Review of the viral hepatitis programme in Ukraine

2025

Abstract

This review of Ukraine's viral hepatitis response took place from September to November 2025, at the midpoint of implementation of the National Viral Hepatitis Strategy (2019–2030). The mission comprised experts from WHO Headquarters, the WHO Regional Office for Europe, the WHO Country Office in Ukraine, and the WHO Country Office in the Republic of Moldova, as well as experts from the Robert Koch Institute (RKI), the UK Health Security Agency (UKHSA), Instituto de Salud Carlos III (ISCIII) and the Center for Disease Analysis Foundation (CDAF). This is the third WHO-led review of Ukraine's viral hepatitis response, following missions conducted in 2017 and 2023–2024. The review assessed progress and challenges across objectives related to prevention, testing, and treatment of hepatitis B and hepatitis C.

Keywords

VIRAL HEPATITIS
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HEPATITIS C
LINKAGE TO CARE
BLOOD SAFETY
OPIOID AGONIST MAINTENANCE THERAPY
HEALTH SYSTEM RECOVERY
HEALTH SYSTEM RESILIENCE
UKRAINE

Contents

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Abbreviations

ANC	antenatal care
APH	Alliance for Public Health
CDAF	Center for Disease Analysis Foundation
DAA	direct-acting antiviral
EMTCT	elimination of mother-to-child transmission
ESEN	Electronic System of Epidemiological Surveillance
GFATM	Global Fund to Fight AIDS, TB and Malaria
HBIG	hepatitis B immune globulin
HBsAg	hepatitis B surface antigen
HBV	hepatitis B virus
HCV	hepatitis C virus
HepB-BD	hepatitis B birth dose
HepB3	hepatitis B third dose
IBBS	Integrated Bio-Behavioral Survey
IDP	internally displaced person
IPC	infection prevention and control
ISO	International Organization for Standardization
KAP	knowledge, attitude and practices
LTFU	lost to follow-up
MHPSS	mental health and psychosocial support
MISSD	Medical Information for Socially Significant Diseases
MoD	Ministry of Defense
MoH	Ministry of Health

MoJ	Ministry of Justice
MSM	men who have sex with men
NBS	National Blood System
NGO	nongovernmental organization
NHSU	National Health Service of Ukraine
NITAG	National Immunization Technical Advisory Group
NS2030	National Strategy on HIV/AIDS, Tuberculosis and Viral Hepatitis 2019–2030
NSP	needle and syringe programme
OAMT	opioid agonist maintenance therapy
PHC	primary health care
PLHBV	people living with HBV
PLHCV	people living with HCV
PLHIV	people living with HIV
PMTCT	prevention of mother-to-child transmission
PWID	people who inject drugs
PWUD	people who use drugs
RDT	rapid diagnostic test
RKI	Robert Koch Institute
TasP	treatment as prevention
TDF	tenofovir disoproxil fumarate
UKHSA	UK Health Security Agency
UNICEF	United Nations Children's Fund
UPHC	Public Health Centre of the Ministry of Health of Ukraine
WHO	World Health Organization

Executive summary

Ukraine's national viral hepatitis programme stands at the midpoint of the National Strategy on HIV/AIDS, Tuberculosis and Viral Hepatitis 2019–2030 (NS2030) and just past the midpoint of its 2024-2026 Operational Plan. The review, conducted from September to November 2025, identified clear trends of progress across the continuum of viral hepatitis prevention, testing, and treatment despite the significant challenges presented by the post-pandemic recovery and the ongoing full-scale invasion.

Substantial gains have been made through decentralization, simplified treatment pathways, and optimized procurement. These developments reflect strong leadership, cross-sector collaboration, and the resilience of Ukraine's health system.

Main findings

Governance and programme management

Ukraine's viral hepatitis response is guided by the National Strategy on HIV/AIDS, Tuberculosis and Viral Hepatitis 2019–2030 and its 2024–2026 operational plan. The overall coordination of the national response is led by the Ministry of Health of Ukraine (MoH), in close collaboration with Ukaine's Public Health Center and other partners. Despite the disruptions caused by COVID-19 and the full-scale invasion by the Russian Federation, the programme has demonstrated strong resilience and response to the burden of hepatitis B virus (HBV) and hepatitis C virus (HCV), marked by the decentralization of HCV treatment from 18 facilities to nearly 300, major increases in treatment volumes for both viruses, the first-ever procurement of rapid diagnostic tests for both infections (RDTs) in 2022, and reduced costs for direct-acting antivirals.

The establishment of regional CDCs has created a foundation for strengthening strategic information and has improved operational coordination. However, further efforts are needed to enhance analytical capacity, data quality, and system integration.

Collaboration with bodies such as the Ministry of Justice (MoJ) and Ministry of Defense (MoD) has further expanded service reach.

However, implementation continues to face significant challenges, including human resource shortages, logistical barriers, funding constraints, uneven progress in decentralization across oblasts, and limited visibility of services delivered by private providers, who account for a substantial share of doctors and laboratory capacity.

Training participation remains lower than in other disease areas, and vaccine hesitancy and gaps in mother-to-child transmission prevention underscore the need for continued support to fully realize the goals of the national strategy.

Financial Sustainability

Financing for viral hepatitis in Ukraine relies on a mix of public, private, and donor sources. Funds provided to the UPHC support procurement of rapid diagnostic tests, as well as national programme management. The procurement of medicines is carried out by the Medical Procurement of Ukraine (MPU) using funds from the MoH. The UPHC participates in needs assessment and provides technical and programmatic support to the procurement process for medicines. The National Health Service of Ukraine (NHSU) supports outpatient service delivery through per-patient capitation payments to health facilities. Recent increases in the national viral hepatitis budget, combined with the full shift to generic direct-acting antivirals and updated clinical guidelines, have significantly expanded treatment procurement and reduced the cost of care by up to 90%.

Nonetheless, essential components such as molecular testing remain largely dependent on out-of-pocket payments. The UPHC receives allocations from the state budget for the procurement of PCR consumables. However, the MPU is not authorized to procure PCR reagents for HBV and HCV, as these consumables are not included in the officially approved list of medicines and medical supplies for the diagnosis and treatment of viral hepatitis B and C. A key step toward enabling procurement would be the inclusion of PCR consumables in the relevant national lists.

While the National Health Service of Ukraine (NHSU) ambulatory care benefit package formally includes confirmatory diagnostic services, the reimbursement levels do not reflect the actual cost of PCR reagents, rendering such services financially non-viable and excessively cost-bearing for health facilities.

Low reimbursement rates for provided services limit the financial capacity of primary health care facilities to deliver the full scope of services for patients with hepatitis B and C.

Although donor funding plays a modest but important direct role in testing and treatment for key populations (especially people living with HIV, people who inject drugs, and people on OAMT), it remains crucial for broader prevention, harm reduction, and community outreach. The viral hepatitis programme continues to receive far less funding than HIV, and greater sustainability will require addressing gaps in laboratory financing, ensuring stable long-term budgets, and reducing reliance on external partners for prevention activities. The sustainability of funding for the viral hepatitis response may also be shaped by trends in external funding for HIV and TB.

Strategic information

Ukraine’s strategic information system for viral hepatitis is led by the UPHC, which oversees national data synthesis and the development of information tools. Regional CDCs are involved in data collection and analysis of strategic information at the oblast level. Progress has been made in the integration of viral hepatitis into national reporting platforms such as Electronic System of Epidemiological Surveillance (ESEN), Medical Information for Socially Significant Diseases (MISSD), and supply monitoring systems.

While the Electronic System of Epidemiological Surveillance can broadly be considered part of the strategic information framework, in practice it relies primarily on Form 058/o as its data source. This alone is insufficient for comprehensive reporting and analysis of viral hepatitis. As such, the information system "Monitoring of Socially Significant Diseases" currently cannot be considered a source of routine strategic information on viral hepatitis, as viral hepatitis data within the system are limited to individual patient records and cannot be aggregated into reporting outputs due to the absence of approved recording and reporting forms. Furthermore, in the MISSD platform, the relevant module for viral hepatitis has not yet been implemented and a production version enabling routine reporting by physicians is not yet available.

However, viral hepatitis remains incompletely integrated into these systems in practice, and with limited linkages across systems for surveillance, clinical monitoring, supply chain, and payment data. Major challenges persist, including the absence of a unique patient identifier, limited access to private facility data, and fragmented information systems hinder the tracking of along the patient pathway for clinical purpose and the monitoring of the care cascade for programme purposes.

Dynamic population movements—due to displacement, emigration, and mobilization—further complicate interpretation of service trends and undermine the accuracy of denominators. Gaps in data flows related to screening and birth dose administration also present a major challenge for efforts to prevent mother-to-child transmission.

As part of this review, updated epidemiological estimates have been developed by the Center for Disease Analysis Foundation (CDAF) in consultation with the UPHC and viral hepatitis experts.

Prevention of mother-to-child transmission of HBV and routine HBV immunization

Ukraine has maintained strong antenatal care (ANC) coverage despite the war, with 99% of pregnant women receiving at least one ANC visit. However, HBsAg+ and anti-HCV screening coverage during pregnancy is incomplete and has declined significantly: at 40-60%, HBsAg ANC screening coverage in 24 was far lower than the ANC screening rate for HIV or syphilis, while anti-HCV screening has dropped to 13% in 2024. Recorded data suggests that follow-up of HBsAg-positive mothers for nucleic acid testing (NAT) and treatment is weak and that there are very low rates of screening among infants potential exposed to HBV or HCV. There is not access to infant hepatitis B immune globulin (HBIG) for the prevention of HBV transmission in Ukraine.

Ukraine is preparing to shift from a policy of universal birth dose immunization for hepatitis B (HepB-BD) to targeted birth dose vaccination in 2026. Limited ANC screening, poor data flow for clinical management and programme evaluation, and lack of a unified reporting system may present significant challenge for the implementation of a targeted birth dose policy.

Moreover, logistical challenges, cold-chain disruptions, and vaccine hesitancy are possible barriers to complete implementation of birth dose and routine immunization for hepatitis B may

hinder the full impact of immunization efforts toward prevention of mother-to-child transmission.

Routine hepatitis B immunization (HepB3)—has improved markedly, with HepB3 coverage reaching 88% in 2024—its highest level in nearly two decades—and modelling suggests that maintaining these rates will continue to reduce HBsAg prevalence among young children—estimated at 0.08% in children under 5 in Ukraine in 2024.

Blood safety

Please see full section (p.42).

Infection prevention and control

Nosocomial transmission has likely contributed significantly to viral hepatitis incidence in Ukraine, but its role remains poorly quantified due to limited studies evaluating transmission routes. Historical gaps in HepB-BD and HepB3 immunization raises concerns regarding past and recurring transmission risks.

New transmission risks arising from the full-scale invasion by the Russian Federation are an important consideration of current infection prevention and control (IPC) efforts. National guidelines and structures for IPC are in place, including facility-level IPC staff. There are recommendations in place for HBV vaccination for military conscript to be made available upon individual requests.

Current national infection prevention and control rules stipulate that all healthcare workers should receive three doses of hepatitis B vaccine. NHSU contracts with facilitates stipulate that facilities should support access to HBV vaccination; however, in practice, several barriers exist, as vaccination is funded through local budgets, medical facility budgets, or out-of-pocket payments by healthcare workers.

The average cost of €27 for a single vaccine dose is a barrier to universal access to adult vaccination among adults who were not covered by routine childhood immunization against HBV.

Since 2022, the MoH and UPHC have expanded training on safe injections, waste management, and IPC practices, supported by WHO, including the piloting of innovative simulation-based training tools. Recent policy changes now require all health-care facilities to meet WHO-aligned minimum IPC standards to qualify for state funding, and efforts have begun to enforce compliance in high-risk settings such as dental practices and haemodialysis centres.

However, significant challenges remain: many services with high nosocomial risk operate outside the state health system, adult HBV immunization relies on facility-level procurement of vaccine supply, and needle and syringe programmes have weakened in frontline regions.

The absence of a national framework to assess injection safety, combined with limited staffing for IPC monitoring and insufficient HBV vaccination coverage among health-care workers in some oblasts, continues to hinder implementation of IPC efforts.

Harm Reduction

People who inject drugs (PWID) are estimated to represent a leading at-risk population of persons living with HCV in Ukraine. The high HCV prevalence in a large PWID population makes harm reduction a central component of prevention and integration of viral hepatitis services with harm reduction services a key entry point for scaling up treatment.

The inclusion of programmes on HIV, opioid agonist maintenance treatment (OAMT), and viral hepatitis programmes all under the UPHC provide a clear mandate and mechanism for integration of harm reduction and viral hepatitis services. The recent scale-up of opioid agonist maintenance therapy—reaching over 33,000 patients by mid-2025, a figure estimated to represent 10-15 percent of the total number of the PWID population—creates important opportunities to expand hepatitis services for PWID. Outreach led by nongovernmental organizations (NGOs) remains a major strength of Ukraine's response.

Since 2021, patients receiving opioid agonist maintenance therapy (OAMT) and people living with HIV (PLHIV) have been recognized as key priority groups for intensified attention. These groups have access to hepatitis C treatment services outside the general patient queue, in line with national and international guidelines.

The full-scale invasion by the Russian Federation increases risks linked to alcohol and substance use disorder, as well as unsafe injecting practices, and has created significant operational barriers, particularly in frontline areas where mobility and safety constraints limit access to comprehensive harm reduction services. The cessation of needle and syringe exchange in conflict-affected regions and the heavy dependence on external funding for prevention programming further threaten the continuity and reach of harm reduction efforts. The review did not specifically cover needle and syringe programmes (NSP) in Ukraine.

Awareness and linkage to care

Awareness of communities and knowledge of healthcare workers related to viral hepatitis services is a major strategic objective of the NS2030. Ukraine is currently integrating viral hepatitis interventions in services for OAMT, needle and syringe programmes, HIV services, and antenatal care. Digital tools have further supported linkage, including UPHC's national service-mapping platform and the Help24 telehealth service by Alliance for Public Health (APH), which expands prevention and navigation support for key populations.

NGO-led models—such as those implemented by 100% Life and APH—have recently demonstrated excellent care cascade outcomes. However, access to sufficient funding support

and the costs of patient support services have posed to challenges to the sustainability and scalability of these models.

In 2025, the prison system significantly scaled up HCV screening and treatment.

However, the full-scale invasion has disrupted referral pathways and travel to services. Linkage is further constrained by major barriers to laboratory services, inconsistent availability of RDTs and treatment across facilities, and weak follow-up systems—for example, the lack of referral mechanisms by the national blood system to positive blood donors. Limited integration between cirrhosis or hepatocellular carcinoma (HCC) care and viral hepatitis remains.

Greater participation in training will be crucial to improving capacities for integration and linkage throughout the continuum of care.

