SCES of Ukraine, there were 46,931 residents of the facilities of the penitentiary system as of the end of 2021. Practically all prisoners with relevant indications are tested for HIV and have a high level of awareness of their HIV status. The area of prevention in the facilities of the SCES of Ukraine is gradually developing. In 2021, 1.03 million condoms and lubricants were distributed among prisoners and persons in custody. Starting from the end of 2019, SMT services became available (for more details, see the previous section of this document).

46,931	8.5%
persons — number of prisoners and persons in custody in Ukraine as of the end of 2021	HIV prevalence in prisoners and persons in custody (2021)

Overall, more than 83.4 prisoners and convicts received HTS during 2021 (taking into account transfers). 604 persons were newly diagnosed with HIV. HIV infection prevalence in 2021, taking into account the detected persons and those who already knew their HIV-positive status, was 8.5% (8% in 2020). Constant control of ART coverage of persons newly diagnosed with HIV (at least 90%) is established at HCFs of the Health Centre of the SCES of Ukraine. As of 01.01.2022, 3,993 PLHIV were linked to care (3,620 men and 373 women), of which 3,808 persons received ART (95.4%). The ART coverage rate at the facilities of the penitentiary system shows an upward trend: 2020 — 92.0%; 2019 — 87.4%. In 2021, according to VL testing results in 5,679 HIV-infected persons receiving ART for more than 6 months, 4,646 persons were virally suppressed (82%).

Section V. PROGRESS TOWARDS ELIMINATION OF MOTHER-TO-CHILD TRANSMISSION OF HIV AND SYPHILIS

The global community has undertaken to achieve "triple" elimination of mother-to-child transmission (hereinafter — EMTCT) of HIV, congenital syphilis and viral hepatitis B as a priority task for the public health system. In line with preparation to EMTCT validation, Ukraine has achieved target validation rates concerning HIV infection and strives to achieve target validation rates on its way to EMTCT of congenital syphilis (**Table 6**).

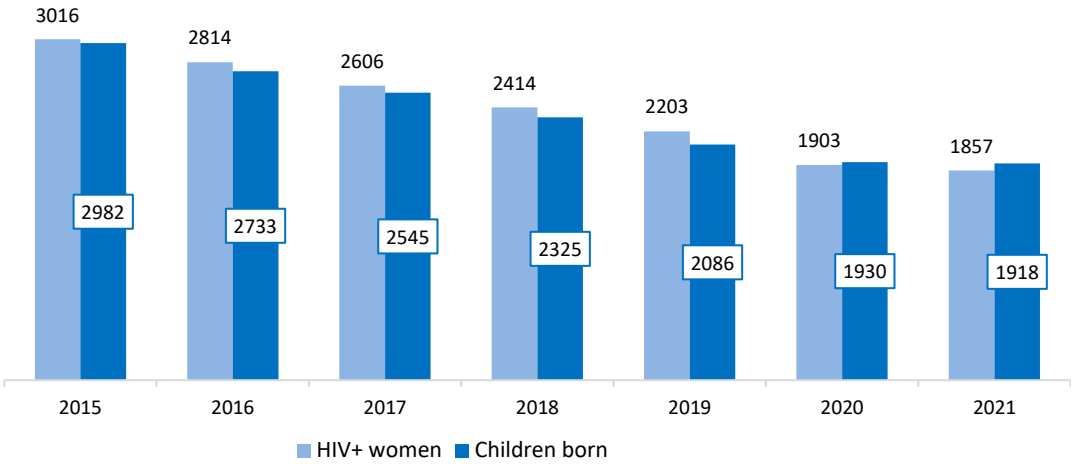
Table 6: Obligatory indicators for validation of elimination of mother-to-child transmission of HIV in Ukraine, 2020–2021

Indicators for EMTCT validation and their target values	Target	2020	2021
Mother-to-child transmission of HIV			
1. Rate of mother-to-child transmission of HIV in non-breastfeeding populations (%, based on PCR data)	< 2%	1.3	1.3
2. Number of new HIV cases due to MTCT (per 100,000 live births)	≤ 50	8.5	8.8
3. Antenatal care coverage of pregnant women (at least one visit), %	≥ 95%;	99.8	99.7
4. Coverage of pregnant women with HIV testing (%)	≥ 95%	99.1	98.7
5. ART coverage in pregnant women (%)	≥ 95%	95.9	95.7
Mother-to-child transmission of syphilis			
1. Number of new cases of congenital syphilis due to MTCT per 100,000 live births	≤ 50	0.7 (2 cases)	0.4 (1 case)
2. Antenatal care coverage of pregnant women (at least one visit), %	≥ 95%	99.8	99.7
3. Coverage of syphilis markers testing of pregnant women (%)	≥ 95%;	92.8	95.4
4. Treatment coverage of syphilis-seropositive pregnant women (%)	≥ 90%	100 (226 pregnant women)	100 (165 pregnant women)

In order to coordinate mother-to-child transmission of HIV (hereinafter — PMTCT) prevention measures, an appropriate ***regulatory and legal framework*** was created in the country and its provisions are implemented as follows:

- The Order of the MoH of Ukraine of 06.09.2021 No. 1887 "On the Implementation of Measures for the Elimination of Mother-to-Child Transmission of HIV" defines the PHC of the MoH as the body performing organizational and methodological management of EMTCT measures and determines coordination measures at the regional level;
- In order to prevent HIV infection in new-borns, protect the health of HIV-positive mothers and their children, medical and technological documents, namely the evidence-based Clinical guideline and Standards of Care "Prevention of Mother-to-Child Transmission of HIV" were developed and approved by the Order of the MoH of Ukraine of 26.04.2022 No. 692.

Figure 46: Annual number of registered HIV-positive pregnant women and HIV-exposed children in Ukraine, 2016-2021[39]



5.1. Implementation of PMTCT actions in 2021

(Tables 2.24–2.30 in Annex 2)

The vast majority of children aged 0-18 linked to care at HCFs conducting follow-up of PLHIV are children born to HIV-positive mothers (98.8%). As of 01.01.2022, 7,632 children born to HIV-positive mothers were linked to care, of which 3,413 children with confirmed diagnosis of HIV infection (including 1,051 children with AIDS) and 4,219 children with unknown HIV status.

In 2021, 1,977 children born to HIV-positive mothers were linked to care, 28 new cases of AIDS in children were registered, 1,863 children were deregistered due to the absence of HIV infection and 34 children — due to death. Among those children who died, 10 deaths were related to HIV infection.

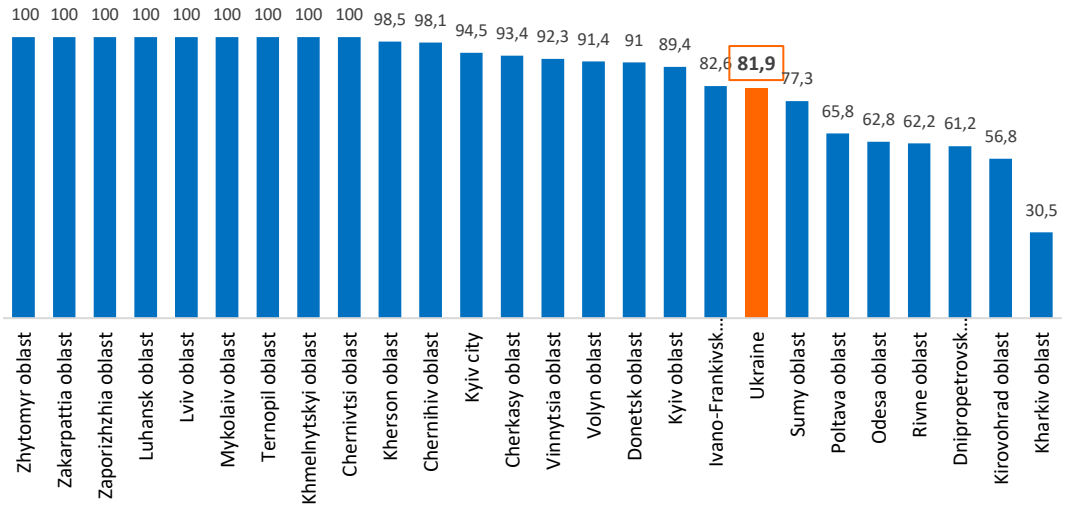
Based on the data of the monitoring of PMTCT measures in Ukraine, the following trends are observed:

- The number of HIV-positive pregnant women is decreasing annually; at the same time, almost 100% of pregnant women are covered with HIV testing services. In 2019, 2,203 HIV-positive pregnant women were registered (1,903 in 2020, 1,857 in 2021). The proportion of women who were newly diagnosed with HIV during pregnancy was 32%.
- Throughout 2021, there were 1,904 pregnancies which ended in delivery (1,916 in 2020, 2,083 in 2019), and 106 pregnancies which ended in abortion (130 in 2020, 141 in 2019) in HIV-positive women.
- Of women who learned about their HIV-positive status during pregnancy and childbirth, HIV diagnosis was established in the first trimester of pregnancy for 28.7%, in the second trimester for 44.0%, in the third trimester for 20.9% and during childbirth for 6.4%. That is, 27.3% women did not receive the PMTCT healthcare service package and consecutively had a high risk of infecting their child with HIV.

[39] Specified number of live births

- As a result of the effective engagement and retention of HIV-positive pregnant women on ART, 95.7% of the pregnant women received ART in 2021, (95.9% in 2020, 95.6% in 2019). The number of women who continued ART after delivery reached 94.0%.
- In 2021, 40.0% HIV-positive pregnant women gave birth to children through planned caesarean section (39% in 2020, 37% in 2019). 52.2% of HIV-positive pregnant women were admitted to an obstetric hospital before labour (57% in 2020, 52% in 2019).
- Almost all HIV-exposed children (99%) receive antiretroviral prophylaxis and are exclusively on formula feeding. In 2021, 73% of the children received milk formulas purchased with the local budget funds (76% in 2020, 79% in 2019).
- The level of coverage of HIV-exposed children with early diagnosis up to 2020 demonstrated an upward trend, rising from 80.8% in 2018 to 96.1% in 2020; however, in 2021, the rate decreased to 87.4%. After introduction of dried blood spot testing in 2016, the early diagnosis coverage rate in children under 2 months also showed a significant improvement, rising from 60.9% in 2018 to 87.3% in 2020; nevertheless, in 2021 it fell to 81.9% (**Fig. 47**).

Figure 47: Percentage of children born to HIV-positive mothers who were tested with virological HIV tests in the first 2 months after birth in the regions of Ukraine in 2021 (GAM indicator 2.1)

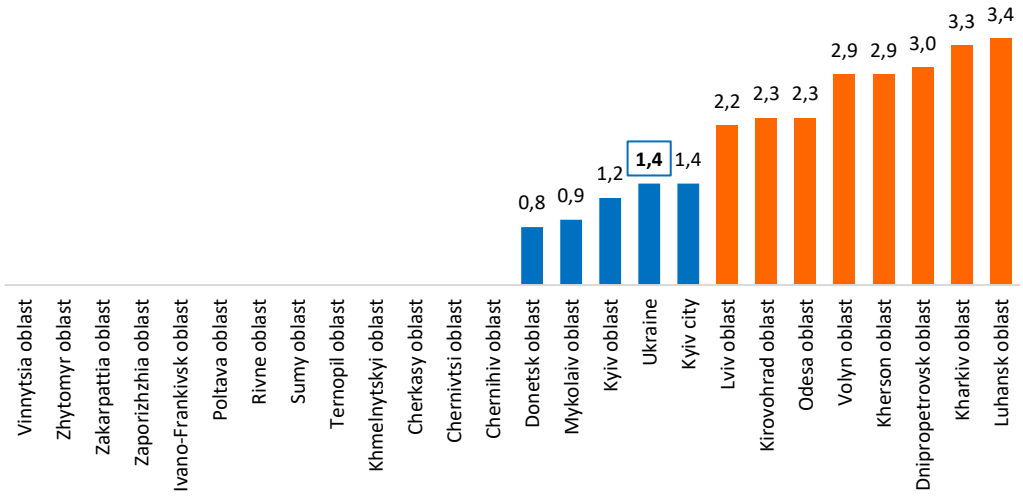


5.2. Rate of mother-to-child transmission of HIV in 2021

Based on the data of HIV diagnosis in new-borns, the rate of mother-to-child transmission of HIV (MTCT rate) decreased from 2.6% in 2016 (57 children) to 1.3% (24 children) in 2021. Almost all regions reached the target for EMTCT validation (2–0%)[40], except for Luhansk (3.4%), Dnipropetrovsk (3.0%), Volyn (2.9%), Kherson (2.9%), Kirovohrad (2.3%), Mykolaiv (2.3%), Odesa (2.3%), Kharkiv (2.3%) and Lviv (2.2%) oblasts (**Fig. 48**).

[40] The target is defined by the WHO and the National Strategy on HIV/AIDS, Tuberculosis and Virus Hepatitis for the period until 2030.

Figure 48: The rate of mother-to-child transmission of HIV, according to early diagnosis of HIV infection (%), 2021 (GAM indicator 2.2)[41]



According to the results of the cohort analysis, which is carried out 18 months after birth and takes into account serological HIV testing results, the rate of MTCT in the cohort of children born to HIV-positive mothers in 2019 was 2.6% (48 HIV-positive children aged 18 months and older).

According to the epidemiological monitoring data, the diagnosis of HIV infection is confirmed by clinical and epidemiological indications in more than 70 HIV-exposed children aged 2–18 every year in Ukraine.

Overall, it is necessary to specify that the COVID-19 pandemic became one of the key healthcare challenges for Ukraine and had an adverse impact on various aspects of lives of women living with HIV, HIV-positive pregnant women and children born to HIV-positive mothers in 2020–2021. Furthermore, nowadays there is a number of obstacles for achieving a proper level of the PMTCT programme indicators that are related to problems with public procurement procedures for medicines and medical devices, deficit of budget funds in the context of the humanitarian crisis, insufficient coverage of women of child-bearing age, including HIV-positive women, with family planning services, as well as with cross-sectoral integration of healthcare, education, social policy, justice and migration services, etc.

The abovementioned facts highlight the need to review a number of normative and methodological documents and adapt them to emergencies, as well as to develop more flexible operational approaches, algorithms and clinical pathways, the combination of which would ensure timely and comprehensive PMTCT services at a proper level for HIV-positive pregnant women and children born to HIV-positive mothers, as well as the protection of human rights, gender equality, engagement of the community of women living with HIV into the decision-making processes affecting their lives, etc.

[41] Based on the epidemic modelling data using the Spectrum programme, the MTCT rate in Ukraine in 2021 remains within the range of 3%–4%.

Section VI. PROVIDING HEALTH CARE TO PEOPLE LIVING WITH HIV

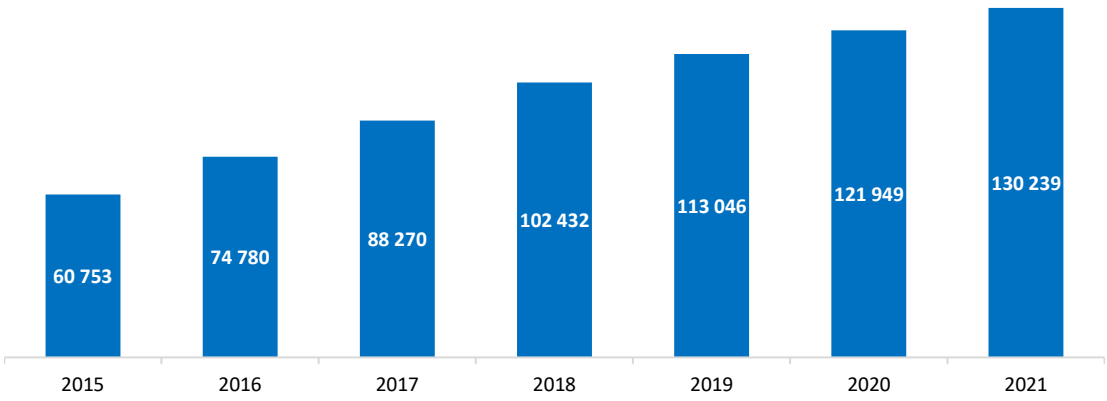
As mentioned above, as of 01.01.2022, 150,267 people living with HIV (hereinafter — PLHIV) were linked to care at HCFs in government-controlled territories of Ukraine, including 150,005 citizens of Ukraine and 262 foreigners[42].

130,239		**87%**
PLHIV linked to care receive ART	The number of PLHIV who receive ART increased by 8% as compared to 2020 (taking into account those who were deregistered or lost to follow-up)	ART coverage in persons under follow-up in Ukraine as of the end of 2021
16,477		**93%**
PLHIV initiated ART for the first time in 2021	The number of PLHIV who initiated treatment in 2021 is 8% lower than within the same period in 2020.	proportion of PLHIV who started receiving State budget-funded ART of the total number of persons who initiated treatment

6.1. Improving access to ART

390 sites provide HIV-related health care. The number of PLHIV covered with treatment among persons who know their HIV status is growing annually, shortening the gap on the way to achieving 95% coverage of PLHIV who know their status. As of today, in order to achieve the abovementioned goal, at least 12,500 more people among those linked to care due to HIV infection have to be covered with ART.

Figure 49: Number of PLHIV receiving ART in Ukraine, 2015–2021

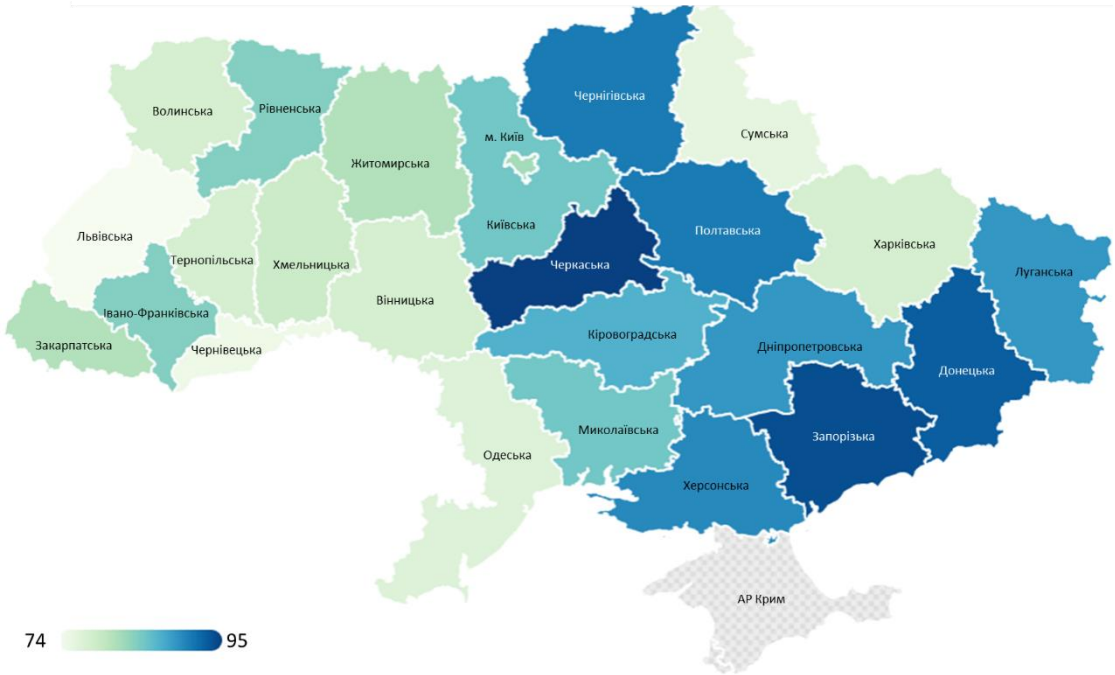


Based on the data by HCFs performing follow-up of PLHIV, the number of persons receiving ART increased by 8% in 2021 as compared to 2020 and was 130,239 persons (**Fig. 49; Tables 31–34 in**

[42] The material was prepared based on the official statistical data excluding data from the temporarily occupied territories of the Autonomous Republic of Crimea, Sevastopol city and temporarily non-government controlled territories of Donetsk and Luhansk oblasts.

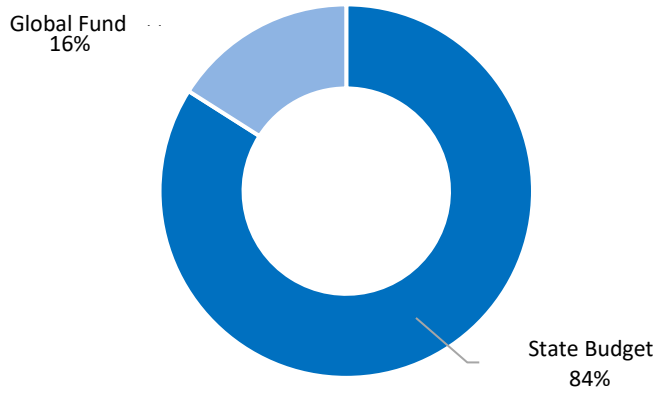
Annex 2). Although this is 10% less than the planned coverage rate (135,249), this is a good result under the circumstances of quarantine restrictions due to the COVID-19 pandemic.

Figure 50: ART coverage of PLHIV under follow-up as of 01.01.2022 (%).