Screening, diagnosis, and laboratory system

Screening

Ukraine has integrated HBV and HCV screening into more than ten NHSU service packages, enabling decentralized testing through primary care and creating strong opportunities for linkage via ANC, HIV, and OAMT services. Screening volumes declined during COVID-19 and the full-scale invasion, and HBsAg testing volumes continues to outpace anti-HCV testing despite HCV's far higher prevalence—a mismatch the national operational plan aims to correct. Centralized procurement of rapid diagnostic tests since 2022 has improved availability. Regional CDCs collect and aggregate data, and the distribution of test systems to healthcare facilities is subsequently managed by the regional health departments within the respective oblast state administrations. Screening volumes are expected to rebound because of expanded procurement in 2025.

Major gaps remain: NGO screening results are not counted in official data, strategic information is limited in its granularity on key dimensions, ANC screening is inconsistently implemented, and data quality issues—such as duplicate positives and missing private-sector reporting—undermine visibility of the care cascade.

Diagnosis and laboratory system

Nucleic acid testing remains one of the most significant bottlenecks in Ukraine's viral hepatitis response, as confirmation and monitoring for both HBV and HCV occur largely in the private sector and are typically paid for out of pocket. Although the country has a strong system for molecular testing for HIV and TB in place, the viral hepatitis response is lacking key dimensions: 1) there is no national reference laboratory to lead supervision and coordination of viral hepatitis laboratory services, 2) no external quality assurance system for viral hepatitis testing, 3) no dedicated training programme, and 4) no dedicated budget for central procurement of laboratory consumables for NAT for HBV and HCV. Recent progress in the programme's support of diagnosis includes the success of an initiative aimed at providing NAT for key populations and

those at greater risk of infection at state laboratories using GeneXpert® cartridges procured via support from the Global Fund to Fight AIDS, TB and Malaria (GFATM). UPHC has also piloted a sample transport network linking over 250 facilities to regional hospitals, and regional CDCs have carried out regional estimates of PCR testing needs. However, fragmented procurement, high costs—particularly for HBV viral load testing—and limited data on confirmatory testing and follow-up continue to restrict access and prevent full visibility of the diagnostic cascade.

Treatment and care

Ukraine has rapidly expanded viral hepatitis treatment capacity, with HCV treatment sites increasing from 18 in 2020 to nearly 300 in 2025 and hundreds of facilities now reporting needs for HBV and HCV medicines. Treatment volumes have grown steadily: more than 21,000 people were treated for HCV in 2024, and nearly 75,000 between 2020 and 2024, supported by large-scale procurement of generic sofosbuvir/velpatasvir (SOF/VEL). Major procurement orders in 2024 and 2025 should expand annual HCV treatments significantly and HCV treatment volumes now approach the annual number of new positive tests. HBV treatment volumes have increased and the procurement volume in 2025 was the largest ever, but at present many regions report long waiting lists. The record 2025 procurement of HBV medicines will ease shortages in the short term, but the increase in the number of people living with HBV on antivirals raises future budgetary needs to sustain treatment volumes. Access to pediatric formulations remains a major gap: high costs, the absence of generic options, and reliance on donations of small volumes of treatment for young children means the treatment of children remains a major challenge. There are also barriers to other medicines relevant for the treatment and management of viral hepatitis. These include drugs no longer available for relisting, treatments for patients with severe renal impairment, and options for individuals with HBV/HDV co-infection. For example, ombitasvir/paritaprevir/ritonavir is no longer manufactured or supplied to Ukraine by AbbVie, while glecaprevir/pibrentasvir is not procured with public funds, and the cost of a Maviret treatment course exceeds €20,000. Pegylated interferon for the treatment of HBV and HBV/HDV co-infection is not registered in Ukraine due to changes in patent ownership, and Bulevirtide is not included in the list of medicines procured with state funds. Consequently, patients with co-infections currently lack access to these necessary treatments.

Conclusions

The recent progress of Ukraine’s viral hepatitis response has been remarkable, especially given the fact that it has been achieved amidst the extraordinary challenges posed by the Covid-19 pandemic and the ongoing full-scale invasion by the Russian Federation.

These achievements demonstrate political commitment, strong programme management, and the effective use of available resources. This review highlights that improved funding has been key to scaling the viral hepatitis response; the review also highlights areas where increases in funding could catalyze further expansion and impact.

The next phase of Ukraine's 2019–2030 strategy will require continued adaptability to evolving circumstances, with the ongoing full-scale invasion and possible shifts in external funding for HIV and TB representing key strategic considerations. Continued leadership, predictable funding, and effective partnerships—both domestic and international—will be essential to achieving elimination as a public health threat.

Main recommendations and next steps

Governance and programme management

- Empower UPHC and regional CDCs with the resources and authority needed to regulate private sector reporting of SI on viral hepatitis
- Continue to support the work of regional authorities to optimize decisions on the decentralized distribution of RDT and treatments
- Explore opportunities to evaluate healthcare worker, patient, and community knowledge, attitudes, preferences, and experiences related to viral hepatitis and corresponding services
- Continue investment in the development of training material and explore opportunities to grow participation in training courses
- Strengthen monitoring and coordination of PMTCT to assure the successful transition to targeted HepB-BD and address existing PMTCT gaps
- Assure sufficient funding remains to continue momentum to build / train on SI tools in development and eventually integrate SI streams

Sustainable financing

- Consider the replacement of sofosbuvir/velpatasvir with sofosbuvir/daclatasvir as a major driver of savings and improved value-for-money
- Continue to explore possibilities to catalyze easier, more affordable confirmation testing, such as leveraging competition among local private labs to reduce prices / ensure reporting
- Push for inclusion of reimbursement of viral hepatitis services by NHSU
- Continue to ensure robust communication around pathway simplifications to ensure facilities are aware of and have adopted the latest guidelines

Strategic information

- Establishment of a system of prompt collection of information - quarterly exchange of data between the Center and the NHSU on the number of pregnant women, the number of children born on a quarterly basis.
- Conducting information and educational work among medical workers, women planning pregnancy, women of reproductive age, pregnant women on viral hepatitis issues.

Prevention of mother-to-child transmission and routine HBV immunization

- Establishment of a system of prompt collection of information – quarterly exchange of data between the Center and the NHSU on the number of pregnant women, the number of children born, in particular with pathologies on a quarterly basis.
- Development and approval of regional referral routes for HBV-positive pregnant women to receive treatment for HBV.
- Conducting information and educational work among medical workers, women planning pregnancy, women of reproductive age, pregnant women on viral hepatitis issues.
- Reconsider universal Hep B-BD, especially in areas under attack (high MTCT rate and confirmatory testing challenged)
- Consider availability of hepatitis B immunoglobulin in all regions

Blood safety

- Conclude the implementation of the new blood service information system.
- Consider a blood safety mission with support from WHO and extend the technical support to the full development and implementation of tissue and human milk banks.
- Use existing and adapted rapid needs assessment tools and methods for continuous improvement of blood safety

Infection prevention and control

- Consider an IPC mission with support from WHO
- Develop capacity-building and retention of IPC specialists
- Improve IPC national monitoring, and data collection on adherence to IPC minimum requirements – as conducted by the NHSU, UPHC and MoH
- Enhance authority and assure resources sufficient resources for UPHC and regional to lead efforts for IPC education, implementation and supervision
- Evaluate access to monovalent HBV vaccines for military populations, catch up immunization of HCWs

Harm reduction

- Sustain and build on efforts to integrate viral hepatitis services into OAMT services
- Sustain and build on efforts to integrate viral hepatitis services into outreach to PWID communities
- Facilitate the collection of SI on viral hepatitis services provided to PWID at ART and OAMT sites, and NGO outreach

Awareness and Linkage to care

- Increase public awareness of viral hepatitis
- Enhance healthcare worker vigilance, while addressing stigma associated with the disease
- Set up clear referral and counter referral for patients that test positive for viral hepatitis to mitigate loss to follow-up, particularly between serological and confirmatory testing and especially in the context of the cases of blood donors and individuals undergoing mandatory medical examinations (VLC)
- Ensure that the recommendation of HBV treatment where monitoring is an obstacle is widely communicated to healthcare workers and communities
- Explore where training can improve continuum and empowerment of nurses and mid-level healthcare personnel to support adherence monitoring and management of viral hepatitis B

Screening, Diagnosis and laboratory systems

Screening

- Identify how to ensure data quality and the granularity of strategic information associated with screening results, as screening SI will be crucial to optimize testing strategies as the programs scales screening targets and treatment volumes reduce the pool of PLHCV
- Set up clear referral and counter referral for patients that test positive for viral hepatitis to mitigate loss to follow-up, particularly between serological and confirmatory testing. Referral and counter referral can be assisted with standardized treatment and care pathways, information systems and alerts, and sensitization of staff on viral hepatitis and the importance of follow-up to patients
- Explore the development and promotion of self-testing for viral hepatitis. This approach could be highlighted for further review and guidance by the WHO to assess feasibility, acceptability, and integration into national screening strategies
- Collaborate with WHO to assess feasibility, acceptability, and integration into national screening strategies

Diagnosis

- Establish a national reference laboratory for viral hepatitis (or extent HIV reference laboratory activity to hepatitis) that can provide HCV/HBV if necessary as well as training and external quality control system (see more on the next slide)
- Carry out a two-step costing estimate for the expansion / integration of viral hepatitis laboratory services at state-run laboratories

    - The first step should focus on assessing the existing equipment, consumable needs, and overall capacity of state laboratories.
    - Based on these findings, the second step would involve planning and integrating PCR diagnostic services into state laboratories, ensuring system sustainability through state procurement of necessary consumables.
- Regional CDCs should be empowered to coordinate / enforce the reporting of laboratory testing volumes / results by private labs within their oblasts
- UPHC should considering adding further reporting requirements for molecular testing (e.g. referring health facility, age) to improve visibility on strategic information for the diagnosis stage of the cascade

Laboratory System

- National reference laboratory should support regional laboratories in at least the following aspects:
    - Provide training for HCV/HBV nucleic acid testing, including biosafety recommendations for HCW
    - Provide external control programs for HCV/HBV screening tests and nucleic acid testing
    - Provide additional molecular characterization tests in case of treatment failures (genotyping, resistance mutation analysis, follow up of patients with failure of the treatment)
    - Provide support to regional CDCs in case of stock discontinuation of confirmatory nucleic acid testing
    - Follow up at the national level of the yearly needs of screening and confirmatory tests
    - Follow up of the positivity rate of HBV/HCV screening

Treatment and care

- Establish algorithms for the follow up and treatment of HBV chronically infected patients
- Consider the implementation of new WHO recommendations for HBV treatment initiation where HBV viral load monitoring is not feasible
- Evaluate the feasibility of implementing WHO's updated recommendations that surplus PrEP supply can be used for HBV treatment
- Consider the feasibility of a national registry for monitoring the volume of warehouse patients awaiting HBV/HCV antivirals

Introduction

Ukraine is at the midway point of its 2019-2030 National Strategy for the AIDS, Tuberculosis, and Viral Hepatitis (NS2030), which provides the framework for national efforts to achieve elimination as a public health threat. Ukraine is also just past the midpoint of the 2024–2026 Operational Plan. This review examines the significant progress that the national response has achieved through the UPHC's leadership and the government's investment in the viral hepatitis response. Key achievements include the increase in the national budget, the decentralization of service delivery, the simplification of patient pathways, and the optimization of procurement for key commodities. These advances have been realized despite two major crises—the COVID-19 pandemic and the ongoing full-scale invasion by the Russian Federation, the latter in its 47th month at the time this report was prepared.

The viral hepatitis response has benefited from substantial increases in domestic investment and notable improvements in efficiency and value for money of expenditures. Nevertheless, funding constraints continue to create obstacles and difficult trade-offs—for example, the allocation of central funds to rapid diagnostic tests (RDTs) and antiviral procurement has sustained screening and significantly increased treatment, but there remains a gap in funding for nucleic acid testing. The health system has demonstrated remarkable resilience, and the ongoing scale up of viral hepatitis treatment is a testament to the commitment and competence of stakeholders across the response.

It is important to place the viral hepatitis burden in the historic epidemiological context and public health responses to Ukraine's full landscape of leading communicable disease threats. Two decades of large investments in HIV and TB have contributed to impact the trajectories of incidence and mortality from these epidemics.

The viral hepatitis programme is funded overwhelmingly by domestic financing. Even with major recent increases in the government's investment in the viral hepatitis response, total programme funding for viral hepatitis still represents a small fraction (roughly 10%) of the total funding for HIV—with larger share HIV funding coming from external funding. It is therefore important to emphasize that a significant drop in funding to the HIV and TB response could therefore represent a third major operational crisis complicating implementation of the 2019-2030 strategy. In the event of a loss of international donor funding for HIV and TB programmes, domestic funding for viral hepatitis could also be reduced. This is because disease programmes would face competition for limited state resources, potentially affecting the sustainability of the viral hepatitis response.

Fortunately, investments in communicable diseases are not either/or. Long-standing, large-scale investments in HIV and TB programmes offer important synergies for prevention, diagnosis and treatment services that can be leveraged for viral hepatitis. Moreover, routine HBV immunization—currently carried out through a monovalent and pentavalent vaccine—

represents a cornerstone of efforts to reduce hepatitis B incidence and mortality over the long term. Ukraine's administration of a pentavalent vaccine in its routine immunization highlights an important point of integration and synergies with the broader agenda for immunization and infectious disease control.

This review evaluates recent progress and current challenges. The recommendations build on the findings to highlight feasible actions in the near term. The findings of the mission team and related recommendations are grouped under the following main headings 1) governance and programme management; 2) sustainable financing; 3) strategic information; 4) prevention via a) prevention of mother-to-child transmission and routine HBV immunization; b) blood safety; c) infection prevention and control; d) harm reduction; 5) awareness and linkage to services; 6) screening; b) diagnosis and c) laboratory system; 7) treatment and care.

Methodology of assessment

The review comprised two concurrent phases. The first phase involved a desk review of publications, reports and policy documents related to Ukraine's viral hepatitis response. The second phase consisted of an online mission, organized as a series of structured consultations with a broad range of stakeholders engaged in the national response. These included representatives of relevant government agencies—at both national and regional levels—as well as hospitals, nongovernmental organizations and community groups. Each session combined stakeholder presentations with an open discussion period, allowing members of the WHO Review Team to raise questions and seek clarification. Following the consultations, participants shared supplementary documentation and written responses to follow-up queries.

Recent assessments provided an important foundation for the review and for preparation of the virtual mission. These included the WHO Regional Office for Europe's review of Ukraine's viral hepatitis programme conducted between September 2023 and January 2024, and a 2023 desk review by the Robert Koch Institute examining the impact of the COVID-19 pandemic on the national hepatitis response.