The highest levels of ART coverage of PLHIV under follow-up at HCFs are observed in Cherkasy (95%), Zaporizhzhia (94%) and Donetsk (93%) oblasts; the lowest level as of the end of 2021 was registered in Lviv oblast (74%). It is worth mentioning that, according to the data of the Health Centre of the SCES of Ukraine, the ART coverage in PLHIV residing in penitentiary facilities was 95% in 2021. ART expansion was implemented primarily at the expense of the State budget. Over the past 5 years, the proportion of patients receiving treatment at the expense of the State budget rose from 84% to 47% as compared to other funding sources (**Fig. 51**).

Figure 51: ART funding sources in Ukraine as of 01.01.2022



87,715 PLHIV received routine VL testing (67%), of which 82,163 (94%) received a result of < 1,000 RNA copies/ml.

Building adherence to treatment is one of the key factors influencing ART effectiveness. According to the approved Procedure for providing care and support services to PLHIV, services for building adherence to HIV treatment and retention under follow-up are provided for HIV-positive children and adults who:

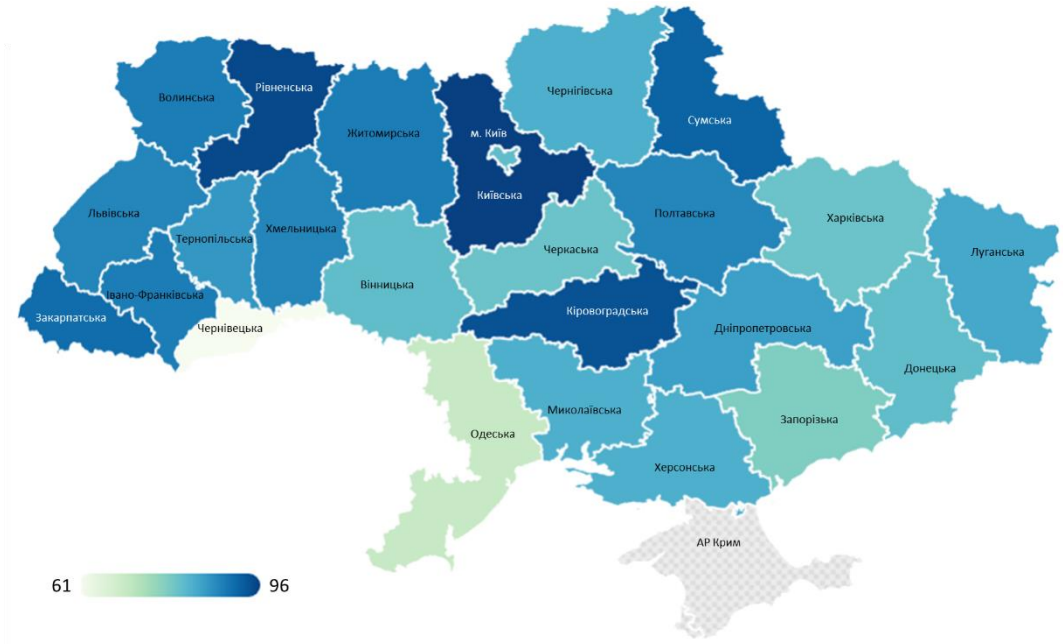
- prepare for ART initiating (newly detected patients or patients under follow-up who did not receive ART);
- interrupted ART and/or were lost to follow-up;
- receive ART but are at risk of ART interruption, do not adhere to the follow-up and/or treatment regime.

The service is provided with the aim of building adherence to ART and receiving HIV-related services and includes organizing and holding individual sessions of motivational counselling. The service is provided up to 6 months.

As of 01.01.2022, the percentage of PLHIV receiving ART in 12, 24 and 36 months after the start of the therapy from the cohort of patients who initiated ART was 85%, 80% and 77% respectively (**Fig. 52**).

A significant role in the implementation of the measures is played by NGOs implementing the "Patients' School" intervention aimed at building adherence to ART in PLHIV and the "Steps Towards Health" intervention aimed at building adherence in PLHIV and reducing harm from injecting drugs. In addition to new patients, a comprehensive model of working with HIV-positive patients who were lost to follow-up is also applied. An important part is played by actions aimed at building adherence to ART and psychosocial support of HIV-positive prisoners, preparing persons residing in penitentiaries for their release and ensuring continuity of treatment after release.

Figure 52: Percentage of PLHIV who receive ART in 12 months after treatment initiation from the cohort of patients who initiated ART 01.01.2020 to 31.12.2020



6.2. Providing health care to PLHIV with tuberculosis

Based on global estimates, PLHIV are 18 times more likely to suffer from TB. Despite the fact that 85% of TB patients can be cured, the number of successful treatment cases in PLHIV is much lower — only about 77%[43].

According to the results of ongoing surveillance, the number of TB cases in Ukraine, including HIV/TB cases, is gradually decreasing (almost by half as compared to 2015: from 6,292 to 3,646). Among the registered TB cases (new and relapse cases), the number of persons with co-infection is decreasing proportionally, and the percentage of these cases decreased from 23.0% to 20.1% as compared to 2019 (**Fig. 53).**

Figure 53: Number of registered TB cases (new and relapse) and the share of persons with positive HIV status among them (2015-2021)

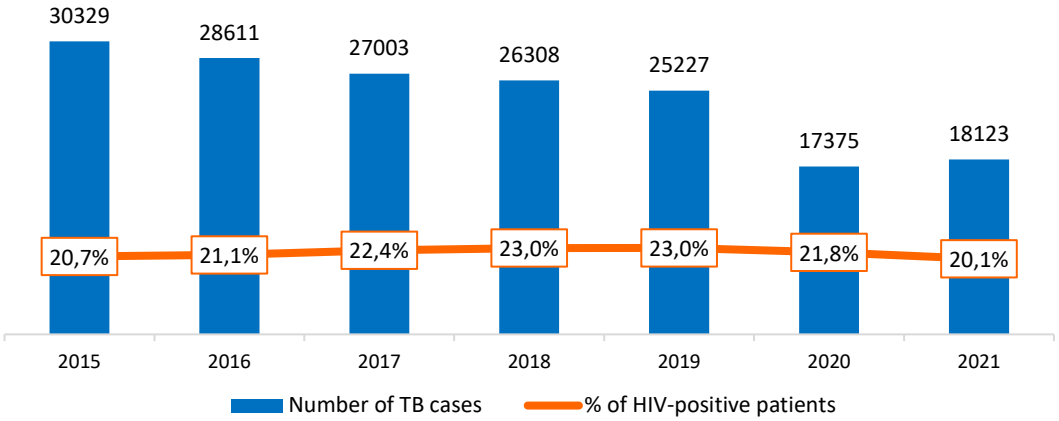
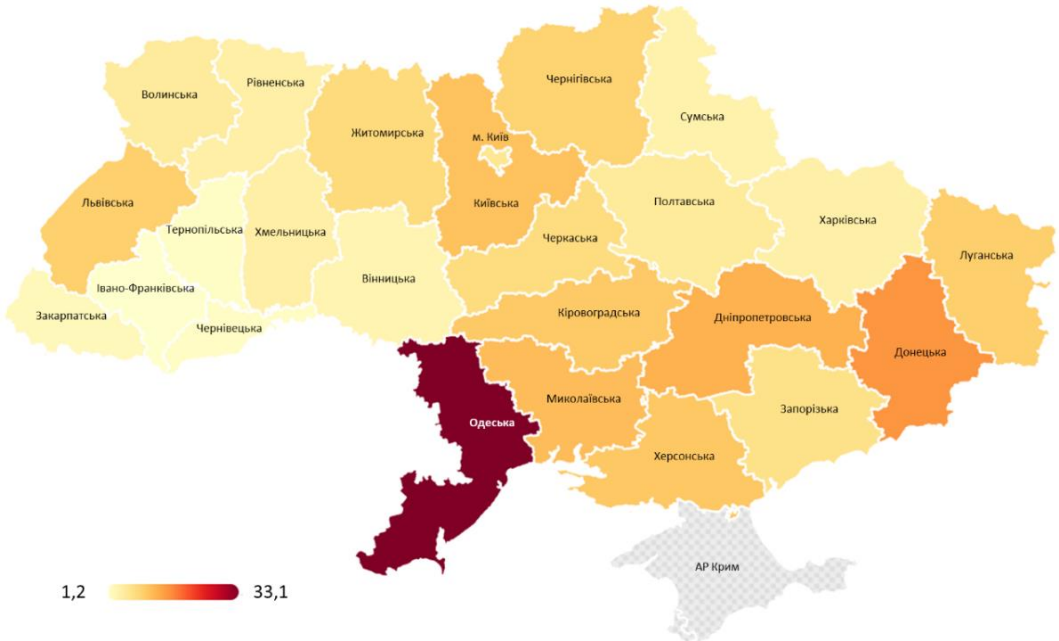


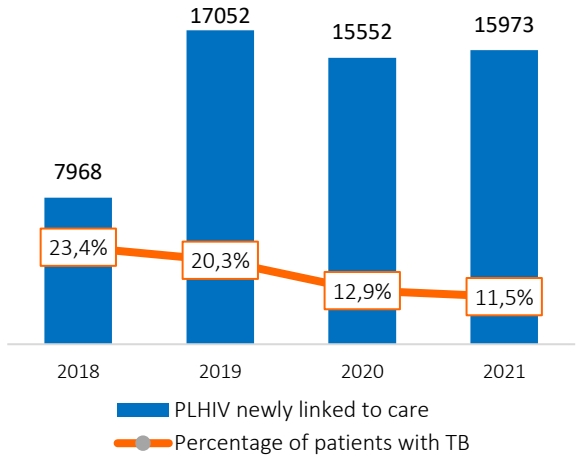
Figure 54: HIV/TB incidence in Ukraine per 100,000 population, 2021



[43] Based on UNAIDS materials: https://www.unaids.org/ru/resources

The average HIV/TB incidence (new and relapse cases) in Ukraine in 2021 was 8.4 per 100,000 population with variation from the highest rate in Odesa oblast (33.1) to the lowest rate (1.2) in Ivano-Frankivsk oblast (**Fig. 54**).

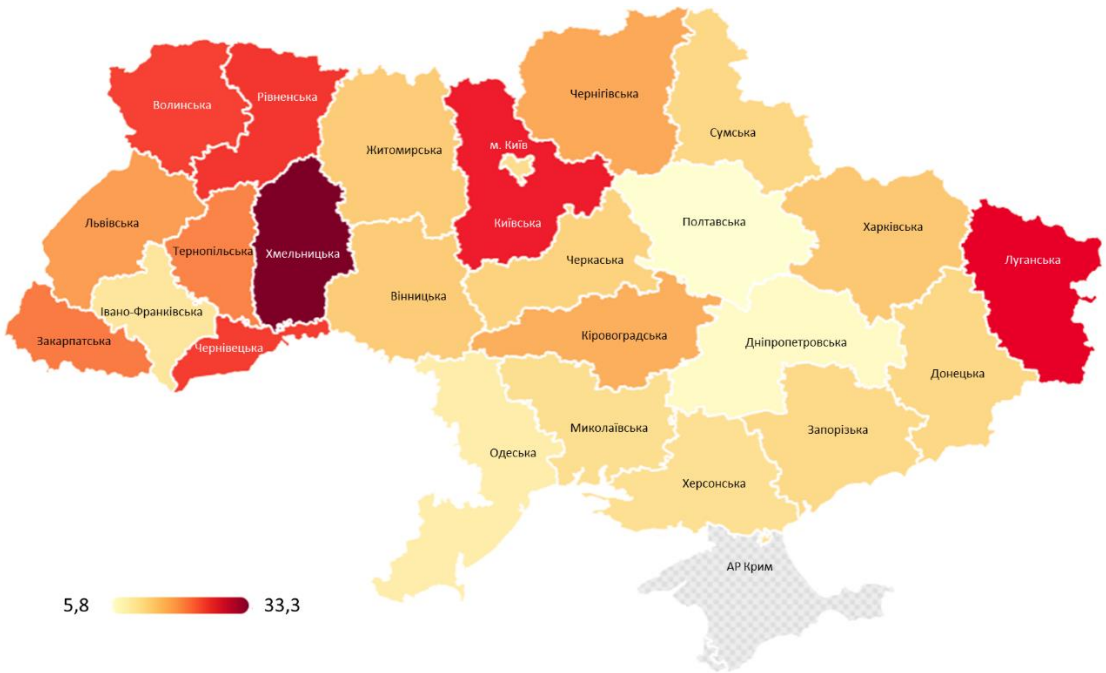
Figure 55: Number of persons diagnosed with TB among PLHIV follow-up, 2019–2021



The number of PLHIV who were diagnosed with active TB disease is a critical indicator for the assessment of care quality in PLHIV who were newly linked to HIV-related healthcare service programme within the reporting period. In particular, it serves as an indirect indicator of the effectiveness of efforts aimed at early diagnosis of HIV-associated TB.

Ukraine continues demonstrating a downward trend concerning the number and the proportion of patients diagnosed with TB among PLHIV who were newly placed under follow up: from 20.3% in 2019 to 11.5% in 2021. (**Fig. 55**)[44]. Significant geographical variations are observed in different regions: from the highest rates in Khmelnitsky (33.3%), Luhansk (25.2%) and Kyiv (24.3%) oblasts to the lowest rates in Poltava (5.8%), Dnipropetrovsk (6.6%) and Odesa (8.8%) oblasts (**Fig. 56**).

Figure 56: Percentage of persons with TB among PLHIV diagnosed with HIV in Ukraine, 2021

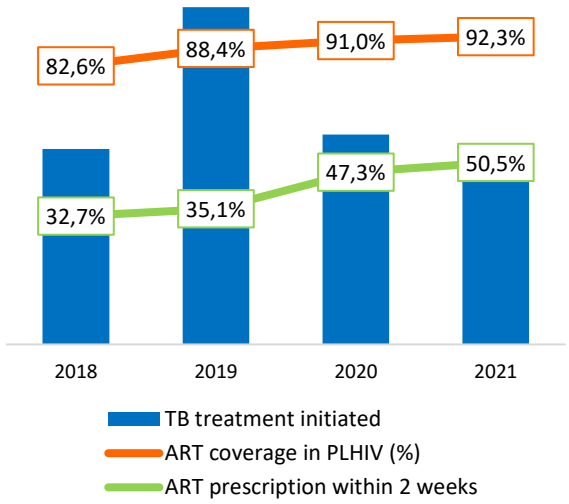


[44] Based on the Report on diagnosis, prevention and treatment of tuberculosis and viral hepatitis in HIV patients (Form No. 58)

As for the interpretation of the indicator at the national and regional level, the high rate may indicate both high TB prevalence and high effectiveness levels of TB screening and HIV testing programmes; at the same time, low rates may indicate both low quality of TB screening and high effectiveness of anti-TB measures. Thus, the indicator should be interpreted carefully[45].

Adequate TB detection and treatment improves the life expectancy of PLHIV and reduces TB burden. Every year, the WHO publishes a global assessment of TB burden in PLHIV. All PLHIV who were newly diagnosed with tuberculosis infection must start TB treatment and ART within 8 weeks after the beginning of TB treatment irrespective of the CD4 count. People with TB and HIV co-infection whose immune system indicators are very low (e.g., CD4 count below 50 cells/mm^3) should start ART within the first two weeks after initiating TB treatment. In this case, TB treatment takes place in accordance with the criteria defined by the guidelines of national TB programmes.

Figure 57: ART coverage in people with HIV/TB who initiated TB treatment within the reporting period (overall and within ≤ 2 weeks) in Ukraine



The indicator of simultaneous treatment of TB and HIV infection evaluates progress in TB and HIV detection and treatment in people with HIV-associated TB. It helps to define how the cooperation between the national TB and HIV control programmes ensures the access to treating both diseases for PLHIV diagnosed with TB. However, the indicator is influenced by such factors as low HIV testing level, insufficient access to HIV-related services, particularly ART, and insufficient access to TB diagnosis and treatment. When interpreting the results, it is necessary to address the specific indicators for each of these factors[46].

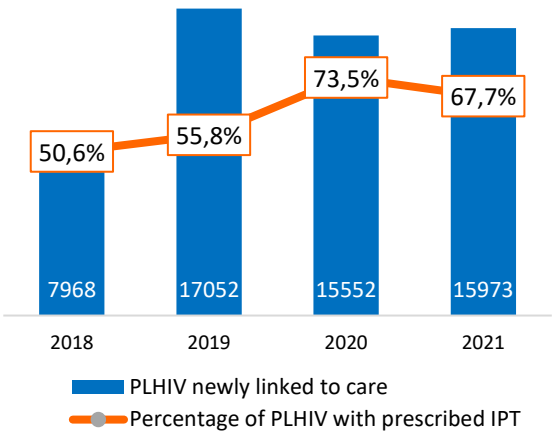
According to programme data, ART coverage in people with HIV/TB has improved significantly in recent years. Although the total number of persons with co-infection in 2021 decreased by half as compared with 2019 (from 3,456 to 1,835), the percentage of PLHIV who initiated TB treatment and received ART rose from 88.4% to 92.3% within the same period (**Fig. 57**). It is worth noting that the percentage of persons with HIV/TB who initiated ART within the first 2 weeks increased from 35.1% in 2019 to 50.5% in 2021.

Preventive treatment with anti-TB drugs reduces the risk of the development of active TB disease and increases the chance of survival for all people living with HIV in case they become ill. PLHIV should be screened for TB during every visit to a healthcare facility in accordance with the clinical algorithm recommended by the WHO.

[45] According to UNAIDS, the estimated percentage of TB infection cases in PLHIV in 2019 was 56%.

[46] For more details, see: https://www.unaids.org/en/global-aids-monitoring
In addition: A guide to monitoring and evaluation for collaborative TB/HIV activities: 2015 revision. Geneva: WHO, 2015. https://apps.who.int/iris/bitstream/handle/10665/150627/9789241508278_eng.pdf?sequence=1

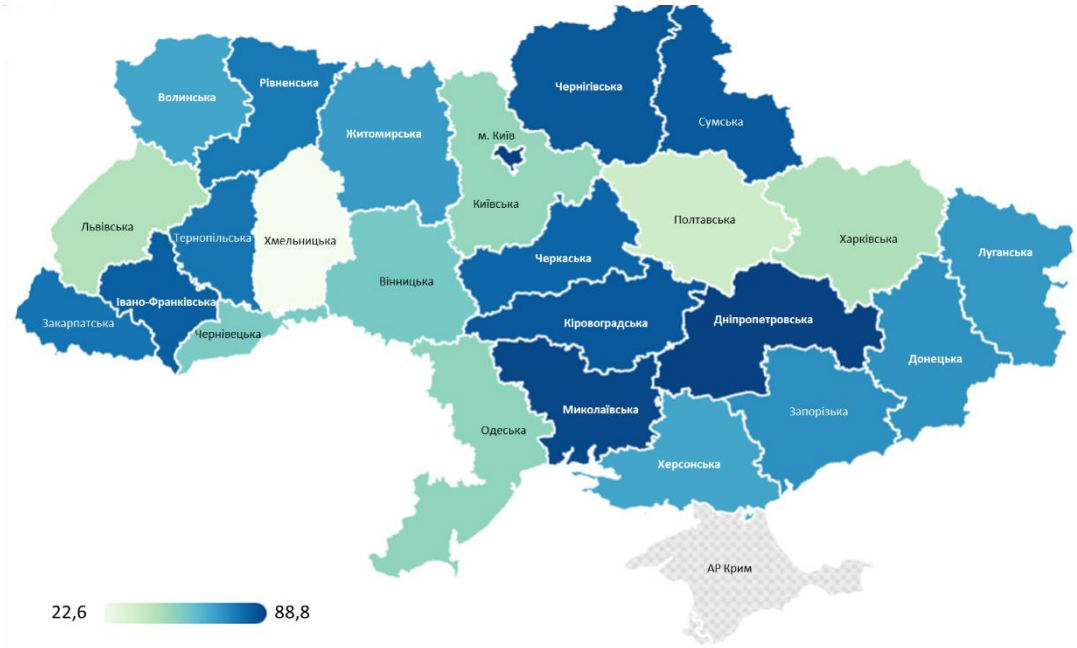
Figure 58: IPT coverage in PLHIV newly linked to care in Ukraine (%)



According to global estimates, the annual risk of the development of active TB disease in HIV-positive patient with latent TB infection (hereinafter — LTBI) is 3 to 12 times higher than that of the general public. LTBI-related treatment of PLHIV reduces the risk of TB disease by 62% and lowers the risk of death by 26%. Thus, TB prevention through screening for timely detection and treatment of LTBI is one of the key components for PLHIV in Ukraine.

The coverage of PLHIV who were newly linked to care in Ukraine is rising. However, in 2021 the rate was slightly lower as compared to the previous year and was 67.7% (**Fig. 58**).