Online interviews were conducted with the following key informants:

- Anne Laevens, Chief of Health and Nutrition, UNICEF Ukraine
- Andrii Orfin, Deputy Director for Medical Affairs, Lviv Regional Infectious Diseases Clinical Hospital
- Dina Marunko, Alliance for Public Health (APH)
- Igor Zaytsev, Professor, Department of Therapy, Infectious Diseases and Dermatology, Bogomolets National Medical University
- Iryna Chukhalova, Infectious Disease Specialist, Director, Communal Non-Profit Enterprise "Dnipropetrovsk Regional Centre of Socially Significant Diseases"
- Iryna Dizha, Senior Officer, Innovation Unit, 100% Life
- Iryna Ivanchuk, Head, Viral Hepatitis and Opioid Dependency Department, UPHC
- Iryna Skrypka, Specialist, Management and Counteraction, Viral Hepatitis and Opioid Dependency Department, UPHC
- Iryna Voloshyna, General Practitioner – Family Physician, board member of the Academy of Family Medicine of Ukraine, NGO "Parents for Vaccination"
- Irina Demchyshyna, Head, Virology Reference Laboratory, UPHC
- Ivan Titar, Senior Research Specialist, UPHC
- Kateryna Nekrasova, Deputy Director General for Client Experience and International Engagement at Medical Procurement of Ukraine
- Kateryna Strelkova, Specialist, Viral Hepatitis Management and Prevention and Opioid Dependency Department, UPHC
- Kostyantyn Dumchev, Scientific Director, Ukrainian Institute on Public Health Policy (UIPHP)

- Liudmyla Shumylo, Officer, Global Fund Project Management Team, 100% Life
- Lyudmyla Pavliuk, Head, Immunization Department, UPHC
- Mariia Moshura, Head of the Research Department, UPHC
- Maryna Kornilova, Project Manager, APH
- Maryna Parkhomenko, Project Manager, APH
- Maryna Kovalova, Head, Pharmaceutical Management and Inventory Control Department, UPHC
- Mariya Kravchuk, Infectious Diseases Specialist, Communal Non-Profit Enterprise “Dnipropetrovsk Regional Centre of Socially Significant Diseases”
- Nataliia Bugaienko, Head, Department of Organization of Epidemiological Surveillance, UPHC
- Nataliia Husak, Head, NHSU
- Nataliya Yakovets, Dnipro (position unconfirmed)
- Oksana Kyrychok, Programme Lead, 100% Life
- Oleksandr Kurdus, Specialist, IT Department, UPHC
- Oleksandr Serhiienko, Deputy Director for Medical Affairs, Lviv Regional Infectious Diseases Clinical Hospital
- Oleksandr Vovchenko, Deputy General Director, UPHC
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Findings and recommendations

The findings of the mission team and related recommendations are grouped under the following main headings 1) governance and programme management; 2) sustainable financing; 3) strategic information; 4) prevention via a) prevention of mother-to-child transmission and routine HBV immunization; b) blood safety; c) infection prevention and control; d) harm reduction; 5) awareness and linkage to services; 6) screening; b) diagnosis laboratory system; 7) treatment and care.

Governance and programme management

Effective governance and programme management are central to achieving the elimination of viral hepatitis as a public health threat.

Findings

The National Strategy on HIV/AIDS, Tuberculosis and Viral Hepatitis 2019–2030 (1), adopted in November 2019, provides the overarching framework for Ukraine's response to viral hepatitis. The associated operational plan for 2024–2026 defines near-term objectives and guides implementation across all levels of the health system. Within this framework, the Ministry of Health (MoH) and the Ukrainian Public Health Centre (UPHC) have a central role in policy leadership, coordination, and monitoring of the national response.

Fig. 1. Impact targets of Ukraine's NS2030 versus WHO Targets (1,2)

Impact target (%)	**National 2020**	**National 2025**	**National 2030**	**WHO 2020**	**WHO 2030**
Reduction of incidence of chronic viral hepatitis B and C	5%	40%	90%	30%	90%
Reduction of mortality associated with viral hepatitis	0%	10%	65%	10%	65%
Process target (%)	**2020**	**2025**	**2030**	**2020**	**2030**
HepB3 coverage in children	75%	90%	90%	90%	90%
People with viral hepatitis who know their status	10%	50%	90%	30%	90%
Treatment coverage of persons with viral hepatitis C	10%	50%	90%	-	80%
Treatment coverage of people with hepatitis B among those in need of treatment	3%	20%	40%	-	80%

Source: Government of Ukraine.

Overall coordination of the national response is overseen by the MoH, in close collaboration with the UPHC and partners. The regional CDCs primarily focus on data collection, awareness-raising, educational activities among healthcare workers and the general population, outreach to key risk groups, screening and laboratory testing, and conducting mobile testing services. They also provide training in infection prevention and control. The UPHC coordinates with the Central Procurement Agency (MPU)—a state enterprise under the umbrella of the MoH—on the centralized procurement of commodities. The NHSU oversees compliance with national standards at healthcare facilities, which play a critical role in the implementation of integrated viral hepatitis services. NGOs and community-based networks remain indispensable partners in both prevention and service delivery. Their contribution extends across awareness-raising, community outreach, testing, and linkage to care, and they collaborate closely with state institutions—including the MoH, the Ministry of Justice (MoJ), and the Ministry of Defense (MoD)—ensuring the inclusion of key and vulnerable populations. The establishment of the regional CDCs has strengthened the public health infrastructure and enhanced the system's capacity to operationalize national policies and gather strategic information.

Despite the profound disruptions caused by the COVID-19 pandemic and the ongoing full-scale invasion, Ukraine has achieved considerable progress in the implementation of the viral hepatitis programme. Among the most significant achievements are the decentralization of HCV treatment—from only 18 facilities at the start of the 2020 to nearly 300 by 2024—and the rapid expansion of HBV and HCV treatment volumes. Optimized procurement of direct-acting antivirals (DAAs), achieved through a complete transition to generics, has markedly increased cost efficiency and enabled expanded volumes of treatment procurement. Centralized procurement of rapid diagnostic tests (RDTs) was initiated for the first time in 2022. The current operational plan sets ambitious national targets for both screening and treatment coverage through 2026.

As a key objective of the 2019–2030 strategy (NS2030), the elimination of mother-to-child transmission of hepatitis B—one component of the triple elimination goals—requires a unique degree of coordination across actors along the continuum of services from ANC to neonatal care. Gaps in the coverage of these interventions, explored further in the section on elimination, indicate that this complex challenge requires additional support.

These achievements reflect the resilience of Ukraine's health institutions and their ability to adapt under exceptional circumstances. The UPHC and MoH, working in collaboration with regional CDCs and NGOs, have maintained coordination mechanisms that integrate viral hepatitis activities with those for HIV, tuberculosis, and opioid agonist maintenance therapy (OAMT). Ukraine's HIV programme, which relies almost entirely on a network of state and not-for-profit health facilities, demonstrates the impressive existing capacities of the national health system and offers a blueprint for the scale and scope of viral hepatitis services that could be achieved with greater funding. In particular, the HIV's national reference laboratory and its network of state regional laboratories offer a blueprint for the scale up of publicly-supported laboratory services for viral hepatitis—the reliance on private laboratory services for viral hepatitis diagnosis currently being a key barrier in the clinical pathway and a major obstacle to program scale up.

The implementation of the viral hepatitis response continues to face substantial challenges. Persistent shortages of human resources, logistical constraints, and limited financing hinder operationalization of the programme. Decentralization of hepatitis services is unfolding in parallel with broader health system restructuring, which is progressing at different speeds across oblasts. This uneven pace makes integration and coordination difficult, particularly in regions affected by displacement and insecurity.

The private sector plays an important and growing role in service provision. Approximately one-third of Ukraine's 23,000 family doctors operate within private practice, and private laboratories conduct most molecular testing for viral hepatitis *(3)*. While this capacity contributes significantly to service availability, it also presents key challenges. Out-of-pocket payments remain a barrier for patients, and inconsistent reporting from private laboratories limits the visibility of testing data and hinders accurate national monitoring.

Ukraine's technical expertise in operational and implementation research represents an important asset, but resource constraints have limited the ability to mobilize this capacity to evaluate evolving models of care or monitor epidemiological trends. In addition, while training programmes supported by the UPHC have improved facility-level capacities, the number of trainings and participants remains well below those for HIV, TB, and OAMT, underscoring the need for sustained investment in workforce development.

Taken together, the findings highlight a programme that continues to progress despite crisis conditions. The UPHC and its partners have achieved a high degree of institutional maturity in programme management and coordination, supported by strong collaboration with NGOs and local health authorities.

Recommendations

- Empower UPHC and regional CDCs with the resources and authority needed to regulate private sector reporting of SI on viral hepatitis (i.e., addendum to current Orders on professional regulation/licensing and accreditation)
- Continue to support the work of regional authorities to optimize decisions on the decentralized distribution of RDT and treatments
- Explore opportunities to evaluate healthcare worker, patient, and community knowledge, attitudes, preferences, and experiences related to viral hepatitis and corresponding services
- Continue investment in the development of training material and explore opportunities to grow participation in training courses
- Strengthen monitoring and coordination of PMTCT to assure the successful transition to targeted HepB-BD and address existing PMTCT gaps
- Ensure sufficient funding remains to continue momentum to build / train on SI tools in development and eventually integrate SI streams

Sustainable Financing

Sustainable financing is critical to the planning, coordination, and implementation of Ukraine's viral hepatitis response. Beyond ensuring predictable budget flows for commodity procurement and service delivery, it requires the strategic prioritization of interventions that deliver strong value for money and sustained public health impact.

Findings

In Ukraine, viral hepatitis services are financed through a hybrid of public, private, and donor sources. The UPHC coordinates financing and financial flows, while the MoH remains the main recipient of state budget funds, and the MPU is responsible for the actual procurement, delivery, and distribution of medicines and tests. Program management within the UPHC and MPU is partially supported through project funding, while health departments, facility administrations, and regional CDCs carry out their responsibilities within their routine staffing functions. The National Health Service of Ukraine (NHSU) complements these efforts through per-patient capitation payments that finance outpatient service delivery and facility overheads. These capitation payments support care using commodities procured either centrally by the UPHC or locally by health facilities.

Centralized procurement of screening tests and medicines for viral hepatitis diagnosis and treatment is conducted by MPU. The UPHC coordinates financial flows, MoH is the main recipient of budget allocations, and MPU carries out procurement, delivery, and distribution. Consumables for PCR testing are currently not included in the official list of medicines and medical supplies for viral hepatitis diagnostics and treatment, which limits the possibility of procurement from the state budget. Although PCR services for HBV and HCV are included in the ambulatory care package, the funding provided is considerably lower than the actual costs of consumables and the needs of the laboratories. Consequently, access to confirmatory RNA testing for HCV and viral load monitoring for HBV depends largely on private laboratory services paid out of pocket by patients.

Despite these limitations, the MoH and UPHC have secured significant budget increases for viral hepatitis in recent years. UPHC's allocation for the programme grew from UAH 148 million in 2022 to UAH 794,666,198 in 2025, even amid the severe fiscal constraints imposed by the full-scale invasion. These funds have been used strategically to maximize impact through optimized procurement of direct-acting antivirals (DAAs). A full transition to generic medicines has reduced treatment costs dramatically, allowing funds to reach far more patients. Previously, more than half of the budget over a two-year period was used to treat only 710 patients with branded DAAs, while the remaining 43% covered over 14,000 with generics (according to a UPHC presentation shared during the virtual mission). Building on this efficiency, Ukraine procured 42,000 treatment courses in 2024 and more than 93,000 in 2025, marking an unprecedented expansion in access to curative therapy. The UPHC and MPU should be fully commended for this major achievement.

Further cost reductions have been achieved through updates to national clinical guidelines in 2021, as well as the review and updating of guidelines in 2025, in line with current WHO recommendations and international hepatology associations, which have simplified the HCV treatment pathway and reduced the overall cost per patient achieving sustained virologic response (SVR) by up to 90%. For the HBV patient pathway, HBV pre-treatment monitoring of viral load remains a particularly important cost.*

Figure 2: National funding of the viral hepatitis response (4)

Source of funding	2022	2023	2024	2025
Total funding (UAH)	148 502 500	170 832 100	315,152,545	794,666,198

Source: UPHC.

Opportunities remain to optimize procurement further. Recent procurement prices indicate that replacing sofosbuvir/velpatasvir (SOF/VEL) with sofosbuvir/daclatasvir (SOF/DAC) could cut the cost of a 12-week course from approximately USD 172 to USD 61 (the price for SOF/DAC delivered as separate components according to the 2022-2023 state budget at UAH 36.6 to 1 USD) —a 65 percent reduction. At the 2025 procurement volume of over 93,000 12-week DAA courses, a switch to SOF/DAC could generate several million dollars in savings.

It is important to note that past procurement and delivery of different components of treatment regimens were often sourced from different manufacturers or factories. Consequently, supplies to the national warehouse were not always synchronized. For example, during the COVID-19 period, the delivery of sofosbuvir and daclatasvir was delayed by up to 10 months. Considering the shelf life of generics at that time was 16-18 months, such delays limited the use of some regimens for patients requiring a full 6-month course. There are quality-assured fixed-dose combinations of SOF/DAC currently on the market; procurement of a fixed-dose version of SOF/DAC would eliminate the complications created by this added layer of complexity.

Logistical challenges have also affected delivery to Ukraine. Generic medicines from India are typically shipped by sea over 3-6 weeks, followed by transport from European ports (Poland, Lithuania, Latvia) by road or air to regional hubs, and then by road to Ukraine. This complex route increases transportation costs and requires higher prices to cover insurance and logistics risks.

* The WHO recently recommended the initiation of antiviral treatment in situations where access to viral load monitoring is a barrier. In that context, it is relevant to note that, purely from a cost perspective, the cost of procuring a year's supply of generic tenofovir for HBV treatment is roughly equal to (and may be less than) the cost of lab consumables for the recommended two HBV viral load tests per year.

In terms of savings per treatment course, the roughly $100 price difference between SOF/VEL and SOF/DAC could fully fund procurement of laboratory consumables (6).

Ukraine continues to benefit from a discounted price from Cepheid. Under this arrangement, cartridges are procured for USD 14.99 per unit through charitable organizations rather than the national procurement agency. State laboratories operate GeneXpert machines and other analyzers, including open systems supplied during COVID-19. An assessment is therefore needed to determine which consumables are economically optimal for use.

With regards to the prevention of mother-to-child transmission (PMTCT), a special Gavi transitional program is currently in place, and vaccines are provided through UNICEF and other charitable organizations. the central viral hepatitis budget in Fig. 2 does not contribute to the procurement of vaccines for HBV immunization. The UPHC division does not receive dedicated funds for vaccine procurement. Rather, the division coordinates the assessment of vaccine needs, delivery logistics, and monitoring of vaccine utilization. Vaccines for routine childhood immunization and catch-up vaccination up to 18 years of age are supplied through the Gavi transitional program and other charitable initiatives. Vaccination for adults is recommended but not mandatory, and therefore is not provided through the program.

The NHSU supports delivery through a combination of per-patient capitation payment and tariffs for specific services. NHSU's low annual capitation rate—around 850 UAH per patient—restricts the budget available for all outpatient services and forces facilities to balance hepatitis care against competing priorities. Because capitation payments are not easily transferred between facilities, sites that receive large numbers of internally displaced persons often face additional strain on already limited budgets.

Treatment for hepatitis B and C is incorporated within the ambulatory care package of the Medical Guarantees Program. In certain cases, such as acute hepatitis or severe liver disease, treatment for 5-7 days may also be provided under the inpatient care package. However, the combination of low per patient capitation payments and low service tariffs for viral hepatitis mean that the viral hepatitis response faces bottlenecks and that access to commodities for viral hepatitis is heavily dependent on centralized funding based on annual allocations. The expansion of HBV antiviral procurement is a positive step but increases the baseline funding required to sustain ongoing treatment for those who have initiated therapy. In this context, payments for services provided by health facilities are reimbursed by the NHSU. Funds are transferred to NHSU accounts through MoH allocations and ultimately disbursed by the Ministry of Finance according to calculated needs, ensuring continuity of care.

External funding continues to play a vital, though relatively focused, role in Ukraine's viral hepatitis response. International partners—particularly the Global Fund to Fight AIDS, TB and Malaria (GFATM) and the U.S. President's Emergency Plan for AIDS Relief (PEPFAR)—provide critical support for prevention, awareness, and harm reduction activities targeting key populations most at risk of HIV and hepatitis. While direct external financing for testing and

treatment remains limited, it has had a meaningful impact. In recent years, GFATM support has enabled confirmatory diagnostics for approximately 3,250 for HBV patients and 11,400 for HCV patients. This investment not only expanded access but also demonstrated the feasibility of using Ukraine's established HIV and TB laboratory networks to support viral hepatitis diagnostics.

When placed in the broader health financing landscape, the scale of viral hepatitis funding remains comparatively small. In 2024, domestic spending on viral hepatitis was around USD 7 million, compared to roughly USD 10 million for HIV and USD 3 million for opioid agonist maintenance therapy (OAMT). External partners continue to play a much larger role in the HIV and TB responses—in 2024, PEPFAR alone provided nearly USD 60 million for HIV, while the GFATM contributed over USD 30 million for HIV. Thus, while Ukraine's domestic allocations for hepatitis are growing, the overall financial envelope for HIV remains roughly ten times larger.

The growing domestic investment in viral hepatitis demonstrates Ukraine's commitment to achieving the 2030 elimination targets, but the programme remains vulnerable to fiscal and structural pressures. Expanding reimbursement coverage under NHSU, securing dedicated funding for laboratory consumables, and continuing to optimize procurement will be key to consolidating progress. Continued collaboration between public institutions, private providers, and international partners will be essential to ensure the sustainability, equity, and resilience of Ukraine's viral hepatitis response.

Recommendations

- Consider the replacement of sofosbuvir/velpatasvir with fixed-dose sofosbuvir/daclatasvir as a major driver of savings and improved value-for-money, taking into consideration the reliability and feasibility of volumes and timelines for procurement of fixed-dose SOF/DAC
- Continue to explore possibilities to catalyze improved access to nucleic acid testing
    - Explore potential savings from a switch to sofosbuvir/daclatasvir to open up funds for centralized procurement of laboratory consumables;
    - Explore options to leverage competition among local private labs to reduce prices (i.e., **pooled procurement on behalf of regional labs**, leveraging **competition among local private labs** to reduce prices/ensure reporting); this is currently partially implemented by NHSU: patients can access diagnostics in private laboratories; however, the current volume is limited, given that consumables are often purchased from laboratories' internal budgets. Expansion may require increased reimbursement rates for services funded by NHSU.
- Push for inclusion of payments for viral hepatitis services within the ambulatory care package of the Medical Guarantees Program by NHSU
- Sustained funding remains crucial to moving forward existing efforts to integrate and adapt tools for strategic information

Strategic information

Strategic information systems are a cornerstone of effective disease control. For viral hepatitis, they enable national and regional authorities to understand epidemiological trends, monitor programmatic progress, and guide decisions on resource allocation. A well-integrated system of data collection, analysis, and use is therefore essential to achieving elimination goals.

Findings

The UPHC is the lead institution responsible for the synthesis and analysis of national data on viral hepatitis, as well as for the design and development of strategic information (SI) tools and systems. Regional Centres for Disease Control (CDCs) play a central role in data collection and local data use, linking facility-level reporting to national systems. Despite the disruptions caused by the COVID-19 pandemic and the ongoing full-scale invasion, the UPHC has maintained and expanded its SI functions, ensuring the continuity of surveillance and reporting across multiple programmatic areas.

The scale of population movements since February 2022 has significantly complicated data interpretation. According to UN estimates, Ukraine's population has declined by nearly 25 percent—around 10 million people—due largely to external displacement. Millions more have been internally displaced *(27*). Moreover, there have been significant losses among both military personnel and civilians due to active hostilities. These dynamic flows make it difficult to calculate denominators for coverage estimates and project service volumes. Furthermore, limited data on viral hepatitis status and service coverage for Ukrainians who have temporarily relocated abroad, including children born outside the country, constrain understanding of viral hepatitis trends among externally displaced populations—many of whom are expected to return.

Despite these challenges, Ukraine has made tangible progress in improving the inclusion of viral hepatitis within national information systems. The landscape of strategic information is the result of a mixed system of data collection and aggregation, as some information is provided directly to the Centre by Health Departments or healthcare facilities. UPHC has initiated the integration of hepatitis indicators into the Electronic System for Epidemiological Notification (ESEN), the Medical Information for Socially Significant Diseases (MISSD), and national supply-chain monitoring platforms. While integration remains partial and at an early stage, these steps mark meaningful progress toward comprehensive, real-time monitoring of the hepatitis response. Collaboration with CDAF has also resulted in updated epidemiological estimates, providing an improved evidence base for planning.

However, the review identified important structural constraints. Limited financial and human resources restrict the ability of UPHC and regional CDCs to carry out epidemiological investigations or verify the accuracy of reported data. Follow-up on positive cases to understand potential transmission routes is rarely possible. The lack of harmonization of parallel reporting systems—covering epidemiological surveillance, commodity management, and service

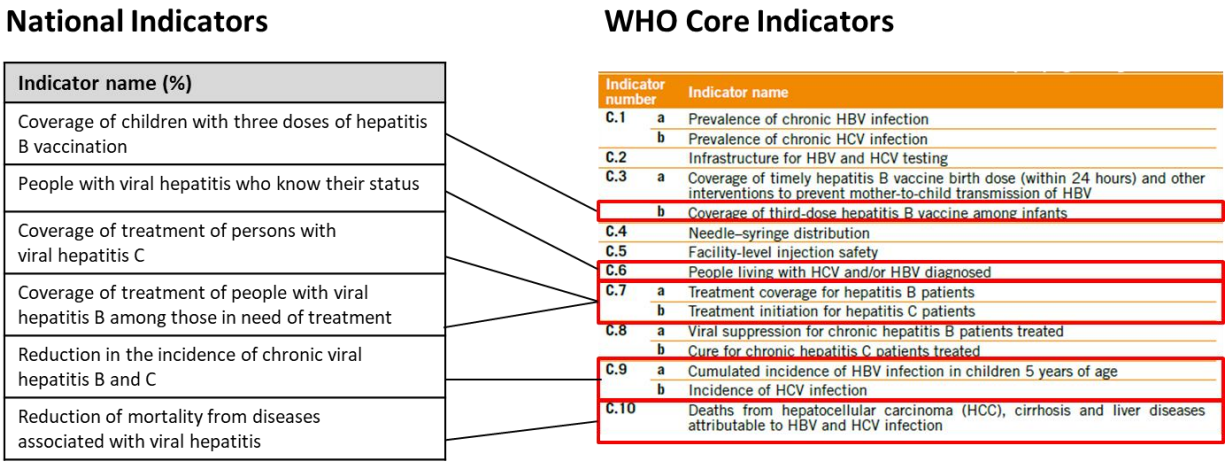
delivery—affects clinical monitoring of cases, verification of diagnostics and treatment prescriptions, and evaluation of service quality through information systems.

A major systemic barrier is the absence of a unique national patient identifier. Without a unified identifier linking patients across datasets, it is difficult at the clinical level to reliably track individuals through the testing, diagnosis, treatment, and follow-up stages. This prevents an accurate assessment of the cascade and an accurate sense of the volume of "warehouse" patients—i.e. either those awaiting confirmation testing after screening anti-HCV positive or those awaiting treatment following viremia confirmation. Even if a unique identifier were introduced, gaps would persist, as the majority of nucleic acid testing is conducted by private laboratories that do not consistently report volumes or results. This lack of visibility significantly undermines the strategic information available for both clinical purposes and programme purposes.

Gaps in information flow are particularly acute in the context of the prevention of mother-to-child transmission of hepatitis B, where data on screening results and birth dose administration are fragmented across multiple reporting channels.

Ukraine's viral hepatitis programme tracks five of the ten WHO core indicators for elimination.

Fig.3. Alignment of NS2030 Indicators with the WHO's Core Indicators for Elimination *(7)*



The academic and research community in Ukraine continues to make valuable contributions to the evidence base for hepatitis elimination, including through pilot projects and operational research. However, limited funding has constrained the translation of these findings into policy and programme improvements. Strengthening the partnership between academic institutions, public health authorities, and implementing partners would enhance Ukraine's capacity for data-driven decision-making.

Overall, while UPHC has the experience and expertise to develop a comprehensive strategic information system, sufficient funding for SI is needed to realize the potential of UPHC leadership in this area.

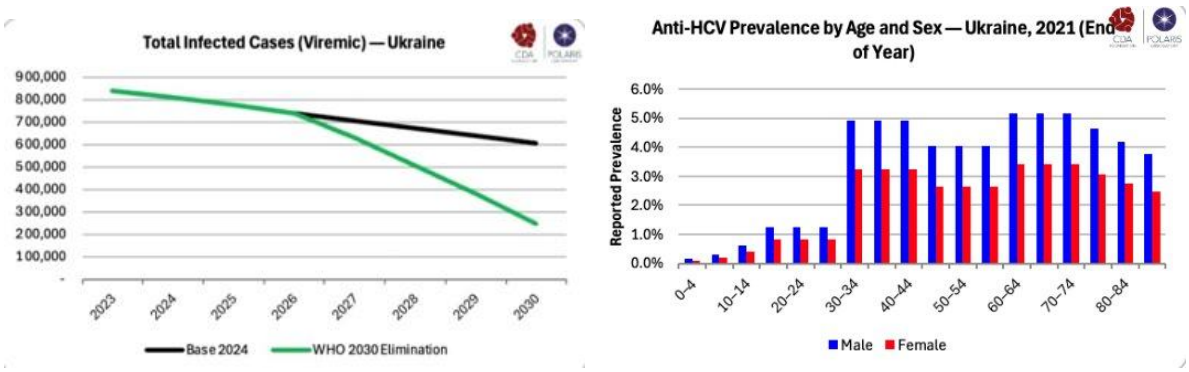
Epidemiological overview of morbidity and mortality from HBV and HCV

Estimates of PLBHV / PLHCV and seroprevalence by age groups (8)

There are an estimated 774,964 persons living with HCV in 2025 and 315,681 persons living with HBV in 2025. Anti-HCV prevalence is nearly 50% higher in men than women across age groups, with peaks of 5% in men between the ages of 30-44 and 60-74; HBsAg prevalence is estimated to be nearly 200% higher in men than women across all age groups, with a peak in the age group of 30-44—an age group born in the 1980s and 1990s, prior to the 2002 introduction of routine immunization for hepatitis B.

Fig. 4a. Estimated total number of persons living with HCV viremia, Ukraine, 2023–2030

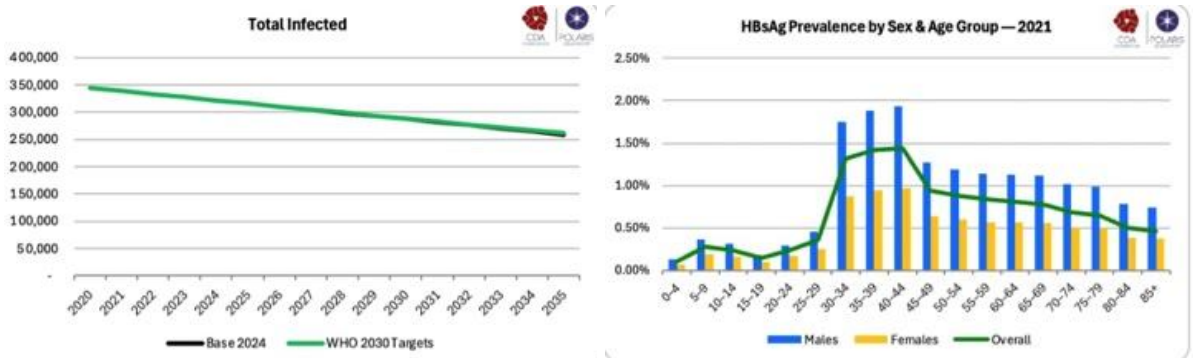
Fig. 4b. Estimated prevalence of anti-HCV by age and sex, Ukraine, 2021



Source: CDAF

Fig. 5a. Estimated total number of persons living with HBV, Ukraine, 2023–2035

Fig. 5b. Estimated prevalence of HBsAg by age and sex, Ukraine, 2021



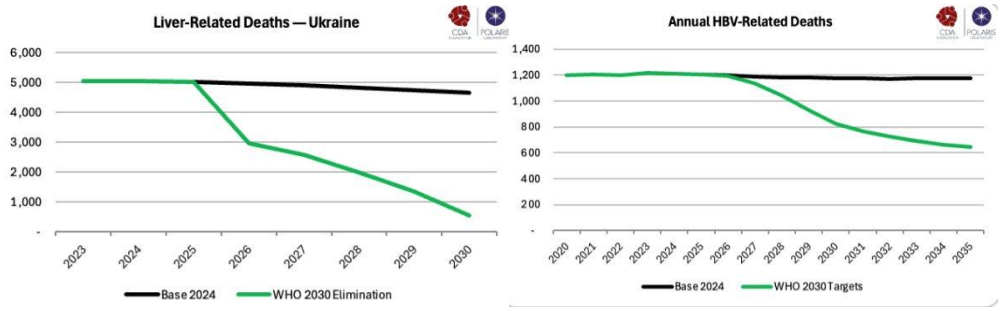
Source: CDAF

HBV- and HCV-Related Mortality and Incidence of Advanced Liver Disease

There were an estimated HCV-related 5,019 deaths and 1,205 HBV-related deaths in 2025. Although the number of persons living with HCV is estimated to be twice the number of PLHBV, current annual mortality from HCV is estimated at four times the level of HBV-related mortality. This can be partly explained by the distinct prevalence distribution across age groups, with HCV prevalence roughly as high in elderly adults as in middle-aged adults and HBV prevalence in older adults being considerably lower than in middle-aged.

Fig. 6a. Estimated HCV-related deaths, Ukraine, 2023–2030

Fig. 6b. Estimated HBV-related deaths, Ukraine, 2023–2030



Source: CDAF

HCV accounts for an estimated 3,922 new cases of hepatocellular carcinoma (HCC) and 3,116 cases of decompensated cirrhosis, while HBV contributes approximately 916 HCC cases and 373 cases of decompensated cirrhosis.