Figure 59: IPT coverage of people newly linked to care due to HIV infection in the regions of Ukraine (%), 2021



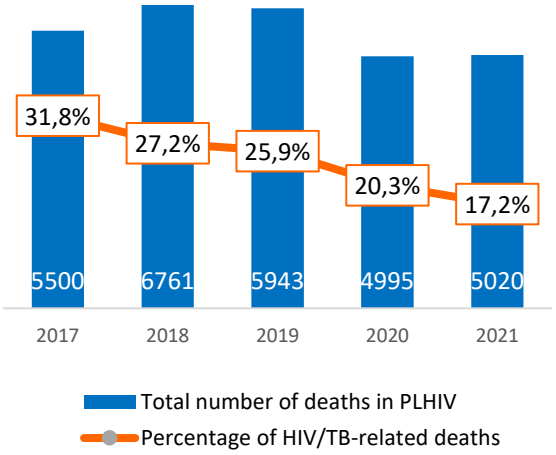
At the regional level, the rate varies from 88.8% (Kyiv city) to 22.6% (Khmelnytskyi oblast) (**Fig. 59**).

In order to improve TB care in 2021, Ukraine started the implementation of the project "Implementation of Patient-Oriented Treatment Model for Patients with Tuberculosis Involving General Practitioners" within the framework of a new grant by "Accelerating Progress in Reducing the Burden of Tuberculosis and HIV Infection in Ukraine" Programme for 2021–2023 of the Global Fund to Fight AIDS, Tuberculosis and Malaria.

This project provides for the engagement of family doctors into prescribing a standard drug-susceptible tuberculosis treatment regimen. A number of Ukrainian oblasts were involved in the

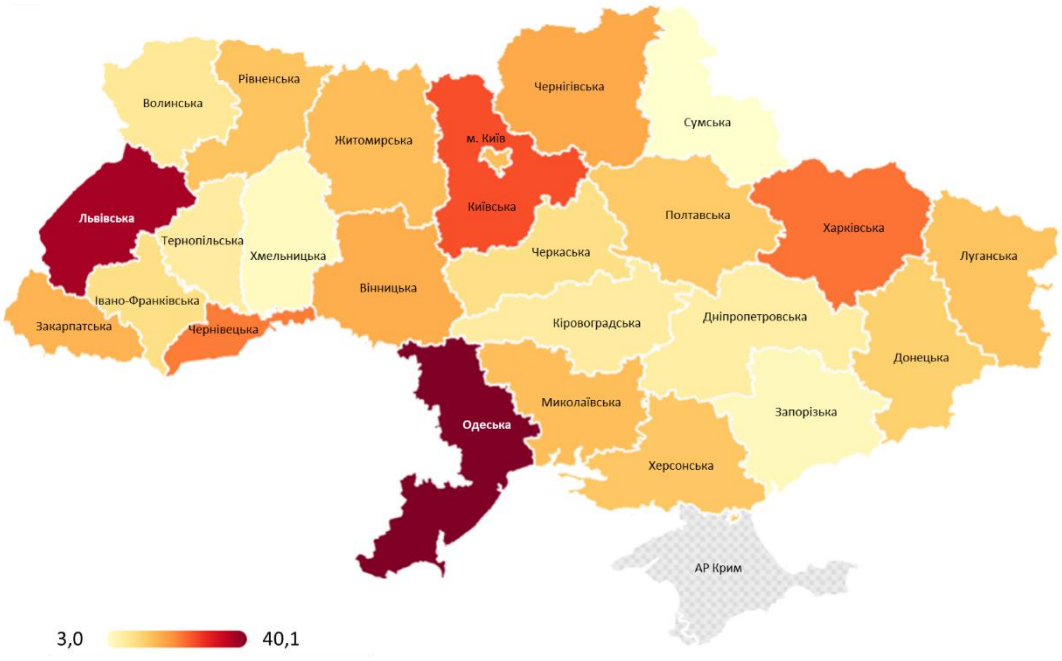
project (Vinnytsia oblast, Volyn oblast, Kyiv oblast, Kirovohrad oblasts, Poltava oblast, Rivne oblast and Chernihiv oblast). As of the end of 2021, 154 family doctors were engaged in the programme, who prescribed drug-susceptible tuberculosis treatment to 416 persons; at the same time, the average period for treatment prescription was 2 days.

Figure 60: HIV/TB coinfection-related mortality in PLHIV in Ukraine (%)



In spite of a certain success, TB is the most widespread mortality cause in hospitalised adult PLHIV. According to the data of the Report on persons with human immunodeficiency virus (HIV)-related conditions and diseases, there is a downward trend in the number and percentage of deaths in patients with HIV/TB coinfection among all deaths in PLHIV: from 25.9% in 2018 to 17.2% in 2021 (**Fig. 60**). At the same time, the absolute number of HIV/TB-related deaths decreased from 1,542 persons in 2019 to 864 in 2021. At the regional level, the percentage of deaths caused by HIV/TB coinfection in PLHIV varies from 3% in Sumy oblast to 40% in Odesa oblast (**Fig. 61**).

Figure 61: Percentage of HIV/TB coinfection-related deaths in deceased PLHIV (%), 2021



6.3. Providing health care to PLHIV with viral hepatitis C

Viral hepatitis is a large global public health problem which causes approximately 1.4 million deaths annually, which is more than the number of AIDS-related deaths. 96% of the deaths are caused by cirrhosis and hepatocellular carcinoma due to hepatitis B (hereinafter — HBV) and C (hereinafter — HCV) viruses transmitted through blood and biological fluids. The cirrhosis progresses more rapidly in people living with HIV and hepatitis B or C. Liver diseases have become a common cause of death of PLHIV with HBV of HCV coinfection.

Coinfection with hepatitis C and HIV is observed in all KPs, primarily in the PWID population due to common use of non-sterile drug preparation and injection tools. According to UNAIDS data, more than 12% of people who inject drugs are infected with HIV and more than a half of them have HCV[47].

It is impossible to make a reliable estimate of HCV prevalence in Ukraine, since there is no national registry of HCV patients in the country. No annual preventive examinations of the population are conducted, and the awareness of viral hepatitis remains low. Most people do not know that they are infected and do not seek medical care at the early stage of the disease, until they reach the chronical form of HCV infection that is registered in 60–80% patients. That is why the official data are lower as compared to the estimates[48].

In November 2019, Ukraine acceded to the Global Strategy for the Elimination of Viral Hepatitis B and C, having approved the National Strategy on HIV, TB and Viral Hepatitis until 2030 (hereinafter — the Strategy). The Strategy identifies key targets and objectives aimed at eliminating viral hepatitis as a public health threat.

At the moment, the procurement of medicines for the treatment of viral hepatitis (hereinafter — VH) in children and adults is performed in a centralised manner using the funds of the State budget. Due to the existence of generic direct-acting antiviral drugs registered in Ukraine that are significantly less costly than branded medicines, there is a possibility of increasing the volumes of medicine procurement as compared to the previous years.

At the moment, there is no State funding of the VH diagnostic package. The Public Health Center of the MoH of Ukraine SI has prepared a VH services package and lobbies the issue of including the package into the list of services paid for by the National Health Service of Ukraine. Furthermore, there is no centralised procurement and shipment of diagnostic materials; as a consequence, screening and confirmatory diagnosis become the responsibility of the patient themselves.

According to the data of ongoing surveillance, the number of registered cases of HIV/HCV coinfection in PWID fluctuates within the range of 28–31 thousand. Number of persons who received HCV treatment among them rises annually (from 2,751 in 2017 to 4,319 in 2021).

In 2021, the Public Health Center of the MoH of Ukraine SI developed Standards of care in the areas “Viral Hepatitis C in Adults”, “Viral Hepatitis C in Children”, “Viral Hepatitis B in Adults”, “Viral Hepatitis B in Children” that helped simplify and unify the algorithms of diagnosis and laboratory follow-up of treatment. In particular, the Standards make it impossible to prescribe unnecessary and expensive examinations to all categories of patients and provide for conducting them only in specific justified cases.

At the moment, Form No. 58 (annual) “Report on Diagnosis, Prevention and Treatment of Tuberculosis and Viral Hepatitis in HIV Patients in 20__” serves as a source of information on HCV

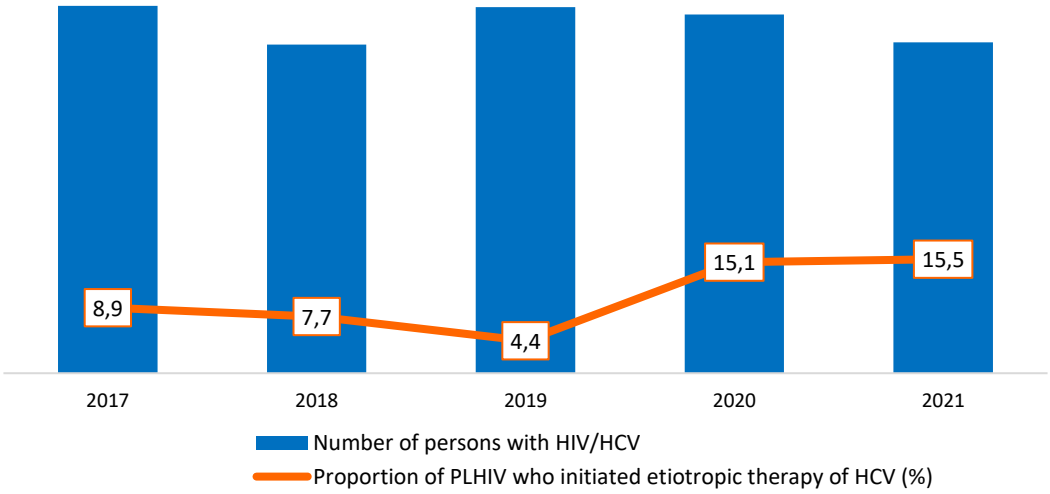
[47] Based on UNAIDS materials: https://www.unaids.org/ru/resources

[48] https://phc.org.ua/sites/default/files/users/user92/Analitychnyj-zvit-VGS.pdf

and HIV diagnosis and treatment in PLHIV. There is no source for monitoring the volume and results of HCV screening of PLHIV who initiate ART.

According to the results of screening tests, as of the end of 2021, the number of PLHIV infected with HCV was 27,913 persons of which 4,319 (15.1%) initiated ***etiotropic therapy of hepatitis C*** during the year (**Fig. 62**).

Figure 62: Number of PLHIV infected with HCV, and the percentage of persons who initiated etiotropic therapy among them, 2021



As of the end of 2021, 4,770 PLHIV infected with hepatitis B virus were linked to care, of which 3,004 PLHIV with HCV and HBV coinfection. The total number of PLHIV with HIV/HBV coinfection who receive tenofovir-based ART regiments is 5,167.

In spite of the actions taken, the national VH treatment initiation rates remain unsatisfactory. If the situation does not change, the targets of the Strategy will not be reached even by 30%. According to the Strategy, 50% of persons with HCV and 20% of persons with HBV should receive treatment by 2025.

In order to improve access to treatment for people with HIV/HCV coinfection, the Public Health Center of the MoH of Ukraine SI implemented a number of special measures concerning the issues of improving patient pathways, cancelling treatment prescription by a commission and service exterritoriality during the year. Cooperation with patients' organizations was established and strengthened through the establishment of operational reporting on the available medications and communication in case of receipt of an application to refuse from treatment. In addition, interaction with the Alliance for Public Health ICF and 100 Life CO was established in the area of implementation of the project for the treatment of co-infected patients.

In 2021, within the framework of the ongoing programme of the Global Fund to Fight AIDS, Tuberculosis and Malaria, ***The Alliance for Public Health ICF*** launched the project for HCV microelimination among patients with HIV/HCV and TB/HCV coinfection from risk groups, such as PLHIV, PWID and their partners, MSM, SWs (comprehensive package of services). The HCV treatment programme in KP representatives living with HIV and TB was first implemented in cooperation with the Government of Ukraine: the medicines for HCV treatment were purchased with the State budget funds and were distributed in the regions by the Public Health Center of the MOH of Ukraine SI, and the reagents were delivered directly to HCFs.

In order to cover the representatives of KPs with the minimal package of HIV prevention service in the area of HCV and HBV screening, the Alliance purchased 142,370 HCV tests and 9,680 HBV tests in 2021. 61,499 persons belonging to KPs were tested for HCV, of which 32.4% tested positive. The abovementioned persons with HIV/HCV coinfection were referred to the "HCV microelimination among patients with HIV/HCV and TB/HCV coinfection from risk groups..." project for further HCV diagnosis and treatment. Of 12,427 persons from KPs tested for hepatitis B virus, 2.6% tested positive.

In 2021, 2,421 patients received a comprehensive package of services within the framework of the "HCV microelimination" project. Of 2,394 patients with HIV/HCV coinfection, 99% are accounted for by PWID and their partners, of which 20% were patients receiving SMT. Since October 2021, 27 patients with tuberculosis started HCV diagnosis and treatment. 90% of them successfully completed the full treatment course in 2021 and 10% finished treatment in 2022. Treatment and social support of the patients was performed by multidisciplinary teams at HCFs[49].

In order to improve access to VH diagnosis, in particular on the basis of public organizations, the largest patient organization ***100% Life*** in cooperation with the Public Health Center of the MoH of Ukraine SI developed a map of VH testing sites. These healthcare facilities provide free HIV and hepatitis testing[50].

Moreover, a report on the assessment of the accessibility of HIV and viral hepatitis C coinfection treatment in Ukraine was presented in 2021. The survey was initiated by 100% Life CO with the support of the Public Health Center of the MoH of Ukraine SI within the framework of the project "Strengthening the Impact on Reducing the Burden of Tuberculosis Through Ensuring Universal Access to Timely and Quality Diagnosis and Treatment, Increasing the Volumes of Evidence-Based HIV Prevention, Diagnosis and Treatment and Building Viable and Resilient Health System" funded by the Global Fund to Fight AIDS, Tuberculosis and Malaria. The conducted analysis allowed detecting key barriers and gaps in ensuring access to HCV treatment for PLHIV, which require managerial decisions on improving the access to treatment [51].

For more information on HIV epidemic, see:

- The national portal of strategic public health information, section "HIV Monitoring in Ukraine": **https://npsi.phc.org.ua/HIV_Monitoring**
- The website of the Alliance for Public Health: **https://aph.org.ua/wp-content/uploads/2021/11/Strategic-Information_Leaflet_2021.pdf**
- The website of 100% Life CO: **https://network.org.ua**

[49] https://aph.org.ua/wp-content/uploads/2022/05/Zvit_Alyansu_VGS_2021_TSGZ.pdf
[50] https://network.org.ua/v-ukrayini-startuye-mizhnarodnyj-tyzhden-testuvannya-na-vil-ta-gepatyty/
[51] For more details, see: https://network.org.ua/wp-content/uploads/2021/07/Analitychnyj-zvit-VGS.pdf

Annex 1

Table 1.1: Global data on HIV/AIDS in 2021 according to UNAIDS estimates[52]

World regions	Number of PLHIV as of the end of 2021	New cases of HIV infection in 2021		New AIDS-related deaths in 2021	Number of PLHIV receiving ART in 2021	% of PLHIV receiving ART			
		Total	Children aged 0–14			Total	Adults aged 15+	Children aged 0–14	pregnant women
Global indicators	**38.4 million**	**1.5 million**	**160,000**	**650,000**	**28.7 million**	**75%**	**76%**	**52%**	**81%**
East and South Africa	20.6 million	670,000	78,000	280,000	16.2 million	78%	79%	56%	90%
Asia-Pacific Region	6.0 million	260,000	14,000	140,000	4.0 million	66%	66%	76%	49%
West and Central Africa	5.0 million	190,000	54,000	140,000	3.9 million	78%	82%	35%	60%
Latin America	2.2 million	110,000	4,000	29,000	1.5 million	69%	70%	40%	63%
Caribbean	330,000	14,000	910	5,700	230,000	70%	70%	50%	86%
Middle East and North Africa	180,000	14,000	1,500	5,100	88,000	50%	50%	40%	21%
Eastern Europe and Central Asia	1.8 million	160,000	-*	44,000	930,000	51%	50%	-*	-*
Western and Central Europe, North America	2.3 million	63,000	-*	13,000	1.9 million	85%	84%	-*	-*

Estimated data not published because of their small volume

[52] https://www.unaids.org/en/resources/documents/2022/UNAIDS_FactSheet

Table 1.2: Number of new cases of HIV, AIDS and AIDS-related deaths in the countries of the eastern part of the WHO European Region, 2020[53]										
List of the countries of the eastern part of the WHO European Region	New HIV cases							New AIDS cases		New AIDS-related deaths
	absolute value	per 100 thousand population	including with the following modes (risks) of HIV transmission				% of persons with CD4 count < 350 cells/mm³	absolute value	per 100 thousand population	absolute value
			PWID	MSM	heterosexual contacts	mother-to-child transmission				
WHO European region	104,765	11.8	23,416	9,897	60,409	468	36.3	7,721	1.2	3,506
East*	84,556	32.6	22,799	2,474	54,228	345	34.4	5,705	5.0	2,877
% of the total number in the Region	*80.7%*		*97.4%*	*25.0%*	*89.8%*	*73.7%*		*73.9%*		*82.1%*
Azerbaijan	559	5.5	89	56	403	2	40.5	105	1.0	8
Belarus	1,427	15.1	222	79	1,098	5	36.0	220	2.3	59
Armenia	369	12.5	21	34	301	9	62.0	152	5.1	51
Georgia	530	13.3	62	102	354	3	51.0	181	4.5	106
Estonia	143	10.8	10	7	70	3	48.0	23	1.7	6
Kazakhstan	3,472	18.5	1,045	221	2,019	23	44.1	469	2.5	317
Kyrgyzstan	676	10.4	46	41	461	12	56.0	46	0.7	5
Latvia	257	13.5	41	11	107	5	58.6	55	2.9	13
Lithuania	108	3.9	data not available	data not available	data not available	data not available	data not available	15	0.5	0
Moldova	675	16.7	17	18	401	11	51.8	194	9.0	102
Russia	59,598	40.8	15,203	1,499	38,937	162	27.1	data not available	data not available	data not available
Tajikistan	1,084	11.4	83	13	880	43	36.6	106	1.1	96
Ukraine	**15,658**	**37.5**	**5,960**	**393**	**9,197**	**67**	**54.5**	**4,139**	**9.9**	**2,114**

**Not including data from Turkmenistan and Uzbekistan*

[53] https://www.ecdc.europa.eu/sites/default/files/documents/2021-Annual_HIV_Report_0.pdf

Table 1.3: Summary evaluation of the situation with HIV/AIDS in Ukraine as of the end of 2021 and projected indicators for the period until 2025					
Evaluated indicators	**2021**	**2022**	**2023**	**2024**	**2025**
Total number of people living with HIV (all age groups, thousand persons)	245 (215–281)	247 (216–284)	248 (216–286)	250 (217–289)	252 (217–292)
Total number of people living with HIV (adults aged 15 and above, thousand persons)	242 (213–278)	245 (214–281)	246 (215–283)	248 (216–286)	250 (216–289)
HIV prevalence level (adults aged 15 and older, %)	0.66 0.58–0.76)	0.67 (0.59–0.77)	0.68 (0.59–0.78)	0.69 (0.6–0.8)	0.7 (0.6–0.81)
Total number of people living with HIV (adults aged 15 to 49, thousand persons)	192 (167–220)	189 (14–218)	184 (159–213)	180 (155–210)	174 (150–205)
HIV prevalence level (adults aged 15 to 49, %)	0.94 (0.82–1.08)	0.93 (0.81–1.08)	0.92 (0.79–1.06)	0.9 (0.78–1.05)	0.88 (0.76–1.04)
Number of hew HIV cases (adults aged 15 and older, thousand persons)	6.6 (4.8–9.5)	6.3 (4.6–9.1)	5.0 (3.8–7.0)	5.7 (4.2–8.0)	5.6 (4.2–8.0)
Number of new HIV cases per 1,000 adults (aged 15 and older)	0.2 (0.1–0.3)	0.2 (0.1–0.3)	0.1 (0.1–0.2)	0.2 (0.1–0.2)	0.2 (0.1–0.2)
Number of new HIV cases (adults aged 15 to 49, thousand persons)	6.1 (4.6–8.8)	5.8 (4.3–8.4)	4.6 (3.5–6.4)	5.3 (3.9–7.3)	5.2 (3.8–7.2)
Number of new HIV cases per 1,000 adults (adults aged 15 to 49)	0.3 (0.2–0.4)	0.3 (0.2–0.4)	0.2 (0.2–0.3)	0.3 (0.2–0.4)	0.3 (0.2–0.4)
Total number of people living with HIV (including children under 14 inclusive, thousand persons)	2.7 (2.2–3.8)	2.5 (1.9–3.5)	2.3 (1.8–3.3)	2.2 (1.7–3.1)	2.0 (1.5–2.9)
Number of new HIV cases (absolute value)	84 (64–192)	190 (115–298)	177 (105–277)	176 (102–286)	144 (76–253)
Number of AIDS-related deaths (adults aged 15 and older, thousand persons)	2.7 (2.0–3.6)	2.8 (2.0–3.6)	2.3 (1.7–3.0)	2.0 (1.5–2.7)	1.8 (1.3–2.4)

Annex 2

Table 2.1: Results of SEM of HIV prevalence by testing code in Ukraine, 2017–2019

Code	Populations tested for HIV	2019			2020			2021		
		Persons tested	HIV+ results		Persons tested	HIV+ results		Persons tested	HIV+ results	
			persons	%		persons	%		persons	%
100	Citizens of Ukraine, total, including by specific code	2,526,525	22,309	**0.9**	1,959,243	21,277	**1.1**	1,923,468	19,040	**1.0**
101	Persons who had sexual contacts with HIV-positive persons	26,568	2,248	**8.5**	22,049	2,400	**10.9**	26,075	2,475	**9.5**
102	People who inject drugs	128,219	2,662	**2.1**	107,059	4,759	**4.4**	67,491	4,327	**6.4**
103	Persons who had homosexual contacts with persons whose HIV status is unknown	25,520	386	**1.5**	21,373	267	**1.2**	14,353	373	**2.6**
104	Persons having symptoms of or diagnosed with STI	40,284	352	**0.9**	22,122	229	**1.0**	15,592	151	**1.0**
105	Persons with risky sexual behaviours	147,249	1,652	**1.1**	94,179	1,212	**1.3**	106,374	1,420	**1.3**
106	Recruits, prospective students of military educational institutions	86,457	184	**0.2**	68,888	135	**0.2**	63,285	82	**0.1**
107	Persons from other groups at risk of HIV acquisition tested based on epidemiological criteria	48,660	392	**0.8**	38,554	509	**1.3**	23,773	885	**4.1**
108	Donors	539,767	320	**0.1**	441,163	303	**0.1**	483,364	243	**0.1**
109.1	Pregnant women	341,383	792	**0.2**	306,351	653	**0.2**	261,972	619	**0.2**
111	Children born to HIV-positive mothers tested for the purposes of final diagnosis of HIV infection at the age of 18 months and older	2,229	14	**0.6**	1,949	7	**0.4**	1,919	6	**0.3**
112	People detained in penitentiaries	53,089	1,433	**2.7**	52,973	883	**1.7**	76,796	595	**0.8**
113	Persons with diseases and conditions in the presence of which the patients are offered HTS when seeking medical care at HCFs	521,406	7,080	**1.4**	394,099	5,542	**1.4**	433,035	4,354	**1.0**
114	Persons tested anonymously	25,047	268	**1.1**	16,096	87	**0.5**	9,702	32	**0.3**
115	Persons at risk of HIV acquisition resulting from medical manipulations	1,442	4	**0.3**	1,481	1	**0.1**	1,419	0	**0.0**
116	Persons tested upon their own initiative	536,391	2,147	**0.4**	368,097	1,847	**0.5**	334,125	1,358	**0.4**
119	Deceased persons	652	185	**28.4**	632	241	**38.1**	801	75	**9.4**

Table 2.2: Results of SEM of HIV prevalence in the regions of Ukraine, 2021				
Region (oblast, city)	Code 100 (citizens of Ukraine, total)			
	Persons tested		HIV+ results	
	number of persons	(per 100 thousand population)	persons	%
Ukraine	1,922,018	**5,093**	19,040	**1.0**
Vinnytsia oblast	56,766	**3,730**	262	**0.5**
Volyn oblast	51,723	**5,048**	152	**0.3**
Dnipropetrovsk oblast	205,089	**6,534**	3,719	**1.8**
Donetsk oblast	115,489	**6,214**	1,165	**1.0**
Zhytomyr oblast	49,943	**4,175**	379	**0.8**
Zakarpattia oblast	28,763	**2,306**	148	**0.5**
Zaporizhzhia oblast	95,872	**5,756**	497	**0.5**
Ivano-Frankivsk oblast	35,237	**2,594**	118	**0.3**
Kyiv oblast	76,650	**4,300**	1,187	**1.5**
Kirovohrad oblast	52,200	**5,713**	398	**0.8**
Luhansk oblast	40,323	**6,047**	169	**0.4**
Lviv oblast	83,289	**3,359**	565	**0.7**
Mykolaiv oblast	71,595	**6,464**	744	**1.0**
Odesa oblast	164,571	**6,982**	4,992	**3.0**
Poltava oblast	44,710	**3,279**	389	**0.9**
Rivne oblast	49,854	**4,345**	180	**0.4**
Sumy oblast	45,694	**4,347**	181	**0.4**
Ternopil oblast	27,919	**2,718**	74	**0.3**
Kharkiv oblast	108,412	**4,141**	787	**0.7**
Kherson oblast	46,586	**4,589**	501	**1.1**
Khmelnytskyi oblast	49,678	**4,004**	266	**0.5**
Cherkasy oblast	85,665	**7,293**	293	**0.3**
Chernivtsi oblast	39,130	**4,379**	73	**0.2**
Chernihiv oblast	56,595	**5,846**	332	**0.6**
Kyiv city	240,265	**8,226**	1,469	**0.6**

Table 2.3: Results of SEM in Ukraine, HIV testing using rapid tests, 2019–2021									
Code	2019			2020			2021		
	Persons tested using RTs	% of all persons tested using RTs (code 100)	% of all persons tested under the code	Persons tested using RTs	% of all persons tested using RTs (code 100)	% of all persons tested under the code	Persons tested using RTs	% of all persons tested using RTs (code 100)	% of all persons tested under the code
100	823,686	100.0	**32.6**	713,027	100.0	**36.4**	832,620	100.0	**43.3**
101	20,849	2.5	**78.5**	16,643	2.3	**75.5**	20,788	2.5	**79.7**
102	116,156	14.1	**90.6**	99,499	14.0	**92.9**	60,555	7.3	**89.7**
103	24,369	3.0	**95.5**	20,054	2.8	**93.8**	14,085	1.7	**98.1**
104	17,391	2.1	**43.2**	12,014	1.7	**54.3**	11,814	1.4	**75.8**
105	93,802	11.4	**63.7**	70,696	9.9	**75.1**	71,355	8.6	**67.1**
107	20,083	2.4	**41.3**	21,217	3.0	**55.0**	14,662	1.8	**61.7**
109.1	7,202	0.9	**2.1**	7,359	1.0	**2.4**	13,640	1.6	**5.2**
109.2	9,207	1.1	**2.8**	8,835	1.2	**3.1**	11,584	1.4	**4.7**
112	51,509	6.3	**97.0**	52,692	7.4	**99.5**	74,451	8.9	**96.9**
113	301,529	36.6	**57.8**	271,665	38.1	**68.9**	344,603	41.4	**79.6**
113 tb	28,958	3.5	**66.9**	20,609	2.9	**73.7**	25,765	3.1	**91.8**
113 inf	21,193	2.6	**55.9**	20,121	2.8	**61.6**	30,790	3.7	**70.8**
113 others	246,955	30.0	**57.7**	230,935	32.4	**69.3**	288,048	34.6	**79.7**
114	8,934	1.1	**35.7**	5,104	0.7	**31.7**	3,730	0.4	**38.4**
116	144,336	17.5	**26.9**	119,623	16.8	**32.5**	171,792	20.6	**51.4**

Table 2.4: Results of SEM in Ukraine, performance of HTS using rapid tests, 2019–2021									
Code	2019			2020			2021		
	HIV+ persons detected using RTs	% of all HIV+ persons (code 100)	% of all HIV+ persons under the code	HIV+ persons detected using RTs	% of all HIV+ persons (code 100)	% of all HIV+ persons under the code	HIV+ persons detected using RTs	% of all HIV+ persons (code 100)	% of all HIV+ persons under the code
100	11,413	100.0	**51.2**	13,600	100	**63.9**	13,934	100	**73.2**
101	1,658	14.5	**73.8**	2,036	15.0	**84.8**	2,301	16.5	**93.0**
102	1,861	16.3	**69.9**	3,953	29.1	**83.1**	4,206	30.2	**97.2**
103	284	2.5	**73.6**	229	1.7	**85.8**	342	2.5	**91.7**
104	172	1.5	**0.4**	166	1.2	**0.8**	122	0.9	**80.8**
105	1,085	9.5	**65.7**	1,016	7.5	**83.8**	1,236	8.9	**87.0**
107	122	1.1	**31.1**	391	2.9	**76.8**	885	6.4	**91.9**
109.1	62	0.5	**7.8**	54	0.4	**8.3**	71	0.5	**11.5**
112	809	7.1	**56.5**	819	6.0	**92.8**	565	4.1	**95.0**
113	4,428	38.8	**62.5**	4,125	30.3	**74.4**	3,512	25.2	**80.7**
113 tb	805	7.1	**67.9**	30	0.2	**34.5**	685	4.9	**80.7**
113 inf	519	4.5	**58.4**	747	5.5	**40.4**	404	2.9	**72.8**
113 others	3,089	27.1	**62.5**	13,600	100	**63.9**	2,423	17.4	**82.1**
114	139	1.2	**51.9**	2,036	15.0	**84.8**	7	0.1	**21.9**
116	750	6.6	**34.9**	3,953	29.1	**83.1**	643	4.6	**47.3**

Table 2.5: Results of SEM in key populations at increased risk of HIV (KPs) under codes 101.2, 102, 103, 104 and 105.2 in the regions of Ukraine, 2021							
Region (oblast, city)	Persons tested, total *	Persons from KPs tested		HIV+ persons detected, total *	HIV+ persons from KPs		
		Persons tested	% of all persons tested		HIV+ persons detected	% of all detected persons	% of HIV+ persons persons
Ukraine	1,176,682	107,257	**9.1**	18,178	4,937	27	**4.6**
Vinnytsia oblast	31,010	475	**1.5**	239	15	6	**3.2**
Volyn oblast	24,798	215	**0.9**	142	24	17	**11.2**
Dnipropetrovsk oblast	139,299	30,406	**21.8**	3,618	1,211	33	**4.0**
Donetsk oblast	84,154	2,658	**3.2**	1,124	199	18	**7.5**
Zhytomyr oblast	33,316	5,051	**15.2**	346	19	5	**0.4**
Zakarpattia oblast	10,033	554	**5.5**	130	2	2	**0.4**
Zaporizhzhia oblast	61,869	2,399	**3.9**	479	152	32	**6.3**
Ivano-Frankivsk oblast	16,099	265	**1.6**	107	17	16	**6.4**
Kyiv oblast	38,855	2,264	**5.8**	1,140	524	46	**23.1**
Kirovohrad oblast	31,258	751	**2.4**	367	54	15	**7.2**
Luhansk oblast	27,293	1,711	**6.3**	152	17	11	**1.0**
Lviv oblast	43,626	6,106	**14.0**	537	107	20	**1.8**
Mykolaiv oblast	49,496	2,468	**5.0**	699	61%	9	**2.5**
Odesa oblast	120,375	12,041	**10.0**	4,867	1,609	33	**13.4**
Poltava oblast	21,982	2,738	**12.5**	331	35	11	**1.3**
Rivne oblast	27,139	217	**0.8**	168	8	5	**3.7**
Sumy oblast	25,183	1,303	**5.2**	147	9	6	**0.7**
Ternopil oblast	12,502	310	**2.5**	68	7	10	**2.3**
Kharkiv oblast	63,129	2,265	**3.6**	738	211	29	**9.3**
Kherson oblast	28,625	939	**3.3**	482	194	40	**20.7**
Khmelnytskyi oblast	20,042	1,007	**5.0**	237	15	6	**1.5**
Cherkasy oblast	33,509	1,188	**3.5**	273	27	10	**2.3**
Chernivtsi oblast	21,197	4,483	**21.1**	70	3	4	**0.1**
Chernihiv oblast	39,802	2,741	**6.9**	315	36	11	**1.3**
Kyiv city	172,091	22,702	**13.2**	1,402	381	27	**1.7**
** excluding donors and pregnant women (codes 108, 109)*							

Table 2.6: Results of SEM in persons who had heterosexual contacts with HIV-positive persons in the regions of Ukraine, 2021

Region (oblast, city)	Code 101.1 (persons who had heterosexual contacts with PLHIV)		
	persons tested	HIV+ persons detected	
		number	%
Ukraine	25,680	2,418	**9.4**
Vinnytsia oblast	224	24	**10.7**
Volyn oblast	96	17	**17.7**
Dnipropetrovsk oblast	3,209	594	**18.5**
Donetsk oblast	2,225	201	**9.0**
Zhytomyr oblast	273	25	**9.2**
Zakarpattia oblast	43	21	**48.8**
Zaporizhzhia oblast	589	56	**9.5**
Ivano-Frankivsk oblast	74	9	**12.2**
Kyiv oblast	1,514	108	**7.1**
Kirovohrad oblast	290	48	**16.6**
Luhansk oblast	252	18	**7.1**
Lviv oblast	245	23	**9.4**
Mykolaiv oblast	1,059	122	**11.5**
Odesa oblast	1,543	647	**41.9**
Poltava oblast	4,442	102	**2.3**
Rivne oblast	78	13	**16.7**
Sumy oblast	280	17	**6.1**
Ternopil oblast	67	8	**11.9**
Kharkiv oblast	275	34	**12.4**
Kherson oblast	686	43	**6.3**
Khmelnytskyi oblast	156	21	**13.5**
Cherkasy oblast	541	46	**8.5**
Chernivtsi oblast	22	3	**13.6**
Chernihiv oblast	1,807	87	**4.8**
Kyiv city	5,690	131	**2.3**

Table 2.7: Results of SEM in people who inject drugs (PWID) in the regions of Ukraine, 2021

Region (oblast, city)	Code 102 (PWID)		
	persons tested	HIV+ persons detected	
		number	%
Ukraine	67,491	4,327	**6.4**
Vinnytsia oblast	150	11	**7.3**
Volyn oblast	84	21	**25.0**
Dnipropetrovsk oblast	20,730	1,091	**5.3**
Donetsk oblast	2,024	185	**9.1**
Zhytomyr oblast	3,668	15	**0.4**
Zakarpattia oblast	263	0	**0.0**
Zaporizhzhia oblast	1,262	140	**11.1**
Ivano-Frankivsk oblast	91	4	**4.4**
Kyiv oblast	1,307	454	**34.7**
Kirovohrad oblast	457	52	**11.4**
Luhansk oblast	1,287	17	**1.3**
Lviv oblast	2,771	62	**2.2**
Mykolaiv oblast	759	43	**5.7**
Odesa oblast	9,588	1,529	**15.9**
Poltava oblast	1,064	22	**2.1**
Rivne oblast	133	6	**4.5**
Sumy oblast	759	6	**0.8**
Ternopil oblast	224	5	**2.2**
Kharkiv oblast	831	179	**21.5**
Kherson oblast	692	188	**27.2**
Khmelnytskyi oblast	128	9	**7.0**
Cherkasy oblast	349	23	**6.6**
Chernivtsi oblast	3,711	3	**0.08**
Chernihiv oblast	2,013	23	**1.1**
Kyiv city	13,146	239	**1.8**

Table 2.8: Results of SEM in persons who had homosexual contacts (MSM) in the regions of Ukraine, 2021

Region (oblast, city)	Codes 101.2 + 103 (MSM)		
	persons tested	HIV+ persons detected	
		number	%
Ukraine	14,748	430	**2.9**
Vinnytsia oblast	33	4	**12.1**
Volyn oblast	32	3	**9.4**
Dnipropetrovsk oblast	217	38	**17.5**
Donetsk oblast	138	9	**6.5**
Zhytomyr oblast	618	2	**0.3**
Zakarpattia oblast	13	2	**15.4**
Zaporizhzhia oblast	151	8	**5.3**
Ivano-Frankivsk oblast	32	11	**34.4**
Kyiv oblast	327	66	**20.2**
Kirovohrad oblast	25	0	**0.0**
Luhansk oblast	3	0	**0.0**
Lviv oblast	2,267	41	**1.8**
Mykolaiv oblast	249	17	**6.8**
Odesa oblast	788	54	**6.9**
Poltava oblast	494	2	**0.4**
Rivne oblast	38	1	**2.6**
Sumy oblast	56	0	**0.0**
Ternopil oblast	29	2	**6.9**
Kharkiv oblast	422	24	**5.7**
Kherson oblast	41	6	**14.6**
Khmelnytskyi oblast	49	2	**4.1**
Cherkasy oblast	52	1	**1.9**
Chernivtsi oblast	445	0	**0.0**
Chernihiv oblast	110	13	**11.8**
Kyiv city	8,119	124	**1.5**

Table 2.9: Results of SEM in persons with symptoms of/infected with sexually transmitted infections in the regions of Ukraine, 2021

Region (oblast, city)	Code 104 (persons with symptoms of or infected with STI)		
	persons tested	HIV+ persons detected	
		number	%
Ukraine	15,592	151	**1.0**
Vinnytsia oblast	288	0	**0.0**
Volyn oblast	99	0	**0.0**
Dnipropetrovsk oblast	3,443	73	**2.1**
Donetsk oblast	460	3	**0.7**
Zhytomyr oblast	204	2	**1.0**
Zakarpattia oblast	15	0	**0.0**
Zaporizhzhia oblast	950	4	**0.4**
Ivano-Frankivsk oblast	141	2	**1.4**
Kyiv oblast	536	4	**0.7**
Kirovohrad oblast	211	2	**0.9**
Luhansk oblast	394	0	**0.0**
Lviv oblast	275	4	**1.5**
Mykolaiv oblast	1,432	0	**0.0**
Odesa oblast	1,653	22	**1.3**
Poltava oblast	274	4	**1.5**
Rivne oblast	46	1	**2.2**
Sumy oblast	481	3	**0.6**
Ternopil oblast	57	0	**0.0**
Kharkiv oblast	997	4	**0.4**
Kherson oblast	204	0	**0.0**
Khmelnytskyi oblast	830	4	**0.5**
Cherkasy oblast	644	3	**0.5**
Chernivtsi oblast	16	0	**0.0**
Chernihiv oblast	559	0	**0.0**
Kyiv city	1,383	16	**1.2**

Table 2.10: Results of SEM in persons detained in penitentiaries, including pre-trial detention facilities, in the regions of Ukraine, 2021

Region (oblast, city)	Code 112 (prisoners)		
	persons tested	HIV+ persons detected	
		number	%
Ukraine	76,796	595	**0.8**
Vinnytsia oblast	3,059	10	**0.3**
Volyn oblast	1,568	10	**0.6**
Dnipropetrovsk oblast	6,840	109	**1.6**
Donetsk oblast	4,624	50	**1.1**
Zhytomyr oblast	5,580	18	**0.3**
Zakarpattia oblast	517	2	**0.4**
Zaporizhzhia oblast	5,608	31	**0.6**
Ivano-Frankivsk oblast	2	1	**50.0**
Kyiv oblast	1,539	11	**0.0**
Kirovohrad oblast	1,633	11	**0.7**
Luhansk oblast	578	16	**2.8**
Lviv oblast	3,260	35	**1.1**
Mykolaiv oblast	3,198	22	**0.7**
Odesa oblast	3,939	49	**1.2**
Poltava oblast	2,881	21	**0.7**
Rivne oblast	4,490	12	**0.3**
Sumy oblast	2,585	14	**0.5**
Ternopil oblast	887	7	**0.8**
Kharkiv oblast	10,544	82	**0.8**
Kherson oblast	2,464	6	**0.2**
Khmelnytskyi oblast	2,917	7	**0.2**
Cherkasy oblast	1,948	11	**0.6**
Chernivtsi oblast	97	4	**4.1**
Chernihiv oblast	1,513	19	**1.3**
Kyiv city	4,525	37	**0.8**

Table 2.11: Results of SEM in donors of blood and blood components, organs, tissues, other cells and biological fluids in the regions of Ukraine, 2021

Region (oblast, city)	Code 108 (donors)		
	persons tested	HIV+ persons detected	
		number	%
Ukraine	483,364	243	**0.05**
Vinnytsia oblast	15,543	8	**0.05**
Volyn oblast	17,138	3	**0.02**
Dnipropetrovsk oblast	50,204	41	**0.08**
Donetsk oblast	22,004	7	**0.03**
Zhytomyr oblast	10,103	8	**0.08**
Zakarpattia oblast	12,161	8	**0.07**
Zaporizhzhia oblast	23,839	3	**0.01**
Ivano-Frankivsk oblast	10,577	6	**0.06**
Kyiv oblast	20,228	14	**0.07**
Kirovohrad oblast	9,618	7	**0.07**
Luhansk oblast	10,466	8	**0.08**
Lviv oblast	22,524	13	**0.06**
Mykolaiv oblast	15,298	8	**0.05**
Odesa oblast	24,765	21	**0.08**
Poltava oblast	16,202	7	**0.04**
Rivne oblast	10,585	3	**0.03**
Sumy oblast	12,978	19	**0.15**
Ternopil oblast	8,311	4	**0.05**
Kharkiv oblast	30,409	7	**0.02**
Kherson oblast	11,054	1	**0.01**
Khmelnytskyi oblast	20,527	13	**0.06**
Cherkasy oblast	45,066	10	**0.02**
Chernivtsi oblast	9,120	1	**0.01**
Chernihiv oblast	11,388	5	**0.04**
Kyiv city	43,256	18	**0.04**

Table 2.12: Results of SEM in persons with diseases, symptoms or syndromes in the presence of which the patients are offered HTS when seeking medical care at HCFs in the regions of Ukraine, 2021