These estimates of morbidity and mortality—made by drawing on empirical data on the natural history of viral hepatitis, national surveillance and programmatic data from the UPHC, and expert input from Ukrainian hepatology and public health specialists—reflect the long-term impact of undiagnosed and untreated infections accumulated over decades.

An attributable fraction study conducted across three hospitals (Shalimov's National Institute of Surgery and Transplantation, the National Cancer Institute, and the Kyiv City Clinical Cancer Center). provides an important reference point for the contribution of viral hepatitis to advanced liver disease. The study concluded that HBV and HCV are responsible for the following share of advanced liver disease:

Fig. 7. Attributable fraction of cirrhosis and HCC cases caused by HBV and HCV *(9)*

	Cirrhosis	**HCC**

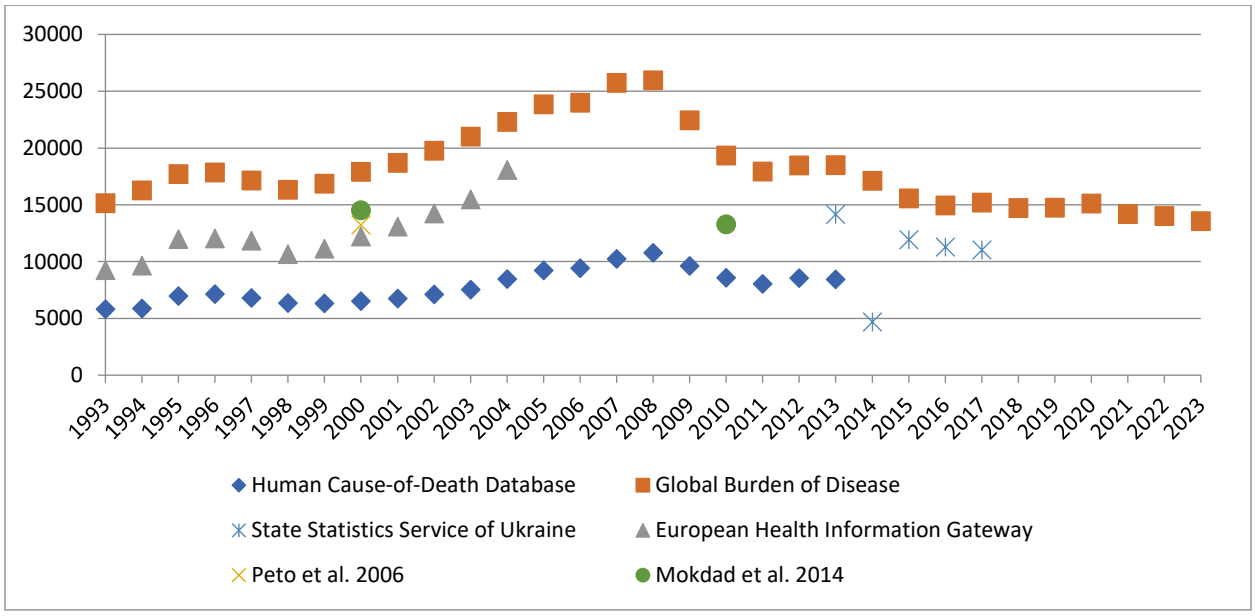
HBV	14.6%	18.1%
HCV	36.8%	65.0%
HBV/HCV coinfection	0.0%	1.4%
Total	51.4%	80.7%

Source: Attributable Fraction Study Brief Report, WHO/EURO and UPHC (2021)

The attributable fraction study also highlights that many people with cirrhosis and HCC have never been tested for viral hepatitis—26% of patients with advanced liver disease across the three sites had not been tested for viral hepatitis.

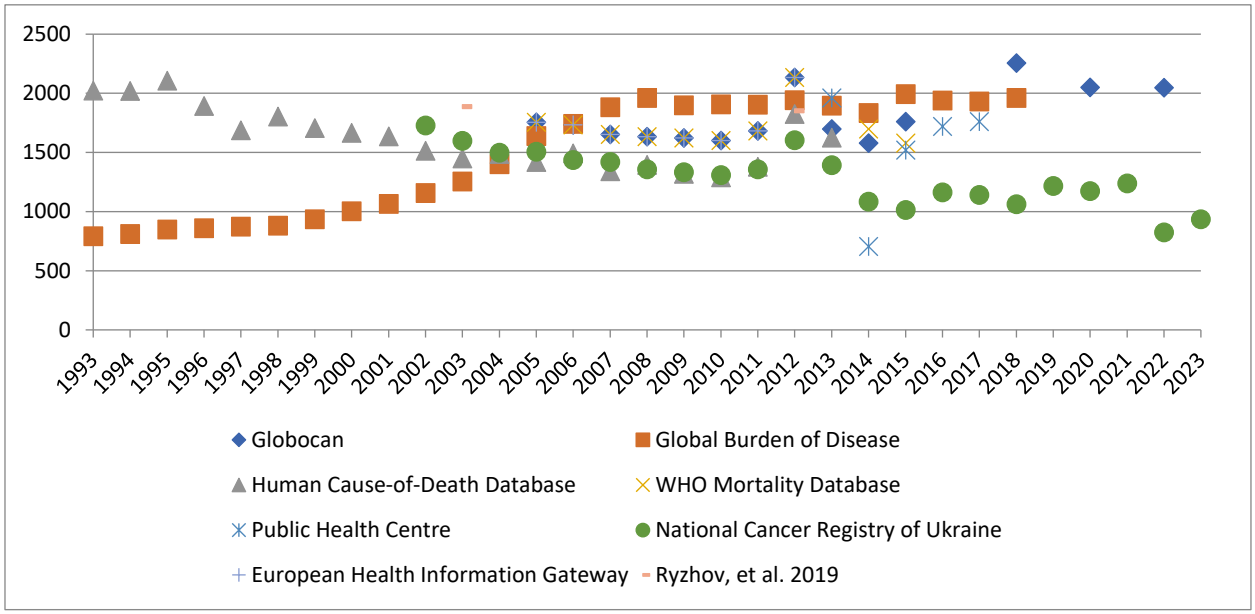
Comparing the updated estimates on annual incidence of HBV-related and HCV-related liver disease with empirical reporting on cirrhosis and HCC, it appears that many HCC-related deaths are occurring in Ukraine without a formal diagnosis of HCC taking place.

Fig. 8. Reported Cases of Cirrhosis in Ukraine



Source: Global Burden of Disease, Human Cause-of-Death Database, State Statistics Service of Ukraine

Fig. 9. Reported Cases of HCC in Ukraine



Source: Globocan, Human Cause-of-Death Database, National Cancer Registry of Ukraine, Public Health Centre, WHO.

Epidemiology Among At-Risk and Key Populations

PWID remain the population most affected by HCV in Ukraine. Across IBBS surveys from 2007 to 2020, HCV antibody prevalence in PWID rose from 50% to 73% overall but declined from 58% to 27% in populations under the age of 25. The 2023 Integrated Bio-Behavioral Survey (IBBS) found an anti-HCV prevalence of 69% among PWID—an increase from previous survey rounds *(10)*. Of note, iterations of PWID IBBS results indicated that anti-HCV seroprevalence had dropped significantly in PWID under the age of 25, a potentially positive indication of the impact of harm reduction services.

The most significant at-risk group are people who inject drugs (PWID) and those with a history of injecting drug use. This is a result of the size of the population and the prevalence. The 2023 survey did not include a national PWID size estimate. A lack of a post-2022 size estimates of the population size makes it difficult to estimate service coverage for viral hepatitis and harm reduction services—the most recent estimations of 300-350,000 come from 2019 data. APH estimated during the review that there are 250,000 people with hepatitis C among Ukraine's PWID population, based on a 70% anti-HCV seroprevalence rate *(11)*. This would mean that PWID account for between one in four and one in three HCV infections nationally. The high prevalence highlights both the importance of ongoing harm reduction services as a primary focus of prevention efforts and a major channel for engagement on the pathway to treatment. IBBS 2023 coverage among PWID was incomplete; however reliable results were available for Rivne, where almost 100% of participants were tested (50.7% anti-HCV prevalence), and Vinnytsia, where 85.6% were tested (57.5% anti-HCV prevalence).

Lack of recent serosurveys and population estimates make it difficult to estimate epidemiological trends and coverage levels of services across key populations. In particular, there should be caution in extrapolating pre-invasion prevalence and population estimates to post-2022 / current estimates. Available data indicate that:

1. PWID have the highest prevalence among key populations: HBV prevalence was 5.4% and HCV 63.9% in 2018; HCV prevalence increased to 68.4% in 2020 (HBV data were not collected in 2020);

2. Prisoners in 2023: HBV 5.8% and HCV 29.2% *(26*); a previous 2019 IBBS had shown an anti-HCV rate of 48.9%, varying from 32% to 69% across institutions *(12)*.

3. Sex workers: anti-HCV prevalence 7.9% in 2021;

4. MSM: anti-HCV prevalence remained at 1.8% in both 2021 and 2024; an analytical report based on IBBS 2024 data among men who have sex with men (MSM) is currently under preparation and could be referenced in due course.

5. Transgender people: anti-HCV prevalence was 2.4% in 2021 and decreased to 1.2% in 2024.

6. The UPHC estimated that in 2019 there were nearly 30,000 HCV-positive individuals living with HIV in Ukraine (17). A 2019/2020 study of PLHIV receiving ARVs at two Kyiv-based health facilities found an anti-HCV rate of 37.3% and HBsAg+ rate of 5.3% (13). For context, the UPHC's estimate of the number of PLHIV at the outbreak of the full-scale invasion was 245,000 (14); the number of PLHIV on ARTs was reported at 118,000 at the end of 2023 (15).

Of note, many interviewees also emphasized that many people who engage in higher-risk behaviours, such as informal drug use or sex work, do not identify as members of key populations and may therefore be missed by surveillance. As treatment access expands, future seroprevalence surveys will need to be adapted to reflect the impact of treatment scale-up and to capture the evolving epidemiological profile of at-risk and marginalized groups.

It is also relevant to highlight emerging occupational risk groups in Ukraine. These include military personnel, emergency service workers, and military healthcare professionals, who may face elevated risks of infection due to frequent occupational exposure to blood, often involving patients whose viral hepatitis status is unknown. The desk review did not identify any recent data on HBV and HCV seroprevalence in healthcare workers, despite their occupational exposure risk. Seroprevalence in this population was not addressed during the mission.

Recommendations

- Support local / regional bodies to carry out epidemiological investigations on risk factors and routes of transmission

- Consider systematic screening of healthcare workers for viral hepatitis could provide important strategic information, as well as represent an awareness building opportunity related to IPC and treatment availability. Consideration may also be given to a dedicated assessment of military healthcare workers. Particular attention could be given to medical professions with frequent exposure to blood, given the elevated occupational risks, and to strengthening intersectoral civil–military collaboration in the collection and analysis of related data.
- Ensure resources are available for UPHC to build on and sustain efforts to integrate viral hepatitis into individual data systems, as well as for improvements in data exchange between existing systems and institutions, such as UPHC, the MoH, the NHSU, and the National Cancer Institute.
- Sustain resources for regional CDCs for the evaluation of data (analysis toward decentralization, validation of data quality) and support capacity-building on data reporting where relevant
- Continue to improve data on hepatitis-related mortality through strengthening vital statistics systems and implementing and properly documenting systematic screening for hepatitis B and C among patients presenting with advanced liver disease

Prevention

Strategies to prevent the transmission of viral hepatitis have several pillars. These include the prevention of mother-to-child transmission (PMTCT) (via screening/treatment of pregnant women and administration of birth-dose vaccine), routine immunization of infants, blood safety, minimum IPC standards, and harm reduction. Recently, affordable and highly effective antivirals for hepatitis C treatment have made treatment-as-prevention (TasP) a strategic dimension.

Essential health services and prevention strategies—including HBsAg screening in ANC, minimum IPC standards, and harm reduction—reduce the risk of viral hepatitis B and C. Degrees of HBV and HCV transmission risk varies by modes and age at time of exposure: the risk of perinatal HBV transmission is far higher than HCV transmission to infants, while the risk of HCV transmission through unsafe injection in adults is higher than for HBV. Crucially, key dimensions for prevention of viral hepatitis are also important to the reduction of HIV transmission. This important overlap is an essential strategic consideration.

PMTCT of hepatitis B and C and hepatitis B immunization

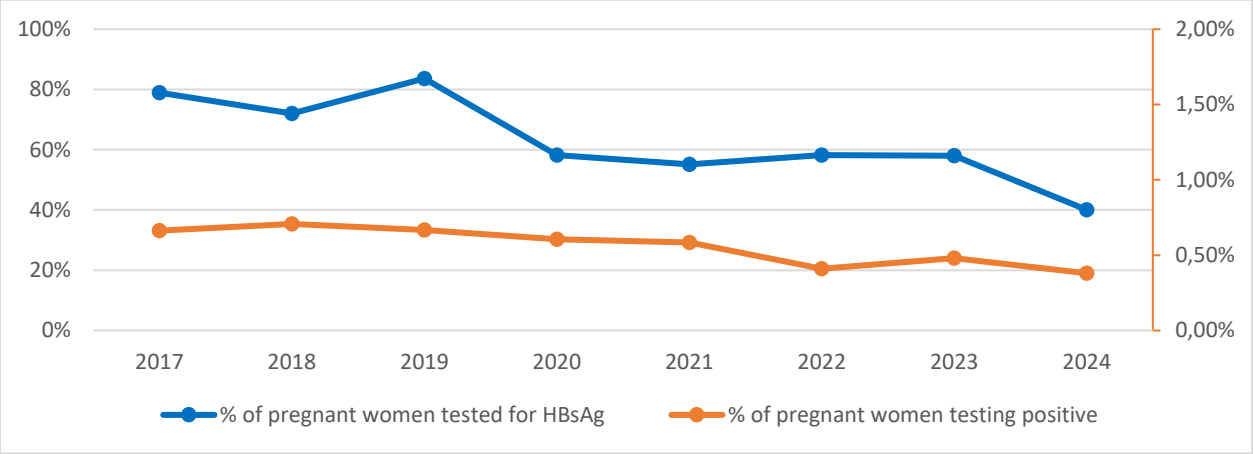
PMTCT of hepatitis B is a critical component of achieving the long-term elimination of viral hepatitis. These efforts rely on coordinated interventions at multiple points of care, including HBsAg screening in ANC, treatment for pregnant women with viral threshold or other clinical indication, and timely prophylaxis for infants with hepatitis B birth dose (HepB-BD) within 24 hours of birth and completion of the immunization schedule with third dose of hepatitis B vaccine (HepB3).

Findings

While ANC coverage is reported to be high in Ukraine—with 99% of pregnant women receiving at least one visit—gaps in screening for viral hepatitis have emerged. HIV screening coverage remains strong at around 99%, but HBV testing has declined from roughly 75% before 2020 to about 40% in 2024, and HCV testing is as low as 13%. These reductions were attributed in part to population displacement and registration challenges for internally displaced persons (IDPs). Uneven reporting from facilities may also contribute to the size of the gaps: Data from UPHC's request to the regions (only available for 2024) yielded different ANC coverage rates than the N21 forms: data reported by the regions indicated a 60% coverage rate, 20% higher than the coverage rate indicated by the N-21 forms alone *(4)*.