Region (oblast, city)	Code 113 (persons tested based on clinical indications)		
	persons tested	HIV+ persons detected	
		number	%
Ukraine	433,035	4,354	**1.01**
Vinnytsia oblast	13,668	113	**0.83**
Volyn oblast	5,104	27	**0.53**
Dnipropetrovsk oblast	54,207	649	**1.20**
Donetsk oblast	45,707	349	**0.76**
Zhytomyr oblast	5,440	106	**1.95**
Zakarpattia oblast	1,766	36	**2.04**
Zaporizhzhia oblast	35,464	114	**0.32**
Ivano-Frankivsk oblast	4,739	34	**0.72**
Kyiv oblast	15,034	179	**1.19**
Kirovohrad oblast	17,535	162	**0.92**
Luhansk oblast	7,452	43	**0.58**
Lviv oblast	8,382	244	**2.91**
Mykolaiv oblast	18,041	241	**1.34**
Odesa oblast	61,762	978	**1.58**
Poltava oblast	6,618	88	**1.33**
Rivne oblast	5,345	60	**1.12**
Sumy oblast	8,828	59	**0.67**
Ternopil oblast	2,756	25	**0.91**
Kharkiv oblast	11,056	231	**2.09**
Kherson oblast	11,061	126	**1.14**
Khmelnytskyi oblast	6,752	105	**1.56**
Cherkasy oblast	17,103	81	**0.47**
Chernivtsi oblast	4,273	27	**0.63**
Chernihiv oblast	6,835	43	**0.63**
Kyiv city	58,107	234	**0.40**

Table 2.13: HIV incidence in Ukraine according to official case registration data, 2019–2021*									
Region (oblast, city)	2019			2020			2021		
	abs. value	per 100,000 population	increase rate, %	abs. value	per 100,000 population	increase rate, %	abs. value	per 100,000 population	increase rate, %
Ukraine	16,357	**42.5**	4.1	15,658	**41.1**	-3.7	15,360	**40.6**	-1.2
Vinnytsia oblast	301	**19.2**	6.6	217	**14.0**	-27.2	172	**11.2**	-19.9
Volyn oblast	156	**15.0**	-30.3	139	**13.5**	-10.6	116	**11.3**	-16.2
Dnipropetrovsk oblast	3,640	**113.1**	19.2	3,611	**113.3**	0.1	3,392	**107.5**	-5.1
Donetsk oblast**	1,503	**78.9**	8.0	1,220	**64.8**	-17.9	1,045	**56.2**	-13.2
Zhytomyr oblast	386	**31.5**	-3.7	275	**22.6**	-28.1	245	**20.4**	-10.0
Zakarpattia oblast	93	**7.4**	-21.3	85	**6.8**	-8.4	81	**6.5**	-4.5
Zaporizhzhia oblast	546	**31.8**	-9.5	455	**26.8**	-15.8	429	**25.6**	-4.6
Ivano-Frankivsk oblast	131	**9.5**	-11.0	65	**4.8**	-50.2	90	**6.6**	39.1
Kyiv oblast	777	**44.1**	-6.5	786	**44.4**	0.4	844	**47.4**	6.8
Kirovohrad oblast	581	**61.1**	41.8	407	**43.6**	-29.1	343	**37.3**	-14.6
Luhansk oblast**	184	**26.9**	3.0	123	**18.2**	-32.3	136	**20.4**	12.1
Lviv oblast	409	**16.2**	-10.0	260	**10.4**	-36.2	327	**13.2**	26.4
Mykolaiv oblast	675	**59.4**	-6.9	571	**50.8**	-14.6	501	**45.0**	-11.4
Odesa oblast	2,322	**97.5**	3.2	3,574	**150.9**	54.1	4,210	**178.3**	18.1
Poltava oblast	365	**25.9**	4.6	240	**17.3**	-33.6	225	**16.4**	-5.3
Rivne oblast	157	**13.5**	-26.4	130	**11.3**	-16.9	149	**13.0**	15.1
Sumy oblast	167	**15.4**	-17.0	127	**11.8**	-23.0	124	**11.7**	-1.1
Ternopil oblast	87	**8.3**	25.6	78	**7.5**	-9.8	63	**6.1**	-18.6
Kharkiv oblast	595	**22.2**	5.0	650	**24.5**	10.0	575	**21.9**	-10.8
Kherson oblast	576	**55.3**	36.4	478	**46.3**	-16.2	410	**40.2**	-13.3
Khmelnytskyi oblast	211	**16.6**	-7.2	155	**12.3**	-26.0	136	**10.9**	-11.5
Cherkasy oblast	478	**39.4**	7.9	310	**25.9**	-34.4	239	**20.2**	-22.0
Chernivtsi oblast	83	**9.2**	1.8	52	**5.8**	-37.2	61%	**6.8**	17.8
Chernihiv oblast	444	**43.8**	3.9	398	**40.2**	-9.1	343	**35.2**	-12.5
Kyiv city	1,490	**50.6**	-10.7	1,252	**42.9**	-16.4	1,104	**37.8**	-12.0

* registered incidence excluding children born to HIV-positive mothers whose HIV status has not been established

** the rate is calculated based on the population of the territories of Donetsk and Luhansk oblasts controlled by the Government of Ukraine

Table 2.14: Timeliness of linking HIV-positive persons to care in Ukraine, 2021				
Region (oblast, city)	Percentage of HIV-positive persons linked to care at HCFs of the total number of those detected based on SEM data[1], %	CD4 count testing coverage of HIV+ persons, %	Percentage of PLHIV linked to care (%)	
			with immunosuppression < 200 CD4 cells/µl (of those tested)	with immunosuppression < 350 CD4 cells/µl (of those tested)
Ukraine	**90.8**	**86.2**	**35.3**	**57.29**
Vinnytsia oblast	85.9	69.2	44.5	63.03
Volyn oblast	100.0	97.4	33.6	56.64
Dnipropetrovsk oblast	98.8	85.6	35.9	60.82
Donetsk oblast	102.9	93.9	34.3	55.86
Zhytomyr oblast	83.9	89.8	44.1	61.36
Zakarpattia oblast	72.3	79.0	37.5	62.50
Zaporizhzhia oblast	98.0	88.1	38.6	62.17
Ivano-Frankivsk oblast	96.6	93.3	34.5	55.95
Kyiv oblast	80.5	61.0	22.7	39.22
Kirovohrad oblast	101.0	66.8	35.4	55.90
Luhansk oblast	97.6	77.2	36.2	60.95
Lviv oblast	66.0	98.8	35.6	53.87
Mykolaiv oblast	81.7	81.6	41.3	62.84
Odesa oblast	89.9	85.2	33.7	55.65
Poltava oblast	71.5	92.9	45.9	65.55
Rivne oblast	103.9	91.3	46.3	68.38
Sumy oblast	86.7	78.2	41.2	65.98
Ternopil oblast	94.6	68.3	16.3	46.51
Kharkiv oblast	83.4	93.0	27.9	49.91
Kherson oblast	95.6	94.1	34.7	60.36
Khmelnytskyi oblast	63.2	100.0	30.1	52.94
Cherkasy oblast	103.1	88.7	34.0	46.70
Chernivtsi oblast	95.9	85.2	50.0	65.38
Chernihiv oblast	119.6	99.7	38.6	59.94
Kyiv city	85.6	96.7	39.9	59.36

[1] including children born to HIV-positive mothers whose HIV status has not been established

Table 2.15: Degree of immunosuppression in PLHIV at the time of linkage to care (CD4 count), 2021									
Region (oblast, city, organization)	Number of PLHIV tests when linking to care	of which those with the following degree of immunosuppression based on CD4 count							
		< 200 cells/μl	%	< 350 cells/μl	%	350–499 cells/μl	%	≥ 500 cells/μl	%
Ukraine	13,245	4,680	**35.3**	2,908	22.0	2,438	18.4	3,219	**24.3**
Vinnytsia oblast	119	53	**44.5**	22	18.5	24	20.2	20	**16.8**
Volyn oblast	113	38	**33.6**	26	23.0	19	16.8	30	**26.5**
Dnipropetrovsk oblast	2,902	1,042	**35.9**	723	24.9	521	18.0	616	**21.2**
Donetsk oblast	981	336	**34.3**	212	21.6	196	20.0	237	**24.2**
Zhytomyr oblast	220	97	**44.1**	38	17.3	31	14.1	54	**24.5**
Zakarpattia oblast	64	24	**37.5**	16	25.0	13	20.3	11	**17.2**
Zaporizhzhia oblast	378	146	**38.6**	89	23.5	61%	16.1	82	**21.7**
Ivano-Frankivsk oblast	84	29	**34.5**	18	21.4	16	19.0	21	**25.0**
Kyiv oblast	515	117	**22.7**	85	16.5	76	14.8	237	**46.0**
Kirovohrad oblast	229	81	**35.4**	47	20.5	60	26.2	41	**17.9**
Luhansk oblast	105	38	**36.2**	26	24.8	15	14.3	26	**24.8**
Lviv oblast	323	115	**35.6**	59	18.3	52	16.1	97	**30.0**
Mykolaiv oblast	409	169	**41.3**	88	21.5	74	18.1	78	**19.1**
Odesa oblast	3,587	1,209	**33.7**	787	21.9	658	18.3	933	**26.0**
Poltava oblast	209	96	**45.9**	41	19.6	31	14.8	41	**19.6**
Rivne oblast	136	63	**46.3**	30	22.1	16	11.8	27	**19.9**
Sumy oblast	97	40	**41.2**	24	24.7	15	15.5	18	**18.6**
Ternopil oblast	43	7	**16.3**	13	30.2	16	37.2	7	**16.3**
Kharkiv oblast	535	149	**27.9**	118	22.1	109	20.4	159	**29.7**
Kherson oblast	386	134	**34.7**	99	25.6	87	22.5	66	**17.1**
Khmelnytskyi oblast	136	41	**30.1**	31	22.8	23	16.9	41	**30.1**
Cherkasy oblast	212	72	**34.0**	27	12.7	30	14.2	83	**39.2**
Chernivtsi oblast	52	26	**50.0**	8	15.4	5	9.6	13	**25.0**
Chernihiv oblast	342	132	**38.6**	73	21.3	74	21.6	63	**18.4**
Kyiv city									

Table 2.16: Persons aged 15–24 newly diagnosed with HIV						
Region (oblast, city)	2019		2020		2021	
	number of persons	% of new cases	number of persons	% of new cases	number of persons	% of new cases
Ukraine	733	**4.5**	605	**3.9**	517	**3.4**
Vinnytsia oblast	21	**7.0**	7	**3.2**	11	**6.4**
Volyn oblast	13	**8.3**	14	**10.1**	9	**7.8**
Dnipropetrovsk oblast	78	**2.1**	90	**2.5**	80	**2.4**
Donetsk oblast	61%	**4.1**	37	**3.0**	28	**2.7**
Zhytomyr oblast	24	**6.2**	15	**5.5**	16	**6.5**
Zakarpattia oblast	9	**9.7**	13	**15.3**	6	**7.4**
Zaporizhzhia oblast	23	**4.2**	20	**4.4**	17	**4.0**
Ivano-Frankivsk oblast	13	**9.9**	6	**9.2**	11	**12.2**
Kyiv oblast	34	**4.4**	30	**3.8**	31	**3.7**
Kirovohrad oblast	15	**2.6**	17	**4.2**	9	**2.6**
Luhansk oblast	8	**4.3**	7	**5.7**	6	**4.4**
Lviv oblast	30	**7.3**	24	**9.2**	22	**6.7**
Mykolaiv oblast	23	**3.4**	22	**3.9**	14	**2.8**
Odesa oblast	113	**4.9**	108	**3.0**	105	**2.5**
Poltava oblast	13	**3.6**	5	**2.1**	4	**1.8**
Rivne oblast	15	**9.6**	11	**8.5**	9	**6.0**
Sumy oblast	13	**7.8**	7	**5.5**	8	**6.5**
Ternopil oblast	7	**8.0**	6	**7.7**	5	**7.9**
Kharkiv oblast	31	**5.2**	25	**3.8**	30	**5.2**
Kherson oblast	32	**5.6**	16	**3.3**	10	**2.4**
Khmelnytskyi oblast	8	**3.8**	11	**7.1**	10	**7.4**
Cherkasy oblast	34	**7.1**	18	**5.8**	10	**4.2**
Chernivtsi oblast	6	**7.2**	6	**11.5**	1	**1.6**
Chernihiv oblast	15	**3.4**	15	**3.8**	7	**2.0**
Kyiv city	94	**6.3**	75	**6.0**	58	**5.3**
* excluding children born to HIV-positive mothers whose HIV status has not been established						

Table 2.17: Structure of modes of HIV transmission among citizens of Ukraine (registered cases)

Mode of HIV transmission	Persons with newly diagnosed HIV infection linked to care during the reporting year			Persons diagnosed with HIV infection linked to care as of the end of the reporting year		
	2019	2020	2021	2019	2020	2021
1. Total number of HIV-positive persons, including:	16,357	15,658	15,360	135,902	144,089	150,005
those infected through sexual contacts, of which:	**12,035**	**9,590**	**9,966**	**89,784**	**94,983**	**99,292**
through homosexual contacts	468	393	432	3,004	3,402	3,742
through heterosexual contacts	11,567	9,197	9,534	86,780	91,581	95,550
those infected through parenteral transmission, of which those whose infection was caused by:	**4,218**	**5,964**	**5,325**	**42,123**	**45,116**	**46,758**
injecting drug use	4,214	5,960	5,325	42,073	45,066	46,712
transfusion of blood components and products	1	0	0	11	9	8
transplantation of donor organs, cells, tissues and transfusion of biological fluids	0	0	0	0	0	0
other medical manipulations	0	0	0	6	7	7
occupational exposure	0	0	0	1	1	1
other non-medical interventions	3	4	0	32	33	30
Children born to HIV-positive mothers whose HIV infection diagnosis was confirmed	**80**	**67**	**48**	**3,368**	**3,412**	**3,413**
HIV-positive persons with unknown mode of transmission	**24**	**37**	21	**627**	**578**	**542**
2. Children born to HIV-infected mothers whose HIV infection is being confirmed	2,068	1,930	1,929	4,431	4,261	4,219

Table 2.18: Officially registered HIV cases in people who inject drugs (PWID) and their percentage of newly registered HIV cases

Region (oblast, city)	1997[1]		2008[2]		2021[3]	
	PWID	%	PWID	%	PWID	%
Ukraine (excluding the AR of Crimea and Sevastopol city)	**6,966**	**84.3**	**6,558**	**36.9**	**5325**	**34.7**
Ukraine (including the AR of Crimea and Sevastopol city)	7,448	83.6	7,009	37.0	22	12.8
Vinnytsia oblast	37	72.5	98	31.5	24	20.7
Volyn oblast	90	94.7	71	29.1	1,330	39.2
Dnipropetrovsk oblast	2,042	93.1	1,316	42.7	272	26.0
Donetsk oblast	1,710	81.8	1,295	32.4	40	16.3
Zhytomyr oblast	50	89.3	134	39.4	1	1.2
Zakarpattia oblast	21	7.05	3	7.1	183	42.7
Zaporizhzhia oblast	264	89.2	188	35.7	9	10.0
Ivano-Frankivsk oblast	18	90.0	51	30.7	393	46.6
Kyiv oblast	71	89.9	236	33.7	112	32.7
Kirovohrad oblast	16	76.2	53	22.2	40	29.4
Luhansk oblast	147	86.0	295	43.5	106	32.4
Lviv oblast	51	82.3	155	49.2	67	13.4
Mykolaiv oblast	268	85.6	454	38.2	1,578	37.5
Odesa oblast	769	67.3	431	27.7	41	18.2
Poltava oblast	213	93.0	152	40.2	32	21.5
Rivne oblast	13	68.4	102	47.2	22	17.7
Sumy oblast	19	82.6	55	29.9	7	11.1
Ternopil oblast	30	85.7	68	52.7	298	51.8
Kharkiv oblast	205	74.0	218	42.2	222	54.1
Kherson oblast	64	71.9	233	39.6	7	5.1
Khmelnytskyi oblast	40	81.6	77	38.3	51	21.3
Cherkasy oblast	188	82.5	134	37.5	9	14.8
Chernivtsi oblast	80	94.1	19	21.1	76	22.2
Chernihiv oblast	102	94.4	123	28.1	383	34.7
Kyiv city	458	90.7	597	47.5	22	12.8

[1] the year when the highest number of HIV-positive PWID within the whole period of HIV infection surveillance was registered in Ukraine

[2] the year when a change of the prevalent mode of HIV transmission took place in Ukraine, namely from parenteral transmission when injecting drugs to transmission through sexual contacts, primarily through heterosexual contacts

[3] the rate is calculated excluding children born to HIV-positive mothers whose HIV status is unknown

Table 2.19: Number and rate of HIV and AIDS cases per 100 000 population in the regions according to HCFs' data on PLHIV linked to care

Region (oblast, city)**	2020				2021			
	HIV-positive people linked to care*		including people with AIDS		HIV-positive people linked to care*		including people with AIDS	
	number of persons	(per 100,000 population)	number of persons	(per 100,000 population)	number of persons	(per 100,000 population)	number of persons	(per 100 ,000 population)
Ukraine	144,089	**378.8**	47,778	**125.6**	150,005	**397.5**	47,652	**126.3**
Vinnytsia oblast	2,947	**191.6**	1,428	**92.8**	2,969	**195.1**	1,451	**95.3**
Volyn oblast	2,124	**206.5**	831	**80.8**	2,122	**207.1**	840	**82.0**
Dnipropetrovsk oblast	26,492	**834.8**	8,236	**259.5**	28,275	**900.8**	8,044	**256.3**
Donetsk oblast	12,236	**649.6**	5,697	**302.4**	12,261	**659.7**	5,517	**296.8**
Zhytomyr oblast	3,425	**283.3**	1,149	**95.0**	3,386	**283.0**	1,142	**95.5**
Zakarpattia oblast	718	**57.4**	288	**23.0**	766	**61.4**	297	**23.8**
Zaporizhzhia oblast	4,568	**270.8**	1,682	**99.7**	4,586	**275.3**	1,660	**99.7**
Ivano-Frankivsk oblast	1,120	**82.0**	416	**30.5**	1,159	**85.3**	402	**29.6**
Kyiv oblast	7,625	**429.5**	2,699	**152.0**	7,623	**427.6**	2,811	**157.7**
Kirovohrad oblast	3,384	**365.2**	1,315	**141.9**	3,325	**363.9**	1,283	**140.4**
Luhansk oblast	2,156	**318.9**	560	**82.8**	2,184	**327.5**	555	**83.2**
Lviv oblast	3,718	**149.1**	1,357	**54.4**	3,847	**155.2**	1,458	**58.8**
Mykolaiv oblast	8,228	**735.2**	1,746	**156.0**	8,225	**742.5**	1,687	**152.3**
Odesa oblast	22,629	**956.4**	9,040	**382.1**	25,341	**1,075.1**	9,160	**388.6**
Poltava oblast	3,565	**258.5**	1,002	**72.7**	3,533	**259.1**	1,000	**73.3**
Rivne oblast	1,964	**170.5**	573	**49.7**	1,990	**173.4**	599	**52.2**
Sumy oblast	1,637	**153.6**	504	**47.3**	1,638	**155.8**	508	**48.3**
Ternopil oblast	769	**74.3**	124	**12.0**	791	**77.0**	116	**11.3**
Kharkiv oblast	5,183	**196.1**	1,276	**48.3**	5,462	**208.6**	1,294	**49.4**
Kherson oblast	4,706	**458.5**	1,111	**108.2**	4,760	**468.8**	1,113	**109.6**
Khmelnytskyi oblast	2,208	**176.4**	907	**72.5**	2,302	**185.6**	938	**75.6**
Cherkasy oblast	3,757	**316.1**	1,271	**106.9**	3,807	**324.1**	1,274	**108.5**
Chernivtsi oblast	1,004	**111.7**	318	**35.4**	989	**110.7**	313	**35.0**
Chernihiv oblast	3,894	**396.2**	1,276	**129.8**	4,088	**422.2**	1,265	**130.7**
Kyiv city	14,032	**479.6**	2,972	**101.6**	14,576	**499.0**	2,925	**100.1**

* excluding children born to HIV-positive mothers whose HIV status was not established

** the rate is calculated based on the population of the territories of Donetsk and Luhansk oblasts controlled by the Government of Ukraine

Table 2.19.1: HIV/AIDS cases and deaths due to various causes in children aged 0–18 in the regions of Ukraine									
Region (oblast, city)	New cases in children aged 0–18 in 2021					Under follow-up as of 01.01.2022			
	HIV infection	including		AIDS	Deaths	PLHIV aged 0–18	including		including those diagnosed with AIDS
		aged 0–14	aged 15–17				aged 0–14	aged 15–17	
Ukraine	73	52	21	29	35	2,689	1963	726	748
Vinnytsia oblast	3	1	2	1	2	48	38	10	30
Volyn oblast	3	3	0	0	0	51	39	12	11
Dnipropetrovsk oblast	15	12	3	6	5	516	367	149	127
Donetsk oblast	6	4	2	1	4	267	193	74	76
Zhytomyr oblast	4	1	3	0	3	63	54	9	49
Zakarpattia oblast	1	1	0	1	1	9	6	3	3
Zaporizhzhia oblast	2	1	1	0	0	60	45	15	17
Ivano-Frankivsk oblast	3	3	0	0	0	25	18	7	8
Kyiv oblast	2	2	0	0	2	144	109	35	23
Kirovohrad oblast	0	0	0	0	0	95	74	21	28
Luhansk oblast	1	1	0	0	0	33	22	11	7
Lviv oblast	3	3	0	1	1	68	55	13	20
Mykolaiv oblast	1	0	1	0	0	131	98	33	16
Odesa oblast	4	4	0	9	5	419	316	103	116
Poltava oblast	0	0	0	0	1	64	48	16	9
Rivne oblast	4	3	1	1	1	35	32	3	11
Sumy oblast	2	0	2	0	0	28	20	8	4
Ternopil oblast	0	0	0	0	0	10	8	2	4
Kharkiv oblast	1	0	1	1	3	66	49	17	18
Kherson oblast	4	2	2	0	2	103	81	22	11
Khmelnytskyi oblast	1	0	1	1	0	44	24	20	39
Cherkasy oblast	3	2	1	2	1	73	52	21	22
Chernivtsi oblast	0	0	0	1	1	86	49	37	52
Chernihiv oblast	1	1	0	0	1	84	58	26	14
Kyiv city	9	8	1	4	2	167	108	59	33

Table 2.20: AIDS incidence in Ukraine									
Region (oblast, city)	2019			2020			2021		
	abs. value	per 100,000 population	increase rate, %	abs. value	per 100,000 population	increase rate, %	abs. value	per 100,000 population	increase rate, %
Ukraine	7,511	**19.5**	-14.8	4,139	**10.9**	-44.4	4,151	**11.0**	1.0
Vinnytsia oblast	222	**14.2**	17.0	152	**9.8**	-30.5	113	**7.4**	-24.9
Volyn oblast	133	**12.8**	3.4	61%	**5.9**	-53.9	62	**6.0**	2.0
Dnipropetrovsk oblast	1,443	**44.8**	-15.6	538	**16.9**	-62.4	558	**17.7**	4.8
Donetsk oblast*	930	**48.8**	-5.0	538	**28.6**	-41.5	417	**22.4**	-21.4
Zhytomyr oblast	198	**16.2**	-14.1	122	**10.0**	-37.8	127	**10.6**	5.2
Zakarpattia oblast	46	**3.7**	-41.0	18	**1.4**	-60.7	33	**2.6**	83.8
Zaporizhzhia oblast	213	**12.4**	-28.6	94	**5.5**	-55.4	97	**5.8**	4.4
Ivano-Frankivsk oblast	34	**2.5**	-36.6	11	**0.8**	-67.5	14	**1.0**	27.8
Kyiv oblast	362	**20.6**	-6.1	207	**11.7**	-43.1	316	**17.8**	51.8
Kirovohrad oblast	227	**23.9**	13.7	155	**16.6**	-30.4	85	**9.2**	-44.4
Luhansk oblast*	94	**13.7**	-18.8	36	**5.3**	-61.2	49	**7.3**	38.0
Lviv oblast	248	**9.8**	-17.5	98	**3.9**	-60.1	207	**8.3**	112.3
Mykolaiv oblast	294	**25.9**	-18.9	186	**16.5**	-36.1	178	**16.0**	-3.3
Odesa oblast	1,404	**58.9**	-21.0	977	**41.3**	-30.0	997	**42.2**	2.3
Poltava oblast	84	**6.0**	-40.9	39	**2.8**	-52.9	49	**3.6**	27.0
Rivne oblast	83	**7.2**	-17.7	46	**4.0**	-44.3	67	**5.8**	46.2
Sumy oblast	92	**8.5**	-13.7	57	**5.3**	-37.2	74	**7.0**	31.5
Ternopil oblast	37	**3.5**	-11.8	20	**1.9**	-45.4	24	**2.3**	20.9
Kharkiv oblast	245	**9.1**	-7.8	166	**6.3**	-31.4	147	**5.6**	-10.7
Kherson oblast	194	**18.6**	-9.6	96	**9.3**	-50.0	76	**7.4**	-20.0
Khmelnytskyi oblast	149	**11.7**	-11.1	84	**6.7**	-43.0	82	**6.6**	-1.6
Cherkasy oblast	186	**15.3**	-10.4	85	**7.1**	-53.6	75	**6.3**	-10.7
Chernivtsi oblast	40	**4.4**	-13.4	32	**3.6**	-19.5	36	**4.0**	13.0
Chernihiv oblast	144	**14.2**	-21.0	65	**6.6**	-53.8	66	**6.8**	3.1
Kyiv city	409	**13.9**	-25.3	256	**8.8**	-36.9	202	**6.9**	-21.2

Table 2.21: Causes of death in HIV-positive persons in Ukraine									
Causes of death	**2019**			**2020**			**2021**		
	Total number of deaths	those who received ART		Total number of deaths	those who received ART		Total number of deaths	those who received ART	
		number of persons	%		number of persons	%		number of persons	%
Total number of deaths, including:	**5,943**	**3,555**	**59.8**	**4,995**	**3,647**	**73.0**	**5020**	**4059**	**80.9**
those directly related to HIV infection, including:	**3,097**	**1,751**	**56.5**	**2,340**	**1,625**	**69.4**	**2144**	**1647**	**76.8**
those with clinical stage III of HIV infection	120	56	46.7	226	157	69.5	216	170	78.7
those with clinical stage IV of HIV infection	2,977	1,695	56.9	2,114	1,468	69.4	1,928	1,477	76.6
including due to TB/HIV co-infection	1,448	811	56.0	920	626	68.0	801	622	77.7
those not related to HIV infection, of which:	**2,511**	**1,622**	**64.6**	**2,302**	**1,744**	**75.8**	**2506**	**2110**	**84.2**
tuberculosis	94	46	48.9	94	65	69.1	63	46	73.0
HBV or HCV, virus-related liver cirrhosis	260	165	63.5	223	179	80.3	194	162	83.5
other diseases	**1,779**	**1,146**	**64.4**	**1,562**	**1,176**	**75.3**	**1849**	**1,547**	**83.7**
other causes	**378**	**265**	**70.1**	**423**	**324**	**76.6**	**400**	**355**	**88.8**
unknown cause of death	**335**	**182**	**54.3**	**353**	**278**	**78.8**	**370**	**302**	**81.6**
Percentage of people who injected drugs among the deceased persons		**36.6**			**38.6**			**38.9**	

Table 2.22: AIDS mortality in Ukraine									
Region (oblast, city)	2019			2020			2021		
	abs. value	per 100 thousand population	increase rate, %	abs. value	per 100 thousand population	increase rate, %	abs. value	per 100 thousand population	increase rate, %
Ukraine	2,977	**7.7**	-13.2	2,114	**5.5**	-28.6	1,928	**5.1**	-8.2
Vinnytsia oblast	63	**4.0**	-14.5	57	**3.7**	-8.6	45	**2.9**	-20.2
Volyn oblast	57	**5.5**	1.8	37	**3.6**	-34.9	26	**2.5**	-29.5
Dnipropetrovsk oblast	728	**22.6**	-15.3	450	**14.1**	-37.7	354	**11.2**	-20.5
Donetsk oblast*	269	**14.1**	-18.4	191	**10.1**	-28.2	147	**7.9**	-22.0
Zhytomyr oblast	82	**6.7**	-9.6	44	**3.6**	-45.8	53	**4.4**	21.7
Zakarpattia oblast	11	**0.9**	-2.8	9	**0.7**	-18.0	7	**0.6**	-22.0
Zaporizhzhia oblast	120	**7.0**	-19.6	77	**4.5**	-35.2	76	**4.5**	-0.1
Ivano-Frankivsk oblast	12	**0.9**	-63.6	8	**0.6**	-33.1	10	**0.7**	25.6
Kyiv oblast	125	**7.1**	-5.4	119	**6.7**	-5.5	87	**4.9**	-27.3
Kirovohrad oblast	106	**11.1**	-9.4	96	**10.2**	-8.3	52	**5.6**	-45.1
Luhansk oblast*	51	**7.4**	-5.7	32	**4.7**	-36.5	31	**4.6**	-1.8
Lviv oblast	72	**2.9**	-26.9	55	**2.2**	-23.3	41	**1.6**	-25.1
Mykolaiv oblast	137	**12.1**	-12.0	112	**10.0**	-17.5	98	**8.8**	-11.6
Odesa oblast	442	**18.6**	-12.0	364	**15.3**	-17.5	465	**19.6**	28.1
Poltava oblast	76	**5.4**	-5.2	44	**3.2**	-41.5	45	**3.3**	3.3
Rivne oblast	22	**1.9**	-27.0	23	**2.0**	4.9	15	**1.3**	-34.5
Sumy oblast	34	**3.1**	-10.7	14	**1.3**	-58.3	23	**2.2**	66.5
Ternopil oblast	13	**1.2**	37.7	15	**1.4**	16.1	8	**0.8**	-46.3
Kharkiv oblast	78	**2.9**	-3.2	64	**2.4**	-17.4	72	**2.7**	13.4
Kherson oblast	47	**4.5**	-18.0	35	**3.4**	-24.8	21	**2.1**	-39.4
Khmelnytskyi oblast	54	**4.3**	9.1	43	**3.4**	-19.7	28	**2.2**	-34.3
Cherkasy oblast	54	**4.5**	-14.4	42	**3.5**	-21.3	21	**1.8**	-49.4
Chernivtsi oblast	24	**2.7**	20.5	21	**2.3**	-12.3	22	**2.4**	5.2
Chernihiv oblast	72	**7.1**	-10.0	46	**4.6**	-35.2	54	**5.5**	19.1
Kyiv city	228	7.7	-12.9	116	**3.9**	-49.4	127	**4.3**	9.3

Table 2.23-a: Number and characteristics of patients receiving SMT drugs at state-owned HCFs of Ukraine, 2021											
Oblast	number of patients	diagnosed with HIV infection				diagnosed with HBV		diagnosed with HCV		diagnosed with TB	
		Number	%	of which those receiving ART							
				Number	%	Number	%	Number	%	Number	%
Ukraine	**17,043**	**6,002**	**35.2**	**5,736**	**95.6**	**1,447**	**8.5**	**9,428**	**55.3**	**1,389**	**8.1**
Vinnytsia oblast	524	117	22	108	92	17	3	329	63	13	2
Volyn oblast	269	75	28	67	89	16	6	117	43	46	17
Dnipropetrovsk oblast	3,228	1,478	46	1,420	96	177	5	1,876	58	173	5
Donetsk oblast	855	297	35	291	98	87	10	395	46	47	5
Zhytomyr oblast	501	172	34	167	97	84	17	373	74	20	4
Zakarpattia oblast	44	2	5	2	100	1	2	36	82	0	0
Zaporizhzhia oblast	826	191	23	189	99	47	6	343	42	44	5
Ivano-Frankivsk oblast	453	124	27	117	94	126	28	225	50	46	10
Kyiv city	1,328	496	37	486	98	87	7	635	48	73	5
Kyiv oblast	342	139	41	129	93	11	3	240	70	28	8
Kirovohrad oblast	665	168	25	166	99	48	7	422	63	74	11
Luhansk oblast	358	126	35	118	94	22	6	210	59	35	10
Lviv oblast	728	229	31	189	83	87	12	270	37	120	16
Mykolaiv oblast	1,163	456	39	429	94	135	12	463	40	90	8
Odesa oblast	773	354	46	349	99	52	7	522	68	59	8
Poltava oblast	934	273	29	265	97	14	1	659	71	126	13
Rivne oblast	290	117	40	110	94	17	6	150	52	13	4
Sumy oblast	719	127	18	118	93	63	9	470	65	50	7
Ternopil oblast	134	31	23	29	94	3	2	77	57	23	17
Kharkiv oblast	588	154	26	152	99	54	9	425	72	35	6
Kherson oblast	640	204	32	199	98	167	26	340	53	68	11
Khmelnytskyi oblast	373	104	28	91	88	49	13	97	26	31	8
Cherkasy oblast	760	317	42	300	95	43	6	407	54	115	15
Chernivtsi oblast	162	33	20	33	100	19	12	126	78	23	14
Chernihiv oblast	386	218	56	212	97	21	5	221	57	37	10
Kyiv city	1,328	496	37	486	98	87	7	635	48	73	5

Table 2.23-6: Number and characteristics of patients receiving SMT drugs in the regions of Ukraine, 2021			
Region (oblast, city)	Number of persons linked to care due to opioid use	Number of persons covered by the SMT programme	% of persons covered by SMT services of the total number of persons linked to care
UKRAINE	278,318	19,942	**7.2**
Vinnytsia oblast	5,596	524	**9.4**
Volyn oblast	2,957	269	**9.1**
Dnipropetrovsk oblast	51,826	3,228	**6.2**
Donetsk oblast	11,081	855	**7.7**
Zhytomyr oblast	5,076	501	**9.9**
Zakarpattia oblast	1,547	44	**2.8**
Zaporizhzhia oblast	14,931	826	**5.5**
Ivano-Frankivsk oblast	3,240	453	**14.0**
Kyiv oblast	10,328	397	**3.8**
Kirovohrad oblast	12,677	665	**5.2**
Luhansk oblast	3,132	358	**11.4**
Lviv oblast	10,137	728	**7.2**
Mykolaiv oblast	12,078	1,163	**9.6**
Odesa oblast	26,305	944	**3.6**
Poltava oblast	6,136	934	**15.2**
Rivne oblast	5,436	367	**6.8**
Sumy oblast	15,597	719	**4.6**
Ternopil oblast	4,131	134	**3.2**
Kharkiv oblast	12,730	1,592	**12.5**
Kherson oblast	5,850	640	**10.9**
Khmelnytskyi oblast	6,410	373	**5.8**
Cherkasy oblast	10,235	760	**7.4**
Chernivtsi oblast	3,982	162	**4.1**
Chernihiv oblast	6,420	386	**6.0**
Kyiv city	30,480	2,803	**9.2**

Table 2.24: Indicators of the implementation of the programme for prevention of mother-to-child transmission of HIV in 2021									
Region (oblast, city)	Coverage of pregnant women with HIV testing, %	HIV prevalence in pregnant women, %	Total number of HIV-positive pregnant women	Percentage of pregnant women with HIV-positive status established after 26 weeks, during and after delivery (among new HIV case), %	Percentage of HIV-positive pregnant women who received ART, %	Percentage of HIV-positive pregnant women continuing ART after delivery, %	Number of deliveries in HIV-positive women	Percentage of HIV-positive pregnant women admitted to an obstetric hospital for delivery, %	Percentage of HIV-positive women who had caesarean delivery, %
Ukraine	99.8	**0.72**	1,857	27.3	95.7	94.4	1,904	52.2	40.0
Vinnytsia oblast	100.0	**0.48**	48	40.0	100	96.2	53	54.7	43.4
Volyn oblast	100.0	**0.38**	38	12.5	100	100	38	65.8	44.7
Dnipropetrovsk oblast	97.5	**1.24**	271	33.3	94.1	89.3	290	42.4	32.4
Donetsk oblast	99.5	**1.71**	148	28.9	97.8	97.8	138	57.2	35.5
Zhytomyr oblast	100.0	**0.89**	73	14.8	100	100	73	83.6	16.4
Zakarpattia oblast	99.5	**0.17**	21	21.4	100	92.3	26	46.2	46.2
Zaporizhzhia oblast	99.7	**0.6**	56	31.3	98.2	98.2	57	43.9	38.6
Ivano-Frankivsk oblast	100.0	**0.25**	24	0.0	95.5	95.5	22	36.4	68.2
Kyiv oblast	99.6	**0.51**	67	20.6	98.9	98.9	90	43.3	34.4
Kirovohrad oblast	99.9	**1.1**	61	10.0	94.7	94.7	57	52.6	33.3
Luhansk oblast	99.5	**1.13**	33	30.0	83.3	83.3	30	73.3	36.7
Lviv oblast	100.0	**0.25**	46	18.8	95.6	88.9	45	84.4	51.1
Mykolaiv oblast	100.0	**1.95**	134	10.3	99.1	98.1	108	42.6	30.6
Odesa oblast	100.0	**1.33**	244	42.5	97.4	97.4	274	44.5	55.8
Poltava oblast	100.0	**0.58**	51	40.0	96.4	96.4	56	67.9	35.7
Rivne oblast	99.9	**0.35**	40	22.2	100	100	35	94.3	45.7
Sumy oblast	99.9	**0.61**	33	40.0	97	93	33	84.8	42.4
Ternopil oblast	100.0	**0.06**	4	0.0	100	100	7	71.4	14.3
Kharkiv oblast	99.6	**0.55**	79	33.3	100	100	81	46.9	35.8
Kherson oblast	100.0	**1.37**	81	35.0	93	93	71	57.7	40.8
Khmelnytskyi oblast	99.7	**0.37**	32	18.8	96.8	96.8	31	58.1	58.1
Cherkasy oblast	100.0	**0.99**	68	27.3	93.8	92.2	64	53.1	25
Chernivtsi oblast	100.0	**0.12**	9	0.0	100	100	9	55.6	44.4
Chernihiv oblast	98.1	**0.88**	49	9.1	90.4	90.4	52	51.9	42.3
Kyiv city	100	**0.75**	147	16.2	86	86	164	41.5	47.6

Table 2.25: Results of SEM in pregnant women in the regions of Ukraine, 2021

Region (oblast, city)	Code 109.1 (Pregnant women tested for the first time during pregnancy irrespective of the gestational age)			Code 109.2	Code 109.3
	persons tested	HIV+ results		HIV+ results	HIV+ results
		number	%		
Ukraine	261,972	619	**0.24**	23	2
Vinnytsia oblast	10,213	15	**0.15**	0	0
Volyn oblast	9,787	7	**0.07**	1	0
Dnipropetrovsk oblast	15,586	60	**0.38**	2	1
Donetsk oblast	9,331	34	**0.36**	3	1
Zhytomyr oblast	6,524	25	**0.38**	1	0
Zakarpattia oblast	6,569	10	**0.15**	2	0
Zaporizhzhia oblast	10,164	15	**0.15**	1	0
Ivano-Frankivsk oblast	8,561	5	**0.06**	0	0
Kyiv oblast	17,567	33	**0.19**	1	0
Kirovohrad oblast	11,324	24	**0.21**	0	0
Luhansk oblast	2,564	9	**0.35**	0	0
Lviv oblast	17,139	15	**0.09**	1	0
Mykolaiv oblast	6,801	37	**0.54**	2	0
Odesa oblast	19,431	104	**0.54**	2	0
Poltava oblast	6,526	51	**0.78**	0	0
Rivne oblast	12,130	9	**0.07**	0	0
Sumy oblast	7,533	15	**0.20**	2	0
Ternopil oblast	7,106	2	**0.03**	0	0
Kharkiv oblast	14,874	42	**0.28**	0	0
Kherson oblast	6,907	18	**0.26**	2	0
Khmelnytskyi oblast	9,109	16	**0.18**	0	0
Cherkasy oblast	7,090	10	**0.14**	1	0
Chernivtsi oblast	8,813	2	**0.02**	0	0
Chernihiv oblast	5,405	12	**0.22**	1	0
Kyiv city	24,918	49	**0.20**	1	0

Table 2.26: Results of SEM in pregnant women aged 15-24 in the regions of Ukraine, 2021

Region (oblast, city)	Codes 109.1.1 + 109.1.2 (pregnant women aged 15–24)		
	persons tested	HIV+ results	
		number	%
Ukraine	54,863	107	**0.20**
Vinnytsia oblast	2,494	2	**0.08**
Volyn oblast	969	3	**0.31**
Dnipropetrovsk oblast	3,201	13	**0.41**
Donetsk oblast	1,336	8	**0.60**
Zhytomyr oblast	1,541	6	**0.39**
Zakarpattia oblast	1,673	5	**0.30**
Zaporizhzhia oblast	814	1	**0.12**
Ivano-Frankivsk oblast	8,219	0	**0.00**
Kyiv oblast	4,231	8	**0.19**
Kirovohrad oblast	1,088	5	**0.46**
Luhansk oblast	668	1	**0.15**
Lviv oblast	6,045	3	**0.05**
Mykolaiv oblast	1,356	6	**0.44**
Odesa oblast	1,889	12	**0.64**
Poltava oblast	698	7	**1.00**
Rivne oblast	1,189	3	**0.25**
Sumy oblast	1,642	1	**0.06**
Ternopil oblast	2,129	1	**0.05**
Kharkiv oblast	2,832	5	**0.18**
Kherson oblast	1,854	3	**0.16**
Khmelnytskyi oblast	2,930	4	**0.14**
Cherkasy oblast	1,200	1	**0.08**
Chernivtsi oblast	3,095	0	**0.00**
Chernihiv oblast	504	2	**0.40**
Kyiv city	1,266	7	**0.55**