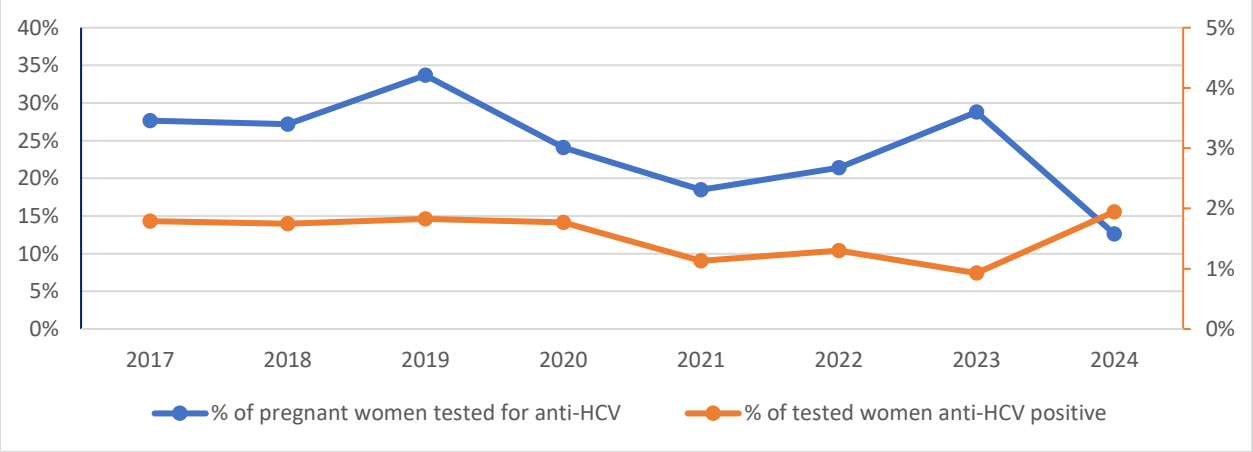
ANC screenings are part of the state-funded package for outpatient pregnancy management. UPHC evidence points to a growing gap in screening coverage, with the gap in ANC anti-HCV screening significantly larger than the HBV gap.

Fig. 10. HBsAg screening and detection rates in ANC, Ukraine, 2017–2024



Source: UPHC (data collected from form N-40)

Fig. 11. Anti-HCV screening and detection rates in ANC, Ukraine, 2017–2024

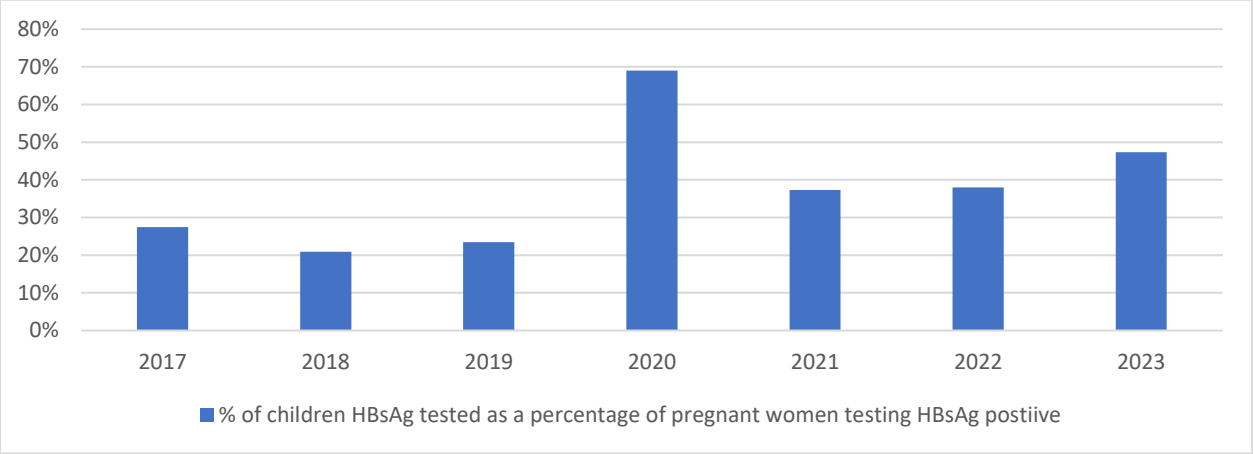


Source: UPHC (data collected from form N-40)

UPHC has limited visibility on the care cascade for HBsAg-positive pregnant women. Only six regions provided information to the UPHC on the number of pregnant women receiving treatment in 2024, reporting that 11 pregnant women were on HBV treatment; only four had provided information in the first half of 2025.

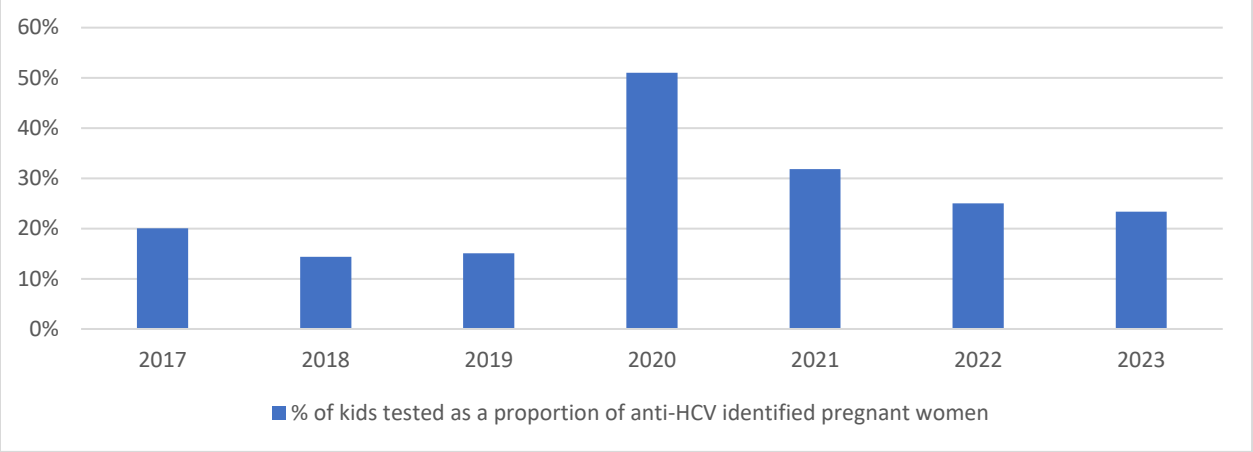
In addition to the gaps in screening in ANC, reported data suggests that follow-up testing for infants exposed or at-risk of exposure to HBV and HCV remains extremely low. Figures 12 and 13 compare the number of positive screening test results in ANC against the number of screening tests carried out among infants. For example, UPHC data from 2023 show that 501 pregnant women tested HBsAg positive, yet only 117 infants were screened for HBV—a follow-up rate of just over 20%.

Fig. 12. Rates of HBsAg follow up testing of infants exposed to HBsAg+ mothers, Ukraine, 2017–2023



Source: UPHC (data collected from form N-40)

Fig. 13. Rates of anti-HCV follow-up testing of infants exposed to anti-HCV-positive mothers, Ukraine, 2017–2023



Source: UPHC (data collected from form N-40)

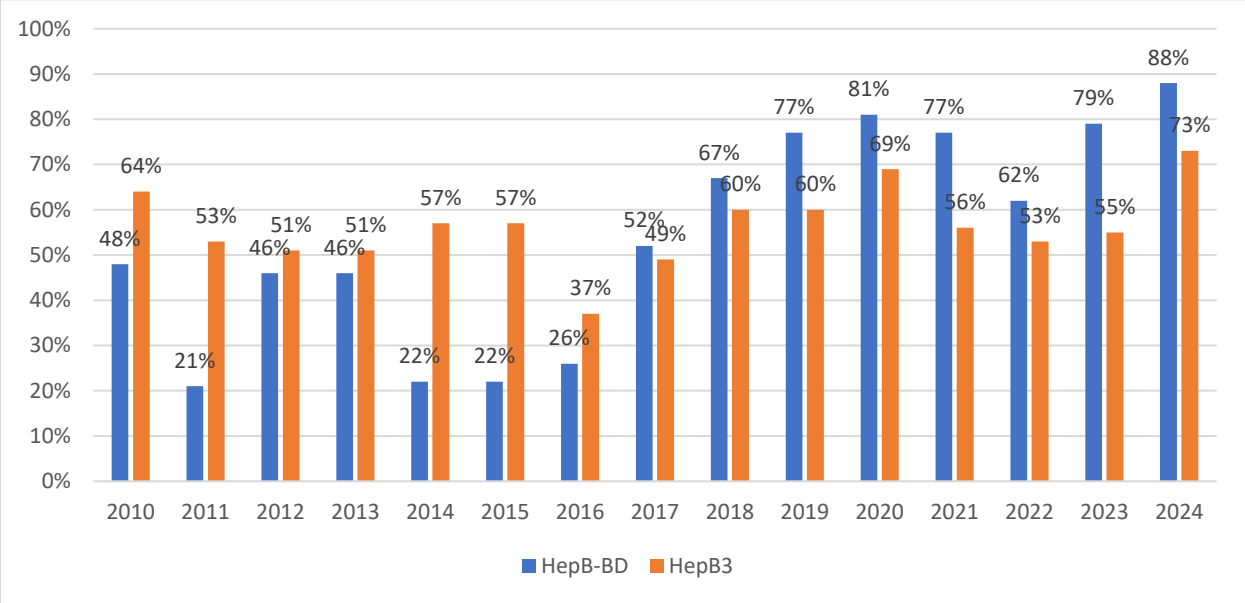
Between 2020 and 2024, only 20 cases of HBV DNA and 24 cases of HCV RNA were confirmed among children.

The low screening coverage among exposed infants reflects broader weaknesses in the flow of information from ANC through to pediatric care and surveillance systems. The lack of an integrated electronic reporting system for tracking HBV among pregnant women and their infants, combined with annual rather than real-time data compilation, limits the capacity of UPHC and regional CDCs to monitor PMTCT outcomes and respond rapidly to service gaps. Of further concern, the gap in screening of potentially exposed infants raises questions about the quality and timeliness of clinical information available at the facility level for the effective implementation of algorithms for targeted birth dose.

HBIG, which can have an important prophylactic effect in preventing the development of chronic hepatitis B, is not available.

In contrast to declining screening rates, Ukraine has made important progress in improving infant immunization against HBV. Since 2002, vaccination against hepatitis B has been included in the National Immunization Calendar for routine vaccination of children from the first day of life. Coverage of the third dose (HepB3) has risen significantly since the mid-2010s, reaching 88% in 2024—the highest level since the mid-2000s. Routine childhood HBV vaccination in Ukraine is currently provided through a pentavalent formulation.

Fig. 14. Estimates of HepB-BD and HepB3 Coverage, Ukraine, 2010–2024 *(4)*



Source: WHO/UNICEF (WUENIC), UPHC

The rate of timely hepatitis B birth dose (within 24 hours after birth) has fallen behind the rate of HepB3. Beginning January 1, 2026, Ukraine will shift from a universal to a targeted birth dose approach, following a recommendation by the National Immunization Technical Advisory Group (NITAG). Under the new policy, infants born to women who test HBsAg-positive or whose status is unknown will be prioritized for the birth dose.

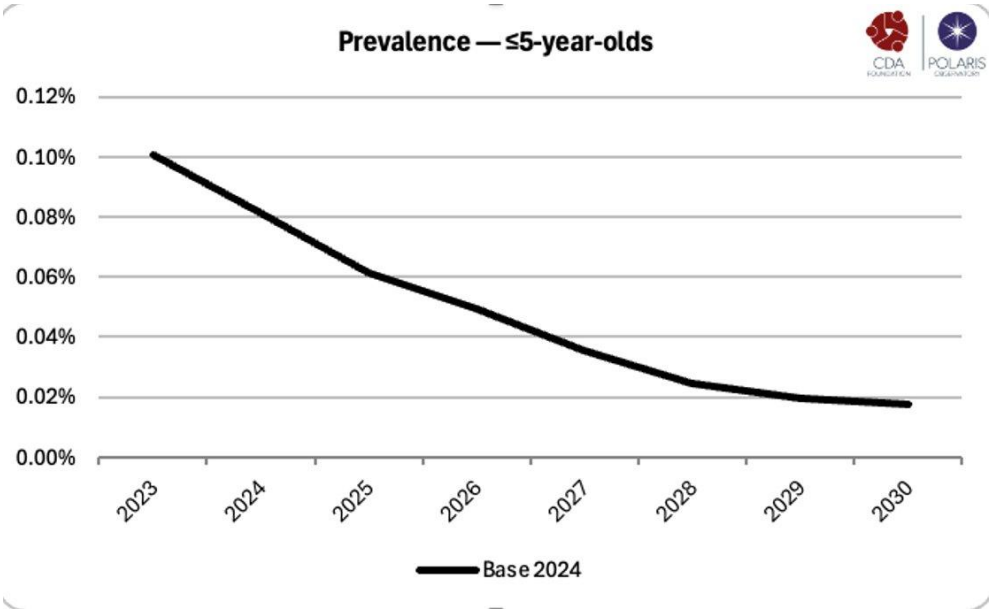
Vaccine hesitancy has long been a major obstacle to reaching high coverage, affecting both birth dose and routine vaccination uptake. In addition to vaccine hesitancy, logistical barriers remain, particularly in conflict-affected areas where cold-chain maintenance and vaccine distribution are more difficult.

Under a targeted approach to birth dose delivery, it is imperative that the tracking of ANC HBV testing coverage (yes or no) and the screening results of an infant's mother (if positive) are available to inform birth dose immunization, as birth dose should be administered to infants of mothers of unknown HBV status or HBsAg+ mothers. Figures 12 and 13 on the screening rates of potentially exposed infants indicates that the flow of clinical information needed to apply birth dose algorithms needs to be evaluated and monitored closely. Moreover, discrepancies in

screening reporting—between N21 forms and the data reported by regions—raises potential concerns for programmatic planning of the implementation of a targeted administration of birth dose.

While noting gaps in HBsAg screening in ANC and uptake of HepB-BD and HepB3, it is important to highlight that the sustained PMTCT efforts have had a very positive impact on HBsAg seroprevalence. According to modelling by CDAF, HBsAg prevalence among children under five was estimated at 0.08% in 2024 and could decline further to 0.02% by 2030 if current HepB3 coverage is maintained. This represents a marked improvement compared to the 2017 national serosurvey, which found an HBsAg prevalence of 0.2% among children born between 2005 and 2015, with notable variation observed across regions *(17)*.