Table 2.27: Indicators of the implementation of the programme for prevention of mother-to-child transmission of HIV in 2021 (continued)					
Region (oblast, city)	Number of live births in HIV-infected women	Number of new cases of perinatal HIV infection for 100,000 live births	Percentage of children born to HIV-positive mothers who received the ARV prophylaxis	Percentage of children born to HIV-positive mothers covered by early diagnosis within the first 2 months from birth	Percentage of HIV-positive children younger than 18 years of age who are linked to care and live in families (with parents, relatives, adopted)
Ukraine	1,918	**8.8**	99.2	81.9	93.8
Vinnytsia oblast	53	**0**	100	92.3	93.8
Volyn oblast	37	**10.2**	100	91.4	92.3
Dnipropetrovsk oblast	290	**30.8**	98.3	61.2	94.8
Donetsk oblast	141	**9.9**	100	91	88.4
Zhytomyr oblast	73	**0**	100	100	95.2
Zakarpattia oblast	26	**0**	100	100	77.8
Zaporizhzhia oblast	60	**0**	100	100	96.7
Ivano-Frankivsk oblast	23	**0**	100	82.6	100
Kyiv oblast	89	**7.9**	97.8	89.4	94.5
Kirovohrad oblast	58	**18.1**	100	56.8	91.6
Luhansk oblast	31	**29.8**	100	100	90.9
Lviv oblast	46	**5.1**	100	100	97.1
Mykolaiv oblast	107	**14.2**	100	100	96.2
Odesa oblast	278	**25.9**	98.6	62.8	89
Poltava oblast	56	**0**	100	65.8	96.9
Rivne oblast	38	**0**	100	62.2	100
Sumy oblast	33	**0**	100	77.3	82.8
Ternopil oblast	7	**0**	100	100	70
Kharkiv oblast	81	**12.9**	100	30.5	98.5
Kherson oblast	70	**28.1**	100	98.5	97.1
Khmelnytskyi oblast	32	**0**	96.9	100	100
Cherkasy oblast	63	**0**	100	93.4	94.5
Chernivtsi oblast	9	**0**	100	100	100
Chernihiv oblast	53	**0**	98.1	98.1	97.6
Kyiv city	164	**6.8**	98.2	94.5	97.6

Table 2.28: Number of new cases of HIV due to mother-to-child transmission based on PCR test results (per 100,000 live births)

Region (oblast, city)	2020			2021		
	Number of live births[1]	Number of new HIV infections[2]	Rate per 100,000 live births	Number of live births[1]	Number of new HIV infections[2]	Rate per 100,000 live births
Ukraine	283,587	24	**8.5**	271,983	24	**8.8**
Vinnytsia oblast	11,457	2	**17.5**	10,529	0	**0.0**
Volyn oblast	10,754	0	**0.0**	9,852	1	**10.2**
Dnipropetrovsk oblast	21,028	5	**23.8**	19,508	6	**30.8**
Donetsk oblast	9,650	1	**10.4**	10,134	1	**9.9**
Zhytomyr oblast	9,318	0	**0.0**	8,544	0	**0.0**
Zakarpattia oblast	13,175	0	**0.0**	12,631	0	**0.0**
Zaporizhzhia oblast	10,438	0	**0.0**	9,571	0	**0.0**
Ivano-Frankivsk oblast	11,850	2	**16.9**	10,545	0	**0.0**
Kyiv oblast	10,303	1	**9.7**	12,632	1	**7.9**
Kirovohrad oblast	5,820	3	**51.5**	5,533	1	**18.1**
Luhansk oblast	3,027	2	**66.1**	3,356	1	**29.8**
Lviv oblast	20,906	1	**4.8**	19,440	1	**5.1**
Mykolaiv oblast	7,558	0	**0.0**	7,029	1	**14.2**
Odesa oblast	20,641	0	**0.0**	19,280	5	**25.9**
Poltava oblast	8,688	0	**0.0**	8,063	0	**0.0**
Rivne oblast	12,161	0	**0.0**	11,691	0	**0.0**
Sumy oblast	6,040	0	**0.0**	5,484	0	**0.0**
Ternopil oblast	7,674	1	**13.0**	7,275	0	**0.0**
Kharkiv oblast	16,607	0	**0.0**	15,482	2	**12.9**
Kherson oblast	7,090	2	**28.2**	7,113	2	**28.1**
Khmelnytskyi oblast	9,782	0	**0.0**	8,681	0	**0.0**
Cherkasy oblast	7,303	0	**0.0**	6,825	0	**0.0**
Chernivtsi oblast	8,073	0	**0.0**	7,836	0	**0.0**
Chernihiv oblast	5,894	0	**0.0**	5,338	0	**0.0**
Kyiv city	28,350	4	**14.1**	29,611	2	**6.8**

[1] Source: reporting form No. 21 (annual) “Report on Medical Care for Pregnant, Parturient and Postpartum Women”.

[2] Source: reporting form No. 63 (annual) “Prevention of Mother-to-Child Transmission of HIV”

Table 2.29: Rate of mother-to-child transmission of HIV in Ukraine in a cohort of 2019 and early PCR diagnosis (2021)						
Region (oblast, city)	Cohort of children born in 2019 (PCR, ELISA, IB)			Children born in 2021 (early PCR diagnosis)		
	Number of HIV-positive children	MTCT rate, %	MTCT rate av[1]%	PCR coverage, %	Number of HIV-positive children	MTCT rate, %
Ukraine	48	**2.6**	3.1	87.4	24	**1.3**
Vinnytsia oblast	1	**1.5**	2.2	100.0	0	**0.0**
Volyn oblast	0	**0.0**	1.0	94.6	1	**2.9**
Dnipropetrovsk oblast	11	**4.0**	4.5	68.6	6	**3.0**
Donetsk oblast	5	**2.7**	3.3	89.4	1	**0.8**
Zhytomyr oblast	1	**1.6**	1.9	100.0	0	**0.0**
Zakarpattia oblast	0	**0.0**	0.0	96.2	0	**0.0**
Zaporizhzhia oblast	0	**0.0**	0.5	100.0	0	**0.0**
Ivano-Frankivsk oblast	0	**0.0**	0.0	100.0	0	**0.0**
Kyiv oblast	2	**3.6**	4.6	95.5	1	**1.2**
Kirovohrad oblast	2	**3.5**	3.8	75.9	1	**2.3**
Luhansk oblast	0	**0.0**	2.4	93.5	1	**3.4**
Lviv oblast	1	**1.7**	3.2	100.0	1	**2.2**
Mykolaiv oblast	3	**3.0**	2.2	100.0	1	**0.9**
Odesa oblast	6	**2.3**	3.7	78.4	5	**2.3**
Poltava oblast	0	**0.0**	4.9	89.3	0	**0.0**
Rivne oblast	2	**7.1**	1.8	90.2	0	**0.0**
Sumy oblast	2	**7.1**	2.5	100.0	0	**0.0**
Ternopil oblast	0	**0.0**	2.3	100.0	0	**0.0**
Kharkiv oblast	1	**2.0**	3.7	75.3	2	**3.3**
Kherson oblast	3	**3.6**	3.7	100.0	2	**2.9**
Khmelnytskyi oblast	0	**0.0**	1.8	93.8	0	**0.0**
Cherkasy oblast	1	**1.8**	1.5	96.8	0	**0.0**
Chernivtsi oblast	2	**15.4**	21.9	100.0	0	**0.0**
Chernihiv oblast	3	**5.5**	2.9	100.0	0	**0.0**
Kyiv city	2	**1.3**	1.6	88.4	2	**1.4**

[1] MTCT rate is an average rate calculated using the rank aggregation technique based on the numbers of children with established HIV status and HIV-positive children for 2016–2018 by region and in the country in general. This method is used for observations, which do not always allow identifying a clear trend in the dynamics of a particular phenomenon for a long time.

Table 2.30: Linkage to care of children born to HIV-positive mothers at healthcare facilities, 2021						
Region (oblast, city)	New disease cases		Deregistered due to the absence of HIV infection	Under follow-up as of 01.01.2022		
	HIV infection*	AIDS		children diagnosed with HIV infection		children in the process of HIV diagnosis confirmation
				total number of children*	including those with AIDS	
Ukraine	48	28	1,863	3,413	1,051	4,219
Vinnytsia oblast	0	0	64	56	39	84
Volyn oblast	2	0	32	39	11	57
Dnipropetrovsk oblast	13	7	266	718	229	547
Donetsk oblast	1	0	167	311	98	245
Zhytomyr oblast	1	0	49	63	22	127
Zakarpattia oblast	0	0	12	9	3	53
Zaporizhzhia oblast	1	0	64	76	23	99
Ivano-Frankivsk oblast	3	0	16	25	8	47
Kyiv oblast	2	1	92	182	80	402
Kirovohrad oblast	0	0	53	106	28	116
Luhansk oblast	1	0	16	53	10	57
Lviv oblast	2	0	51	67	19	197
Mykolaiv oblast	0	0	114	253	28	187
Odesa oblast	4	10	278	543	174	834
Poltava oblast	0	0	34	64	9	107
Rivne oblast	3	1	33	34	11	62
Sumy oblast	0	0	39	28	4	54
Ternopil oblast	0	0	13	8	4	11
Kharkiv oblast	0	1	58	79	22	181
Kherson oblast	2	0	73	125	18	117
Khmelnytskyi oblast	1	1	47	60	52	65
Cherkasy oblast	3	2	58	101	23	120
Chernivtsi oblast	0	1	16	102	54	26
Chernihiv oblast	1	0	54	84	16	107
Kyiv city	8	4	164	227	66	317

* excluding children born to HIV-positive mothers whose HIV status has not been established

Table 2.31: Total number of persons receiving ART in Ukraine (by source of receipt of the antiretroviral drugs) as of 01.01.2022							
Region (oblast, city, institution)	**MoH and NAMS of Ukraine**			**SCES of Ukraine**			**Total (MoH, NAMS and SCES of Ukraine)**
	State budget	Global Fund	Total, MoH and NAMS of Ukraine	Global Fund	State budget	Total, SCES of Ukraine	
Ukraine	**107,208**	**19,269**	**126,477**	**2,433**	**1,329**	**3,762**	**130,239**
Vinnytsia oblast	1,730	484	2,214	63	49	112	2,326
Volyn oblast	1,359	253	1,612	36	9	45	1,657
Dnipropetrovsk oblast	20,108	4,126	24,234	531	280	811	25,045
Donetsk oblast	9,715	1,450	11,165	145	127	272	11,437
Zhytomyr oblast	2,084	447	2,531	152	74	226	2,757
Zakarpattia oblast	572	38	610	4	7	11	621
Zaporizhzhia oblast	3,470	664	4,134	109	87	196	4,330
Ivano-Frankivsk oblast	938	23	961	9	3	12	973
Kyiv oblast	5,260	972	6,232	166	47	213	6,445
Kirovohrad oblast	2,467	295	2,762	82	34	116	2,878
Luhansk oblast	1,602	312	1,914	12	10	22	1,936
Lviv oblast	2,173	534	2,707	87	57	144	2,851
Mykolaiv oblast	5,960	879	6,839	90	77	167	7,006
Odesa oblast	17,098	2,159	19,257	145	89	234	19,491
Poltava oblast	2,652	441	3,093	97	34	131	3,224
Rivne oblast	1,368	219	1,587	54	21	75	1,662
Sumy oblast	1,033	151	1,184	57	11	68	1,252
Ternopil oblast	490	85	575	24	20	44	619
Kharkiv oblast	2,897	1,000	3,897	262	128	390	4,287
Kherson oblast	3,351	655	4,006	173	92	265	4,271
Khmelnytskyi oblast	1,369	400	1,769	31	24	55	1,824
Cherkasy oblast	2,935	560	3,495	75	32	107	3,602
Chernivtsi oblast	593	132	725	6	7	13	738
Chernihiv oblast	3,196	483	3,679	23	10	33	3,712
Kyiv city	10,196	1,744	11,940				11,940
Okhmatdyt NSCH	218	25	243				243
IEID of The NAMS of Ukraine	2,374	738	3,112				3,112

Table 2.32: Number of sites providing ART services				
Region (oblast, city)	Number of ART sites			
	as of 01.01.2019	as of 01.01.2020	as of 01.01.2021	as of 01.01.2022
Ukraine	**387**	**439**	**393**	**390**
Vinnytsia oblast	6	9	8	7
Volyn oblast	7	7	6	5
Dnipropetrovsk oblast	43	49	39	38
Donetsk oblast	22	24	23	25
Zhytomyr oblast	5	5	5	5
Zakarpattia oblast	1	1	1	5
Zaporizhzhia oblast	18	27	19	18
Ivano-Frankivsk oblast	7	7	7	7
Kyiv oblast	32	29	28	31
Kirovohrad oblast	10	11	11	11
Luhansk oblast	5	17	14	11
Lviv oblast	10	10	9	8
Mykolaiv oblast	15	27	28	28
Odesa oblast	53	39	34	38
Poltava oblast	16	25	24	24
Rivne oblast	7	7	8	9
Sumy oblast	8	8	10	9
Ternopil oblast	6	6	6	6
Kharkiv oblast	11	11	11	10
Kherson oblast	23	25	21	20
Khmelnytskyi oblast	12	12	7	7
Cherkasy oblast	27	27	26	22
Chernivtsi oblast	1	1	1	1
Chernihiv oblast	12	25	18	16
Kyiv city	28	28	27	27
National level HCFs	2	2	2	2

Table 2.33: Number of PLHIV receiving ART in the regions of Ukraine and ART coverage rate in patients from the follow-up group as of 01.01.2021

Region (oblast, city)	2020				2021			
	Number of PLHIV linked to care[1]	Number of PLHIV receiving ART		ART coverage, %[2]	Number of PLHIV linked to care[1]	Number of PLHIV receiving ART		ART coverage, %[2]
		total number of persons	of which children aged 0–17			total number of persons	of which children aged 0–17	
Ukraine	**144,089**	**121,949**	**2,844**	**85**	**150,005**	**130,239**	**2,721**	**87**
Vinnytsia oblast	2,947	2,119	48	**76**	2,969	2,326	48	**78**
Volyn oblast	2,124	1,525	37	**74**	2,122	1,657	40	**78**
Dnipropetrovsk oblast	26,492	22,327	527	**87**	28,275	25,045	498	**89**
Donetsk oblast	12,236	10,777	263	**90**	12,261	11,437	256	**93**
Zhytomyr oblast	3,425	2,426	67	**77**	3,386	2,757	65	**81**
Zakarpattia oblast	718	541	9	**76**	766	621	10	**81**
Zaporizhzhia oblast	4,568	3,956	59	**91**	4,586	4,330	58	**94**
Ivano-Frankivsk oblast	1,120	938	22	**86**	1,159	973	22	**84**
Kyiv oblast	7,625	5,694	154	**77**	7,623	6,445	145	**85**
Kirovohrad oblast	3,384	2,603	98	**80**	3,325	2,878	94	**87**
Luhansk oblast	2,156	1,882	37	**88**	2,184	1,936	34	**89**
Lviv oblast	3,718	2,412	67	**68**	3,847	2,851	66	**74**
Mykolaiv oblast	8,228	6,651	149	**83**	8,225	7,006	139	**85**
Odesa oblast	22,629	16,742	411	**75**	25,341	19,491	385	**77**
Poltava oblast	3,565	2,972	68	**86**	3,533	3,224	63	**91**
Rivne oblast	1,964	1,465	30	**79**	1,990	1,662	34	**84**
Sumy oblast	1,637	1,130	27	**73**	1,638	1,252	27	**76**
Ternopil oblast	769	573	13	**81**	791	619	10	**78**
Kharkiv oblast	5,183	3,628	60	**76**	5,462	4,287	62	**78**
Kherson oblast	4,706	3,794	105	**86**	4,760	4,271	101	**90**
Khmelnytskyi oblast	2,208	1,709	45	**80**	2,302	1,824	42	**79**
Cherkasy oblast	3,757	3,413	76	**94**	3,807	3,602	72	**95**
Chernivtsi oblast	1,004	840	92	**85**	989	738	84	**75**
Chernihiv oblast	3,894	3,438	81	**89**	4,088	3,712	79	**91**
Kyiv city (Department of Health)	14,032	11,504	171	**82**	14,576	11,940	159	**82**
Okhmatdyt NSCH		236	124			243	128	
Institute of Epidemiology and Infectious Diseases of The NAMS of Ukraine		3,087	48			3,112	0	
SCES		3,567	4			3,762	0	

[1] excluding children born to HIV-positive mothers whose HIV status was not established

[2] the rate is calculated based on the population of the territories of Donetsk and Luhansk oblasts controlled by the Government of Ukraine

Table 2.34: Percentage of persons with HIV/AIDS receiving antiretroviral therapy 12, 24 and 36 months after the initiation of the therapy from the cohort of patients who initiated ART[54]			
Oblast	Retention on ART in 12 months in persons who initiated ART from 01.01.2020 to 31.12.2020.	Retention on ART in 24 months in persons who initiated ART from 01.01.2019 to 31.12.2019.	Retention on ART in 36 months in persons who initiated ART from 01.01.2018 to 31.12.2018.
Ukraine	85%	80%	77%
Vinnytsia oblast	81%	80%	72%
Volyn oblast	89%	70%	68%
Dnipropetrovsk oblast	85%	75%	77%
Donetsk oblast	81%	77%	73%
Zhytomyr oblast	89%	75%	71%
Zakarpattia oblast	91%	73%	73%
Zaporizhzhia oblast	78%	77%	82%
Ivano-Frankivsk oblast	89%	75%	67%
Kyiv oblast	96%	90%	78%
Kirovohrad oblast	94%	89%	80%
Luhansk oblast	84%	83%	76%
Lviv oblast	88%	81%	76%
Mykolaiv oblast	83%	78%	74%
Odesa oblast	70%	74%	84%
Poltava oblast	88%	79%	79%
Rivne oblast	95%	83%	81%
Sumy oblast	92%	76%	72%
Ternopil oblast	86%	84%	75%
Kharkiv oblast	80%	78%	73%
Kherson oblast	83%	71%	72%
Khmelnytskyi oblast	88%	83%	78%
Cherkasy oblast	80%	79%	78%
Chernivtsi oblast	61%	81%	74%
Chernihiv oblast	83%	76%	78%
Kyiv city (Department of Health)	81%	82%	78%
Okhmatdyt NSCH	100%	100%	100%
Institute of Epidemiology and Infectious Diseases of The NAMS of Ukraine	81%	85%	88%

[54] **Reporting data according to form 57. The report includes data from all regions excluding the facilities of the SCES of Ukraine (*SSD IS, PEPFAR group of indicators).**

Annex 3

Meaning of the indicators of the National Global AIDS Response Progress Report, 2017–2021 (GAM)

No.	Indicator	Description of the indicator	2017	2018	2019	2020	2021
1.	Combined prophylaxis of HIV infection for everybody						
1.1.	**HIV incidence**[55]	Number of people newly infected with HIV in the reporting period per 1,000 uninfected population	-	-	0.2841	0.2246	0.1552
1.2.	**Estimates of the size of key populations**	**1.2A.** Estimated number of SWs	-	86,600	-	-	-
		1.2B. Estimated number of MSM	-	179,400	-	-	-
		1.2C. Estimated number of PWID	-	350,300	-	-	-
		1.2D. Estimated number of TP	-	-	-	8,200	-
		1.2E. Number of prisoners[56]	-	-	52,863	48,714	46,931
1.3.	**HIV prevalence among key populations**	**1.3A.** Percentage of SWs living with HIV	5.2	-	-	-	3.1
		1.3B. Percentage of MSM living with HIV	7.5	-	-	-	3.9
		1.3C. Percentage of PWID living with HIV	22.6	-	-	20.3	-
		1.3D. Percentage of TP living with HIV	-	-	-	1.7	-
		1.3E. Percentage of prisoners living with HIV[57]	3.3	8.0	7.2	8.0	8.5
1.4.	**HIV testing among key populations**	**1.4A.** Percentage of SWs who were tested for HIV in the past 12 months, or who know that they are living with HIV	58.2	-	-	-	64.2
		1.4B. Percentage of MSM who were tested for HIV in the past 12 months, or who know that they are living with HIV	39.2	-	-	-	72.0
		1.4C. Percentage of PWID who were tested for HIV in the past 12 months, or who know that they are living with HIV	43.1	-	-	51.0	-
		1.4D. Percentage of TP who were tested for HIV in the past 12 months, or who know that they are living with HIV	-	-	-	52.7	-

[55] Based on forecasting results obtained using Spectrum programme

[56] According to the State Criminal-Executive Service of Ukraine

[57] According to the State Criminal-Executive Service of Ukraine (since 2018)

No.	Indicator	Description of the indicator	2017	2018	2019	2020	2021
1.5.	**Condom use among key populations**	**1.5A.** Percentage of sex workers reporting using a condom with their most recent client	93.9	-	-	-	92.2
		1.5B. Percentage of men reporting using a condom the last time they had anal sex with a male partner	77.7	-	-	-	76.9
		1.5C. Percentage of PWID reporting using a condom the last time they had sexual intercourse	43.9	-	-	43.4	-
		1.5D. Percentage of transgender people reporting using a condom during their most recent sexual intercourse or anal sex	-	-	-	79.4	-
1.6.	**Coverage of HIV prevention programmes among key populations**	**1.6A. Coverage of HIV prevention programmes among SWs**					
		I. Behavioural surveillance or another special survey. Percentage of sex workers who report receiving at least two of the listed HIV prevention services from a nongovernmental organization, healthcare provider or other sources	**-**	37.2[58]	-	-	30.2
		II. Programme data. Percentage of sex workers reached with HIV prevention interventions designed for SWs	48.4	46.0	52.5	57.3	63.8
		Number of sex workers reached with HIV prevention interventions designed for SWs	38,742	39,832	45,446	49,608	55,283
		Number of condoms and lubricants distributed among SWs	7,682,148	5,385,137	7,166,555	5,389,881	6,724,694
		1.6B. Coverage of HIV prevention programmes among MSM					
		I. Behavioural surveillance or another special survey. Percentage of MSM who report receiving at least two of the listed HIV prevention services from a nongovernmental organization, healthcare provider or other sources	-	-	28[59]	-	27.4[60]

[58] Based on answers to the question "Are you a client of an organization performing HIV prevention among sex workers, that is, do you have a client's plastic card that you use to receive condoms or other services from social workers?" Source: Моніторинг поведінки та поширення ВІЛ-інфекції серед осіб, які надають сексуальні послуги за винагороду / Середа Ю.В., Сазонова Я.О. – К.: МБФ «Альянс громадського здоров'я», 2017. – 142 с.

[59] Based on answers of MSM who reported being clients of prevention programmes. Source: «Звіт за результатами біоповедінкового дослідження серед чоловіків, що практикують секс із чоловіками в Україні» Я. Сазонова, Ю. Дукач. МБФ «Альянс громадського здоров'я». 2019 р. – 120 с.

[60] Preliminary data (IBBS, 2021).

No.	Indicator	Description of the indicator	2017	2018	2019	2020	2021
		II. Programme data. Percentage of MSM reached with HIV prevention interventions designed for MSM	23.6	25.2	31.2	27.7	23.6
		Number of men who have sex with men reached with individual or small-group HIV prevention interventions designed for the intended population	42,881	45,278	55,905	49,713	59,818
		Number of condoms and lubricants distributed among MSM	7,489,741	3,357,222	2,537,618	2,298,220	2,583,965
		1.6C. Coverage of HIV prevention programmes among PWID					
		I. Behavioural surveillance or another special survey. Percentage of PWID who report receiving at least two of the listed HIV prevention services from a nongovernmental organization, healthcare provider or other sources[61]	48[62]	-	-	-	37.1[63]
		II. Programme data. Percentage of PWID reached with HIV prevention interventions designed specifically for PWID	65.3	58.3	66.8	73.2	81.9
		Number of PWID reached with HIV prevention interventions designed specifically for PWID	226,469	204,291	233,905	256,319	286,940
		Number of needles or syringes distributed	29,071,944	20,048,017	18,671,424	22,789,972	17,705,713
		1.6D. Coverage of HIV prevention programmes among TP					
		I. Behavioural surveillance or another special survey. Percentage of TP who report receiving at least two of the listed HIV prevention services from a nongovernmental organization, healthcare provider or other sources[64]	-	-	-	22.8	-
		II. Programme data. Percentage of TP reached with HIV prevention interventions designed specifically for TP	-	-	-	32.8	44.5
		Number of TP reached with HIV prevention interventions designed specifically for TP	595	1,049	1,747	2,688	3,647

[61]Description of the indicator within the framework of GAM (UNAIDS).

[62] Defined based on respondent's answers concerning receiving NGO-provided prevention services in the past 12 months Source: Звіт за результатами біоповедінкового дослідження 2017 року серед людей, які вживають наркотики ін'єкційно, в Україні. – Ю. Середа, Я. Сазонова. – К.: МБФ «Альянс громадського здоров'я». 2020 р. – 224 с.

[63]Defined based on answers by PWID who reported receiving at least one of the prevention services from an NGO. Source: «Звіт за результатами Інтегрованого біоповедінкового дослідження 2020 року серед людей, які вживають наркотики ін'єкційним шляхом. – І. Тітар, С. Сальніков, С. Огороднік, О. Нестерова., К. Попова, І. Андріанова, О. Шейко, С. Січкар – К.: ДУ «Центр громадського здоров'я Міністерства охорони здоров'я України». 2021 р. – 133 с.

[64]Description of the indicator within the framework of GAM (UNAIDS).

No.	Indicator	Description of the indicator	2017	2018	2019	2020	2021
		Number of condoms and lubricants distributed among TP	50,152	207,023	258,888	504,015	468,810
1.7.	**HIV prevention programmes in prisons**	Number of prisoners receiving opioid substitution therapy	-	-	-	-	117
		Number of condoms distributed to prisoners	0	0	1,276,500	0	1,030,560
		Number of prisoners receiving ART	2,375	3,200	3,343	3,601	3,808
		Number of prisoners tested for HIV	29,369	48,314	54,025	48,714	83,390
		Percentage of people living with HIV among prisoners		7.99	7.2	8.0	8.5
		Number of people living with HIV among prisoners	3,999	3,860	3,824	3,901	3,993
		Percentage of prisoners with hepatitis C	-	1.5	-	-	2.9
		Number of prisoners with hepatitis C	-	829	-	-	1,342
		Percentage of prisoners co-infected with HIV and hepatitis C virus	-	20	1.3	1.9	1.2
		Number of prisoners co-infected with HIV and hepatitis C virus	-	1,015	668	917	504
		Percentage of prisoners with TB or co-infected with HIV and TB	-	3.33	2.4	2.5	0.4
		Number of prisoners with TB or co-infected with HIV and TB	369	1,839	1,262	1,224	210
1.8.	**Safe injecting practices among people who inject drugs**	Percentage of PWID reporting using sterile injecting equipment the last time they injected drugs	96.6	-	-	-	96.6
1.9.	**Needles and syringes distributed per person who injects drugs**	Number of needles and syringes distributed per person who injects drugs per year by needle–syringe programmes (rounded to a whole number)	84	57	53	65	51
		Number of needles and syringes distributed in the past 12 months by needle–syringe programmes	29,071,944	20,048,017	18,671,424	22,789,972	17,705,713
1.10.	**Coverage of opioid substitution therapy**	Percentage of people who inject drugs receiving opioid substitution therapy	3.5	3.8	4.5	5.3	7.1
		Number of people who inject drugs and are receiving opioid substitution therapy	10,189	11,385	12,411	14,868	19,942
1.15.	**People who received pre-exposure prophylaxis (PrEP)**	Number of people who received PrEP at least once during the reporting period	4	125	1,735	2,258	5,711

No.	Indicator	Description of the indicator	2017	2018	2019	2020	2021
		Number of people who received any PrEP product for the first time in their lives during the reporting period	4	125	1,635	1,549	4,794
1.16.	**Young people: knowledge about HIV prevention**	Percentage of respondents 15–24 years old who correctly answered all five questions	26.7	-	18.9 [65]	25.1	-
2.	**95-95-95 in HIV infection testing and treatment indicators**						
	Estimated number of people living with HIV[66]	Estimated number of people living with HIV as of the end of the reporting period	244,000	240,750	251,168	257,548	244,877
2.1.	**People living with HIV who know their HIV status**	Number of people living with HIV who know their HIV status	136,378	169,433	169,787	177,760	183,929
	Progress towards the first 95 target	Percentage of people living with HIV who know their HIV status	**56**	**70**	**68**	**69**	**75**
2.2.	**People living with HIV on antiretroviral therapy**	Number of people on antiretroviral therapy	98,237	122,697	136,105	146,488	152,226
	Progress towards the second 95 target	Percentage of PLHIV on ART among all people who know their HIV status	**72**	**72**	**80**	**82**	**83**
2.3.	**People living with HIV who have suppressed viral loads**	Number of people living with HIV with suppressed viral loads	57,010	113,578	127,871	137,221	142,586
	Progress towards the third 95 target	Percentage of PLHIV with suppressed viral load among persons on ART	**58**	**93**	**94**	**94**	**94**
2.4.	**Late HIV diagnosis**	Percentage of people living with HIV with an initial CD4 cell count < 200 cells/mm3 during the reporting period	36.8	36.6	35.1	32.5	35.3
		Percentage of people living with HIV with an initial CD4 cell count < 350 cells/mm3 during the reporting period	58.0	58.7	59.0	54.5	57.3
2.5.	**HIV testing volume and positivity[67]**	Percentage of HIV-positive results returned to people (positivity) in the calendar year	-	-	3.1	1.7	2.1
		Number of tests conducted where an HIV-positive result was returned to the person (positivity)	-	-	16,344	24,000	33,682

[65] Source: Health Behaviour in School-Aged Children: a World Health Organization cross-national study (HBSC), Україна, 2018

[66] Based on forecasting results obtained using Spectrum programme.

[67] Since 2020, the indicator is calculated not only based on data on HIV testing services at community level, but also based on information on testing results in separate populations at HCFs where HIV-positive results were returned to the tested persons (in particular, persons who were tested using RTs). This explains significant difference of the results as compared to those in 2019.

No.	Indicator	Description of the indicator	2017	2018	2019	2020	2021
		Number of tests performed where results were received by the person (testing volume)	-	-	520,119	1,380,914	1,628,098
	Data on HIV testing services at healthcare facilities	Percentage of HIV-positive results returned to people (positivity) in the calendar year	-	-	-	1.9	1.7
		Number of tests conducted where an HIV-positive result was returned to the person (positivity)	-	-	-	13,609	13,941
		Number of tests performed where results were received by the person (testing volume)	-	-	-	713,566	832,765
	Data on HIV testing services at community level	Percentage of HIV-positive results returned to people (positivity) in the calendar year	-	-	3.1	1.6	2.5
		Number of tests conducted where an HIV-positive result was returned to the person (positivity)	-	-	16,344	10,391	19,741
		Number of tests performed where results were received by the person (testing volume)	-	-	520,119	667,348	795,333
	Self-testing	Total number of individual self-test kits procured during the year by the government and/or donors	-	17,000	20,950	24,000	116,900
		Total number of individual self-test kits distributed during the year	-	523	25,540	18,587	40,454
2.6.	**Antiretroviral therapy coverage among people living with HIV in key populations**	**2.6A.** Percentage of SWs living with HIV and receiving ART in the past 12 months	29.0	-	-	-	78.0
		2.6B. Percentage of MSM living with HIV and receiving ART in the past 12 months	46.3	-	-	-	55.4
		2.6C. Percentage of PWID living with HIV and receiving ART in the past 12 months	37.9	-	-	-	86.2
		2.6D. Percentage of TP living with HIV and receiving ART in the past 12 months	-	-	-	41.2	-
		2.6E. Percentage of prisoners living with HIV and receiving ART in the past 12 months[68]	62.0	82.9	87.4	92.3	95.4

[68]According to the State Criminal-Executive Service of Ukraine

No.	Indicator	Description of the indicator	2017	2018	2019	2020	2021
2.7.	**AIDS mortality**[69]	Number of people who have died from AIDS-related causes per 100 thousand population	7.7	8.1	7.7	5.5	4.7
		Total number of people who have died from AIDS-related causes	3,298	3,448	2,977	2,114	1,928
3.	**Eliminating vertical HIV transmission and eradicating AIDS in children**						
3.1.	**HIV testing in pregnant women**	Percentage of pregnant women with known HIV status	97.2	99.5	99.9	99.1	98.7
		Number of pregnant women who **already knew they were HIV-positive** at the first antenatal care visit.	1,441	1,437	1,431	1,281	1,258
		Number of women who received a positive HIV test result **for the first time** when attending antenatal clinics and during current pregnancy and/or delivery	1,165	977	772	622	599
3.2.	**Early infant diagnosis**	Percentage of infants born to HIV-positive mothers who received an HIV test within two months of birth	54.2	60.9	82.1	87.9	70.0
3.3.	**Vertical transmission of HIV**	Estimated percentage of children newly infected with HIV from vertical transmission among women living with HIV delivering in the past 12 months (based on PCR data)[70]	2.2	1.64	1.58	1.3	1.3
		Percentage of new HIV cases in children from mother-to-child transmission of HIV (based on annual cohort surveillance data from previous years)[71]	3.7 (2015)	3.6 2016	3.32 2017	3.03 2018	2.6 2019
3.4.	**Preventing vertical transmission of HIV**	Percentage of pregnant women living with HIV who received antiretroviral medicine to reduce the risk of vertical transmission of HIV	92.0	96.2	95.6	95.9	95.7
		Number of pregnant women who initiated ART **after** the start of current pregnancy	1,470	1,376	1,051	797	705
		Number of pregnant women who initiated ART **before** the current pregnancy	565	853	940	1,041	1,069

[69] Based on data from Reporting Form No. 2 HIV/AIDS "Report on Persons with Conditions and Diseases Caused by Human Immunodeficiency Virus (HIV) for Year ____"

[70] Based on data of Reporting Form No. 63 (annual)

[71] Based on data of Reporting Form No. 63-1 (annual). Applied within the framework of national monitoring.

No.	Indicator	Description of the indicator	2017	2018	2019	2020	2021
3.5.	**Syphilis among pregnant women**	Percentage of women attending antenatal care services who were tested for syphilis (testing during any visit)	92.5	93.4	90.2	92.8	95.4
		Percentage of women accessing antenatal care services who tested positive for syphilis	0.085	0.069	0.15	0.10	0.07
3.6.	**Congenital syphilis rate**	Reported congenital syphilis cases (live births and stillbirth)	0.0	0.0003	0.0003	0.0006	0.0004
3.7.	**Hepatitis B virus among pregnant women[72]**	Percentage of women attending antenatal care services who were tested for HBV surface antigen (HBsAg).	-	-	-	-	52.52
		Percentage of women attending antenatal care services who were tested for HBsAg and had a positive HBsAg test	-	-	-	-	0.59
		Number of women attending antenatal care services who were tested for HBsAg and had a positive HBsAg test	-	-	-	-	788
4.	**Gender equality, empowering women and girls**						
4.1.	**Physical and/or sexual violence experienced by key populations[73]**	**4.1A.** Experience of physical and/or sexual violence among SWs	-	-	-	-	28.8
		4.1B. Experience of physical and/or sexual violence among MSM	-	-	-	-	23.6
		4.1C. Experience of physical and/or sexual violence among PWID	-	-	-	-	-
		4.1D. Experience of physical and/or sexual violence among TP	-	-	-	-	9.5
4.2.	**Attitudes towards violence against women[74]**	The percentage of women and men aged 15 to 49 years who agree that a husband is justified in hitting or beating his wife for specific reasons (% of those who agree with one or more of the situations)	-	-	-	-	28[75]
6.	**Implementation of human rights and eradication of stigma and discrimination**						

[72] New indicator since 2021

[73, 20] New indicator since 2021

[75]Source: Research “Citizens' Attitudes Toward Gender-Based and Domestic Violence”, 2021.

No.	Indicator	Description of the indicator	2017	2018	2019	2020	2021
6.1.	**Discriminatory attitudes towards people living with HIV**	Percentage of women and men 15–49 years old who report discriminatory attitudes towards people living with HIV (answering "no" to at least one of the two questions)	-	-	-	66.6	-
6.2.	**Internalised stigma reported by people living with HIV**[76]	Percentage of people who report receiving a positive HIV test result and agreed with the statement (concerning internalised stigma).	-	-	-	-	-
6.3.	**Stigma and discrimination experienced by PLHIV in community settings**[77]	Stigma and discrimination experienced by people living with HIV in community settings	-	-	-	-	8.1[78]
6.4.	**Experience of HIV-related discrimination in health-care settings**	Percentage of people living with HIV who report experiences of HIV-related stigma discrimination in healthcare settings in the past 12 months	-	-	-	17.3	-
6.5.	**Stigma and discrimination experienced by key populations**[79]	**6.5A.** Percentage of SWs who report that one or more of the three experiences has happened to them in the past 6 months	-	-	-	-	-
		6.5B. Percentage of MSM who report that one or more of the three experiences has happened to them in the past 6 months	-	-	-	-	45.1
		6.5C. Experience of stigma and discrimination among PWID	-	-	-	-	-
		6.5D. Experience of stigma and discrimination among TP	-	-	-	-	-
6.6.	**Avoidance of health care among key populations because of stigma and discrimination**	**6.6A.** Percentage of SWs avoiding health care because of stigma and discrimination in the past 12 months	-	-	-	16.3	21.3
		6.6B. Avoidance of health care by MSM because of stigma and discrimination	-	-	-	9.7	6.3
		6.6C. Avoidance of health care by PWID because of stigma and discrimination	-	-	-	10.3	-
		6.6D. Avoidance of health care by TP because of stigma and discrimination.	-	-	-	8.4	-

[76, 23] New indicator since 2021

[78, 25] Source: "Index Stigmas" in Ukraine (2020)

[79] New indicator since 2021

No.	Indicator	Description of the indicator	2017	2018	2019	2020	2021
6.7.	**PLHIV seeking redress for violation of their rights**[80]	Proportion of PLHIV who have experienced rights abuses in the last 12 months and have sought redress	-	-	-	-	-
7.	**General access to medical services and integration**						
7.1.	**Viral hepatitis among key populations**	Prevalence of **hepatitis B** and coinfection with HIV among key populations	-	-	-	-	-
		Prevalence of **hepatitis C** and coinfection with HIV among key populations:					
		PWID	18.7	-	-	18.0	-
		SWs	3.7	-	-	-	1.8
		MSM	-	-	-	-	0.4
		TP	-	-	-	0.2	-
7.2.	**Hepatitis C testing among PLHIV**	Proportion of people starting antiretroviral therapy who were tested for hepatitis C during the reporting period using the sequence of anti-HCV antibody tests followed by HCV polymerase chain reaction (PCR) for those who are anti-HCV positive.	-	-	-	-	-
7.3.	**People coinfected with HIV and Hepatitis C virus starting Hepatitis C virus treatment**	Percentage of people diagnosed with HIV and HCV coinfection starting treatment for HCV	8.9	7.7	4.4	15.1	15.5
7.4.	**Syphilis prevalence among key populations**	**7.4A** Syphilis prevalence among SWs[81]	-	-	0.49	0.38	3.9
		7.4B Syphilis prevalence among MSM[82]	-	-	0.54	0.69	3.2
		7.4D Syphilis prevalence among TP[83]	-	-	-	-	2.4
7.5.	**Men with urethral discharge**	Percentage of men reporting urethral discharge in the past 12 months	0.002	0.002	0.001	0.001	0.00033

[80] New indicator since 2021

[81, 29] Based on programme monitoring and prevention programmes (SYREX database) until 2020 (2021 — IBBS data).

[83] According to IBBS data (2020). New indicator since 2021

No.	Indicator	Description of the indicator	2017	2018	2019	2020	2021
7.6.	**Gonorrhoea among men**	Rate of laboratory-diagnosed gonorrhoea among men in countries with laboratory capacity for diagnosis	0.019	0.016	0.013	0.007	0.0055
7.7.	**Co-management of tuberculosis and HIV treatment**	Percentage of TB cases in PLHIV who received treatment for both TB and HIV	53.3	58.6	62.3	49.0	-
		Estimated number of TB cases in PLHIV[84]	8,300	8,200	7,800	7,000	-
		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	4,426	4,806	4,860	3,428	3,354
7.8.	**People living with HIV with active tuberculosis disease**	Total number of PLHIV with active TB expressed as a percentage of those who are newly enrolled in HIV treatment during the reporting period	-	22.8	20.3	12.9	11.5
7.9.	**People living with HIV who started tuberculosis preventive treatment**	Number of patients who started latent TB infection treatment (IPT) expressed as percentage of the total number of those who are newly enrolled in HIV treatment during the reporting period	59.8	60.6	55.8	72.7	67.7
7.10.	**People living with HIV on ART who completed a course of tuberculosis preventive treatment**	Percentage of PLHIV on ART who completed a course of TB preventive treatment (IPT) among those who initiated treatment (cohort of the year before the reporting year) for the current annual reporting round[85]	-	-	-	-	-
7.11.	**Women living with HIV who were screened for cervical cancer**	The number of women living with HIV who were screened for cervical cancer in the last 12 months using any screening test[86]	-	-	-	-	-
		The number of women living with HIV who were screened for cervical cancer in the last 12 months using any screening test **for the first time in their lives**	-	-	-	-	-

[84] Source: http://www.who.int/tb/country/data/download/en

[85, 33] Note: The source of data (an appropriate reporting form) is currently absent in Ukraine

No.	Indicator	Description of the indicator	2017	2018	2019	2020	2021
7.12.	**Cervical precancer treatment in women living with HIV[87]**	Percentage of women living with HIV, who screened positive for cervical precancer who received treatment for precancerous lesions in the last 12 months[88]	-	-	-	-	-
7.13.	**Treatment of invasive cervical cancer in women living with HIV[89]**	The percentage of women living with HIV with suspected invasive cervical cancer who were treated within the last 12 months[90]	-	-	-	-	-
7.14.	**People living with HIV receiving multimonth dispensing of antiretroviral medicine (coverage)[91]**	Proportion of PLHIV currently on ART who are receiving multimonth dispensing of antiretroviral medicine for:	-	-	-	-	-
		< 3 months	-	-	-	-	-
		3 to < 6 months	-	-	-	-	-
		> 6 months	-	-	-	-	-
		Alternative: the total number of people currently on antiretroviral therapy and receiving ≥3 months of antiretroviral medicine at their last medicine pick-up	-	-	-	-	-
8.	**Investment and resources**						
8.1.	**Domestic public budget for HIV**	Planned costs, $	-	-	-	21,528,850.15	36,753,464.97
		Actual costs				19,727,227.07	27,201,522.90

[87, 36] New indicator since 2021

[88, 37] Note: The source of data (an appropriate reporting form) is currently absent in Ukraine

[91] New indicator (2021). Since 2016, a differentiated approach to service provision, which, in particular, provides for a possibility of receiving drugs for several months, has been recommended by the WHO and included to the Consolidated Guidelines on the Use of Antiretroviral Drugs for Treating and Preventing HIV Infection. Recommendations for a Public Health Approach.

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