Fig. 15. Estimated HBsAg prevalence in children under 5, Ukraine, 2023–2030



Source: CDAF

Recommendations

- Establishment of a system of prompt collection of information – quarterly exchange of data between the Center and the NHSU on the number of pregnant women, the number of children born, in particular with pathologies on a quarterly basis.
- Develop and implement regional referral routes for HBV-positive pregnant women to receive treatment for HBV.
- Scale up information and educational work among medical workers, women planning pregnancy, women of reproductive age, pregnant women on viral hepatitis issues.
- Reconsider universal HepB-BD, especially for individuals living in or displaced from areas under attack (where service disruption may lead to elevated risk levels)
- Consider availability of centrally-procured hepatitis B immunoglobulin in all regions

- Evaluate the factors contributing to gaps in ANC screening for HBV/HCV and evaluate—as part of an evaluation of the data process / quality used for use in birth dose administration—the role that the process of recording / accessing data on ANC screening plays a role in gaps in screening of infants exposed to viral hepatitis
- Ensure appropriate monitoring of the role of vaccine hesitancy in low coverage rates, including the evaluation of knowledge and attitudes

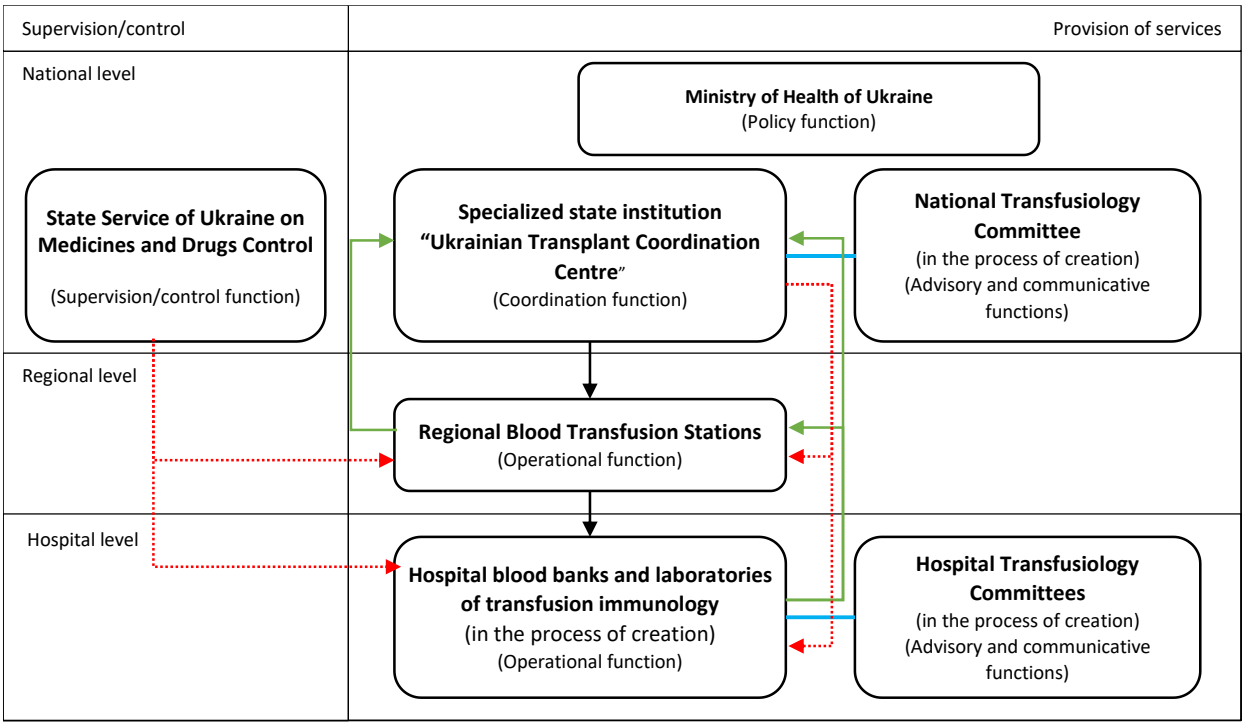
Blood safety

Blood safety is crucial for prevention of transmission not only of viral hepatitis but also of HIV and other bloodborne infections. Coordination of the blood transfusion system in Ukraine is managed by the blood service of Ukraine and the Ministry of Defense – thus significant restrictions are in place regarding operations and data disclosure.

Findings

The blood service of Ukraine is a well-structured and coordinated system that includes national-, regional- and hospital-level coordination units, as well as service provision structures at all three levels (Fig. 16).

Fig. 16. Structure of the blood service of Ukraine



Source: Ukrainian Transplant Coordination Centre.

Overall management of the national blood system, as well as the formation and implementation of related policy and legislation, is the responsibility of the MoH *(18)*.

The Ukrainian Transplant Coordination Centre, as National Transfusion Centre (since September 2021), is responsible for coordinating blood and blood components donation, the operation and management of blood system establishments, circulation of donated blood and blood components, compliance with safety and quality standards of donated blood and blood components, adequate and timely supply of blood components and transfusion services,

coordination of transfusion related activities, and implementation of policies related to blood donation.

The State Service of Ukraine on Medicines and Drugs Control as Competent Authority (since April 2022) is charged with licensing economic activity related to collecting and testing donated blood and blood components, irrespective of their final use; processing, storage, distribution and transfusion of donated blood and blood components destined for transfusion; implementation of public policy on the donation of blood and blood components; and supervision of the blood service of Ukraine and actors involved in the collection, processing, testing, storage, distribution and transfusion of donated blood and blood components in accordance with good practice requirements *(19,20)*.

State policy on blood donation and blood system functioning is determined by the "Law on safety and quality of donor blood and blood components" ***(Помилка! Закладку не визначено.)***. The MoH, with the participation of the National Transfusiology Centre and the National Transfusiology Committee, develops the Strategy for the Development of the National Blood System for five-year periods (or makes changes to the current version). The draft document is approved by order of the Cabinet of Ministers of Ukraine.

Currently, Regional Blood Transfusion Stations are funded by a subvention from the state budget. It is planned that the source of this funding will change, through the Programme of Medical Guarantees, which is a separate state programme financed by the NHSU. The NHSU is the central body of executive authority, which implements state policy in the field of state financial guarantees of medical care.

Since the Competent Authority was created in December 2021, and empowered on 1 April 2022, in accordance with the norms of the "Law on safety and quality of donor blood and blood components" ***(Помилка! Закладку не визначено.)***, and the licensing conditions are under development, no formal audits or inspections of the blood service have been conducted to ensure compliance with national standards and protocols and to meet licensing requirements.

The National Blood System (NBS) is in the process of transforming blood transfusion/transfusiology departments into hospital blood banks (HBB) and establishing hospital laboratories of transfusion immunology and hospital transfusiology committees, as a mandatory requirement for the provision of transfusion services to patients and payment for such services by the NHSU. The process has been fully completed by Kyiv City municipal health service (31 HBB) and Dnipropetrovsk regional health service (43 HBB), and is continuing in other regions within the limitations of wartime conditions.

In 2021, the NBS demonstrated the following major indicators of performance:

- The average number of donors in relation to the general population was 7.5 per 1000 inhabitants.

- On average, 44% of the donor base consisted of first-time donors.
- On average, 95% of donations were voluntary and non-remunerated.
- The number of whole blood collections was on average 12.7 per 1000 inhabitants, and the average use of red blood cells was 6.5 units per 1000 inhabitants.
- On average, 4.3 L of plasma was collected per 1000 inhabitants.
- All donations were tested for HIV antibodies, HBsAg, HCV antibodies and *Treponema pallidum* antibodies.
    - Other indicators are classified under Martial Law.

Current situation in the NBS

- The NBS has 23 blood centres across the regions of Ukraine and in Kyiv city, and 300 HBBs.
- There are two blood plasma fractionation facilities in Ukraine.
- The NBS is coordinated by the State Institution “Ukrainian Transplant Coordination Centre”.
- Between 24 February 2022 and June 2023, the health services of Ukraine, including the blood system have experienced the following losses caused by the war:
    - Health-care infrastructure damage as of June 2023 – US$ 2.8 billion (1.8% of the share of total damages).
    - Health-care infrastructure destruction as of June 2023 – US$ 2.7 billion (1.0% of the share of total losses).
    - In total, at least 1203 health-care facilities have been damaged or destroyed since the start of the full-scale invasion.
    - Three blood centres have been destroyed – amounting to US$ 10 million.
    - Three blood centres have been damaged – amounting to US$ 10 million.
- By October 2023, five blood centres had been destroyed.

Coordination of blood system related activities during the full-scale invasion

- Under martial law, the operational headquarters for coordination of the blood system has wider responsibilities:
    - daily reporting by blood system establishments on available stocks and collection volumes, risk analysis and management decision-making;
    - cooperation with regional administrations, government ministries and departments, the Medical Forces Command of the Armed Forces of Ukraine, and international organizations; and
    - coordination of the needs of the security and defense forces.

Formation and management of blood and blood component stocks at the country level

- Under martial law, the need for blood collection has increased by 40% as a result of conscription and mobilization of candidates for blood donation.

- If necessary, the volume of blood collection by blood system establishments can be increased through scaling up and switching to 24-hour operations.
- There are mechanisms for faster and more simplified redistribution of blood and blood components between blood system establishments. The legislation provides for the possibility of free transfer of blood components between Regional Blood Transfusion Stations, whose production costs are covered by the state budget through subventions and covering the need for consumables through centralized procurement.
- Blood system institutions report daily on available stocks and collection volumes, risk analysis and management decision-making.
- The mission team was informed that all blood products are being tested in accordance with guidance from the European Directorate for the Quality of Medicines & HealthCare *(21)* and the Regional Action Plans *(22**Помилка! Закладку не визначено.**)*, and that quality assurance, trainings and protocols are ongoing, despite the destruction of five blood stations.
- The data on blood samples tested remains anonymized. Samples are categorized by first-time and repeat donors, voluntary and replacement donors, and demographics.

Implementation of new methods of transfusion care since 2022

- Since mid-2022, civilians and military personnel with serious injuries and massive bleeding must first receive a unit of O(I)Rh(-) whole blood, followed by red blood cell units matched to their blood group.
- Since the end of 2022, the use of AB lyophilized plasma has been introduced.
- Changes and additions to the standard of treatment for massive bleeding are being developed.
- New types of blood and blood components are being considered for use:
  - low titer group O whole blood
  - liquid plasma
  - cold stored platelets
  - group A lyophilized plasma as an alternative to single-group lyophilized plasma.

Challenges related to the full-scale invasion

- It is essential to ensure coordinated operation of the blood service and continuous blood supply to the civilian and military health-care systems.
- Effective and timely engagement of the blood donor pool is vital to maintain adequate supply.
- Agile preparation of blood products and effective management of supplies are priorities in maintaining an effective blood supply system.
- New methods of blood transfusion have been implemented, including but not restricted to portable or field-based transfusion technologies and novel transfusion products, and full operationalization is in progress.

- The referral and counter referral for blood donation candidates who test positive for viral hepatitis (and other bloodborne diseases), including those in the military, requires improvement.
- The number of acute infections related to blood and blood product transfusion, before and after the onset of war, needs thorough estimation and complex assessment within the possible ranges to ensure the adequacy of prevention and response interventions.
- The NBS is advancing efforts to fully operationalize human tissue and human milk banks in Ukraine, to be in line with European Union legislation. The NBS welcomes support from WHO, UNICEF, and implementing partners in this initiative. Human tissue banks are critical for supporting reconstructive surgery and rehabilitation, especially for trauma and injury cases; and human milk banks play a vital role in addressing rising rates of premature births and maternal mortality.

Despite the identified challenges, substantial improvements to blood safety have been made in Ukraine – with a centralized control centre and phased implementation of a new information system. The new system is integrated with the national e-health system, and the first phase has been completed. The second phase comprises the alert system for blood transfusion reactions and will be initiated once funding is allocated.

Recommendations

- Conclude the implementation of the new blood service information system.
- Consider a blood safety mission with support from WHO and extend the technical support to the full development and implementation of tissue and human milk banks.
- Use existing and adapted rapid needs assessment tools and methods for continuous improvement of blood safety

Infection prevention and control

Infection prevention and control (IPC) is a cornerstone of public health and an essential strategy for reducing the nosocomial transmission of viral hepatitis. Effective IPC practices protect both patients and health workers from preventable infections. In the context of hepatitis B and C, IPC measures are critical not only within hospitals but also across other settings where bloodborne exposure may occur, including dental services, beauty salons, and tattoo parlors.

Findings

MoH and UPHC jointly lead the national IPC programme, working with other government agencies, health and care workers, NGOs, implementing partners, and WHO. A key milestone was the adoption of a Cabinet of Ministers decree in August 2023 requiring all healthcare facilities to implement the minimum IPC standards aligned with WHO recommendations. Beginning in 2024, compliance with these standards became a mandatory condition for receiving state funding *(24)*. This regulatory shift represents a major advance in institutionalizing IPC practices as a core quality and safety requirement within Ukraine's health system.

The review found that IPC protocols are in place at hospitals, and that designated IPC staff are present in major facilities. Since the start of the full-scale invasion, the MoH and UPHC have implemented extensive training initiatives on safe injection practices, waste disposal, and healthcare waste management. Innovative capacity-building tools have been introduced, including a WHO-developed tabletop simulation for IPC, piloted in Ukraine with funding from the European Union and support from the WHO Regional Office for Europe. These efforts have contributed to sustained engagement of facility staff and supported the integration of IPC into broader emergency preparedness measures.

However, implementation and oversight remain uneven. Interviewees reported that IPC focal points in hospitals often have limited working hours, and regional health officials have limited bandwidth to enforce compliance—especially outside of major hospital settings. Routine monitoring, evaluation, and feedback mechanisms for IPC at smaller facilities—particularly those outside major urban centers—are limited. Furthermore, while IPC protocols formally apply across all health facilities, oversight of private-sector medical practices and non-medical high-risk settings (such as dental clinics, salons, and tattoo parlors) remains weak. These service providers operate largely outside the state's health system and are not consistently included in IPC inspections or training programs.

Nosocomial transmission remains a potential driver of viral hepatitis incidence in Ukraine, but its role is not fully quantified due to the absence of comprehensive data on historical and current transmission routes.

The Regional Action Plan for viral hepatitis prevention sets ambitious goals of achieving 95% safe injections by 2025 and 100% by 2030. However, Ukraine's operational plan does not yet define

national targets or monitoring indicators for injection safety, and there is currently no national framework to assess injection safety in healthcare facilities. Moreover, NSPs—especially those involving exchange services—have faced disruptions in frontline regions since the invasion, increasing potential risk of community transmission through unsafe injection practices.

Routine HBV immunization is a key tool in the effort to reduce HBV-related IPC risks: in Ukraine, individuals born before the introduction of routine hepatitis B vaccination in 2002—and those who missed out on routine or catch-up immunization in subsequent years —constitute a large portion of the adult population and therefore remain susceptible to infection

The immunization of healthcare workers against HBV is an important protective measure under the IPC framework. Responsibility for faciliting that availability of HBV vaccines for non-immunized staff falls on the employing health facility; the military also indicates that it aims to make hepatitis B immunization available to military conscripts, upon individual requests. Monovalent HBV vaccines procured through state budget resources and charitable organizations are intended for use in children only. UPHC data indicate that HBV vaccination coverage among healthcare workers expanded significantly beginning in 2019, but the completion rate for all three doses remained suboptimal and data on HBV immunization coverage across healthcare worker cohorts was not available. The review also noted that while healthcare workers should have access to catch-up immunization, procurement and delivery of monovalent HBV vaccines for adult immunization depend on facilities themselves, as there is no centralized procurement of monovalent HBV vaccines. Hepatitis B immunization of other adult risk groups—including people who inject drugs (PWID)—is not included in NHSU-funded service packages but Is potentially available, albeit primarily on a fee-for-service basis and at the patient's own expense.
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The full-scale invasion has further heightened IPC challenges. Increased injury rates and the expansion of trauma care have raised risks of exposure to bloodborne infections, both for patients and healthcare personnel. While the UPHC and MoH have issued updated IPC guidance and scaled up related training, enforcement capacity is limited by staffing shortages and the diversion of health resources toward emergency response.

Interviews during the review also highlighted persistent gaps in the surveillance of nosocomial infections and in follow-up of acute viral hepatitis cases to identify likely routes of transmission. These limit the understanding of the contribution of healthcare-associated infections to the broader burden of viral hepatitis. In addition, the WHO's 2024 guidelines recommend the consideration of post-exposure prophylaxis following needle-stick or other occupational; the availability of antivirals at health facilities will shape the ability to implement such IPC measures, with any gaps in access leaving some healthcare workers vulnerable after accidental exposure events.

Overall, while Ukraine has made important regulatory and operational progress in building its IPC system—especially through the 2023 decree, the designation of facility focal points, and the rollout of WHO-supported training—implementation remains constrained by limited capacity for monitoring, uneven coverage across facility types, and gaps in adult immunization. Addressing these challenges will be critical for reducing the risk of healthcare-associated transmission of viral hepatitis and for ensuring that the IPC system serves as a foundation for long-term health system resilience.

IPC in the context of military health care was not evaluated in this review.

Recommendations

- Consider an IPC mission with support from WHO and develop capacity-building and retention of IPC specialists
- Improve IPC monitoring, and data collection on adherence to IPC minimum requirements – as conducted by the NHSU, UPHC and MoH
- Enhance authority and assure resources sufficient resources for UPHC and regional to lead efforts for IPC education, implementation and supervision
- Evaluate access to mono-vaccines for military populations, catch up immunization, and protection of HCWs and explore if there are any synergies that could address common barriers; to assure synergies, clarity could be needed on which sector is expected to lead or implement these actions. From the civilian sector perspective, mandates and access to comprehensive data on military personnel are limited, which may have implications for feasibility and coordination.
- Consider the feasibility and resource needs for promotion and evaluation of IPC in private medical and non-medical settings with known transmission risk
- Develop a protocol to assess injection safety in health-care settings, including for injection safety in health facilities operated by the military
- Increase awareness of hepatitis B vaccination among the adult population, especially among workers at increased occupational risk, or the development of municipal vaccination programmes, for example for emergency services and communal workers

Harm reduction

Harm reduction interventions are a critical component of Ukraine's public health response to viral hepatitis, HIV, and substance use. These interventions aim to reduce the health and social harms associated with drug use—particularly those linked to injection practices—while strengthening links to prevention, testing, and treatment services. The inclusion of HIV, OAMT, and viral hepatitis under the coordination of UPHC provides a clear institutional mechanism for an integrated approach to harm reduction.

Findings

Ukraine has made substantial progress in expanding access to OAMT, a cornerstone of harm reduction that directly reduces exposure to bloodborne infections by decreasing injection frequency and promoting safer practices. As of June 2025, 33,029 patients were enrolled in OAMT, representing a 6.9% increase compared with late 2024 *(4)*. This expansion reflects sustained state support for a public health approach to substance use and continued investments in OAMT infrastructure. State facilities play a prominent role in the delivery of OAMT services, complemented by NGO-led outreach that links clients to testing and treatment for viral hepatitis, HIV, and other comorbidities.

OAMT also serves as an important entry point for viral hepatitis services, offering opportunities for routine screening, linkage to care, and treatment initiation. Regional OAMT leads described ongoing efforts to integrate HCV treatment at OAMT sites, supported by UPHC coordination and Global Fund assistance. The integration of viral hepatitis services at OAMT facilities thus represents a key operational strategy for scaling up testing and treatment among PWID—a population estimated to account for at least one quarter of all persons with hepatitis C in Ukraine.

In parallel to the viral hepatitis review, a review of the OAMT program was carried out.

Despite progress in OAMT service volumes, its coverage remains limited relative to need; there have not been any post-Covid-19 or post-2022 estimates of the PWID population in Ukraine, making it difficult to estimate service coverage and service needs. The latest formal estimate comes from 2019, which estimated 300-350,000 PWID.

Full harm reduction coverage requires access to NSPs at scale, with NSP playing a crucial role in preventing transmission of HCV and HIV and in engaging individuals not yet ready for OAMT. The national target for Ukraine is 90% NSP coverage by 2030.

Ukraine has a well-established network of NGO-led NSPs, supported primarily through external funding, which distribute sterile injection equipment and provide health education and referral services.

The review found that while needle and syringe distribution continues in many areas, the exchange component of the programs had suffered disruptions in the earliest phase of the full-

scale invasion, particularly in conflict-affected regions where security risks limit transportation and in-person service delivery. At present, transportation and service delivery conditions have improved in many regions, while significant disruptions persist mainly in specific areas subject to ongoing hostilities (for example, parts of Sumy region). Where present, an imbalance between needle distribution and needle collection can pose both logistical and environmental challenges and increases the potential risk of unsafe reuse.

Harm reduction programs operating in prisons also demonstrate important innovation: as of 2025, needle and syringe exchange was active in four correctional institutions, with plans to expand to one additional site in 2026.

OAMT and NSP strategies collectively form the foundation of a comprehensive harm reduction system. Yet, both pillars have historically been heavily dependent on donor funding. This dependence poses a risk to program sustainability, particularly as funding cycles shift. Ukraine has shown important support for public health approaches to substance abuse; at the same time, the criminalization of drug use in Ukraine can constrain service access by discouraging engagement with harm reduction programs and reducing opportunities for outreach.

The full-scale invasion has also created conditions that heighten vulnerability to substance use, including precarity related to displacement and trauma. Since 2022, there have been substantial improvements in the availability, accessibility, and range of mental health services in Ukraine, driven by the heightened attention to mental health in the context of the war. Addressing these evolving risks and maximizing synergies for integration with viral hepatitis services will require continued flexible programming and close coordination across the UPHC, NGOs, and regional CDCs.

Overall, Ukraine's harm reduction response demonstrates that, among public health actors, there is strong institutional alignment, technical capacity, and integration across HIV, viral hepatitis, and OAMT services. Continued support for this approach will be essential to sustain progress toward hepatitis elimination and the reducing the volume of new HCV infections in Ukraine.

The review did not cover Ukraine's needle and syringe programs in depth. A review of existing NSP services in Ukraine, an evaluation of existing gaps and needs for safe injection among PWID, and an assessment of PWID access to viral hepatitis services could greatly improve visibility on the success of prevention and treatment efforts in PWID communities.

Recommendations

- Sustain and build on efforts to integrate viral hepatitis services into OAMT services
- Sustain and build on efforts to integrate viral hepatitis services into outreach to PWID communities

- Facilitate the collection of SI on viral hepatitis services provided to PWID at ART centers, OAMT centers, as well as on NGO services related to awareness activities, screening, prevention, and referral
- Continue the evaluation and monitoring of distribution and access to safe needle and syringes; the distribution of needles and syringes is already conducted within the framework of the national HIV prevention program, which includes monitoring of these services
- Assess access to viral hepatitis services within PWID communities to strengthen understanding of prevention and treatment outcomes

Awareness and linkage to services

Awareness and effective linkage to care are essential pillars of Ukraine's viral hepatitis response. With nearly one in twenty adults living with hepatitis C and effective antiviral therapies and vaccines long available, raising awareness among policymakers, providers, and the public is critical to sustain momentum toward elimination. At the same time, systematic linkage from diagnosis to treatment—and across the full cascade of care—remains central to achieving real public health impact.

Findings

Awareness of communities and knowledge of healthcare workers related to viral hepatitis services is a major strategic objective of the NS2030. Awareness is a cross-cutting dimension of the public health response to viral hepatitis, and it is a decisive factor in building on recent progress. At a society level, awareness of politicians and the public is an important factor in support of major health objectives At the level of engagement with the health system level, awareness among healthcare providers, communities, and patients about the tools available to prevent, diagnose, and treat viral hepatitis B and C is important. This includes knowing what tools are available where, information about safety and effectiveness, and knowledge of how to access services can be as important as the procurement of the tools themselves.

Recent progress in financial commitment to viral hepatitis and the scale up of viral hepatitis treatment indicates that awareness is expanding. To sustain this momentum, continued investment in awareness is needed. For example, the review indicated that while training initiatives among healthcare workers have improved service delivery in some regions, overall training programs and participation in viral hepatitis courses appear to remain far below the training volumes for HIV, TB, and OAMT programs.

Integration of services has been a central driver of progress in awareness and linkage to care. Viral hepatitis testing and treatment are increasingly connected with existing platforms for HIV, OAMT, mental health, and ANC. These services create opportunities to reach key populations and to link patients to testing, confirmatory diagnosis, and treatment. The recent addition of psychosocial services to the NHSU's program of medical guarantees further strengthens this integration, addressing both mental health needs and social barriers to care.

Digital innovations are playing an expanding role in service awareness and linkage. The UPHC has developed a national mapping of services, which allows patients and providers to identify nearby testing and treatment sites. The Help24 Telehealth platform, managed by APH, provides real-time counselling and linkage support for key populations and people living with HIV. These platforms have proven essential in maintaining service continuity during the full-scale invasion, when mobility and in-person access were disrupted (25).

NGO-led activities on viral hepatitis have primarily focused on prevention, awareness, screening, patient navigation, referral to healthcare facilities, and facilitation of access to confirmatory diagnostics. The Global Fund has provided support to NGO projects for viral hepatitis care cascades among PWID and PLHIV. These projects have been implemented by APH and 100% Life, in coordination with the local health care facilities authorized to deliver diagnostic and treatment services; thye have achieved high linkage and retention rates by providing comprehensive, NGO-supported models of care. One such initiative reached 100% retention in HCV treatment through full integration of testing, confirmatory diagnosis, case management, and treatment initiation. These models demonstrate the feasibility of delivering complete cascades of care among marginalized populations through an approach involving active patient support and community engagement.

The prison system has also become a significant platform for linkage to care. Managed by the MoJ, the system dramatically scaled up HCV screening and treatment in 2025, screening over 27,000 incarcerated persons. Of those screened, 17% tested anti-HCV positive, 45% received confirmatory PCR testing, and more than 1,000 individuals began treatment—a rapid and large-scale implementation reflecting strong institutional coordination *(25)*. The prison program represents one of the most successful examples of decentralized viral hepatitis service delivery and demonstrates that treatment can be effectively scaled even in closed settings.

At present, existing inter-agency algorithms are in place military personnel receive testing for viral hepatitis markers within military units and basic training facilities, and individuals with positive results are referred to the civilian healthcare system for further care. Within this continuum, further clarification may be needed regarding data exchange and reporting arrangements, including delineation of which data are classified or restricted and which may be shared for public health purposes.

Despite these advances, important gaps remain. The blood donor system—managed by the MoD—plays an important role in detecting undiagnosed infections; however, the absence of a structured mechanism to notify and refer donors who test positive represents a missed opportunity for linkage to care. Gaps also persist between liver disease and viral hepatitis services: an attributable fraction study found that 26% of patients with cirrhosis or hepatocellular carcinoma had never been tested for viral hepatitis, underscoring incomplete cascade integration *(9)*. In addition, the mission noted that some OAMT clients who were also internally displaced persons reported never having been tested for HCV, further illustrating the fragmentation of referral and follow-up systems across populations and services.

The full-scale invasion has disrupted referrals, patient travel, and routine service access, particularly in conflict-affected regions. The need for psychosocial support has risen sharply, while many patients face competing survival priorities and may delay care for non-urgent health issues. Facility-level data show major fluctuations in the number of decentralized treatment sites

over time, with a persistent gap between facilities willing to provide services and those with access to RDTs and treatment commodities.

The lack of accessible NAT remains the most critical bottleneck in the HBV/HCV continuum. While laboratory infrastructure exists, limited financing for consumables forces patients to rely on private services, disrupting continuity and reducing oversight. Other missed opportunities for linkage include the absence of notification systems for blood donors who test positive and limited integration between liver disease care and viral hepatitis services. A recent study found that 26% of patients with advanced liver disease had never been tested for viral hepatitis, underscoring gaps in cascade visibility and provider awareness.

Overall, Ukraine has built a foundation for an integrated, community-centered model of awareness and linkage to care, supported by strong NGO engagement, innovative digital tools, and multi-program synergies. To consolidate progress, further efforts are needed to expand confirmatory testing access, strengthen provider training, ensure consistent availability of diagnostics and treatment at decentralized sites, and institutionalize psychosocial support within the care pathway.

Recommendations

- Set up clear referral and counter referral for patients that test positive for viral hepatitis to mitigate loss to follow-up, particularly between serological and confirmatory testing
- Explore the importance of information exchange and further development of civil–military cooperation as integral components of strengthening linkage to care.
- Enhance information systems capacity to improve data capture on testing and linkage to care by transitioning from paper-based and aggregate systems to electronic, person-centered systems.
- Ensure that the recommendation of HBV treatment where monitoring is an obstacle is widely communicated to healthcare workers and communities
- Explore where training can improve continuum and explore legal obstacles to task-shifting

HBV/HCV Screening, Diagnosis, and Laboratory Systems

HBV/HCV screening tests through rapid diagnostic tests (RDTs)

Screening tests are the gateway to the viral hepatitis care continuum. Early identification of infection allows for timely linkage to care, treatment initiation, and prevention of the progression of liver disease. The scaling up of efficient screening strategies —including community outreach and integration with other health programmes for at-risk populations—is the first step for achieving elimination targets; screening can therefore serve as a catalyst or a bottleneck.

Findings

Viral hepatitis screening is integrated into 13 packages of care in Ukraine, meaning it is an eligible service that should be provided free to patients at health clinics. Crucially, implementation of this package of care depends on access to a sufficient volume of RDTs by each health facility to meet its needs.

The cycle of procurement for screening tests works as follows: Healthcare facilities submit procurement requests, the UPHC coordinates financing and financial flows, the MoH acts as the main budget holder, and medical procurement agencies are responsible for the purchasing, delivery, and distribution of tests and medicines to designated regional hospitals.

The UPHC—in collaboration with the Central Procurement Agency—reached an important milestone in 2022 with the centralized procurement of RDTs for viral hepatitis. Centralized procurement should improve the efficiency of spending on RDTs.

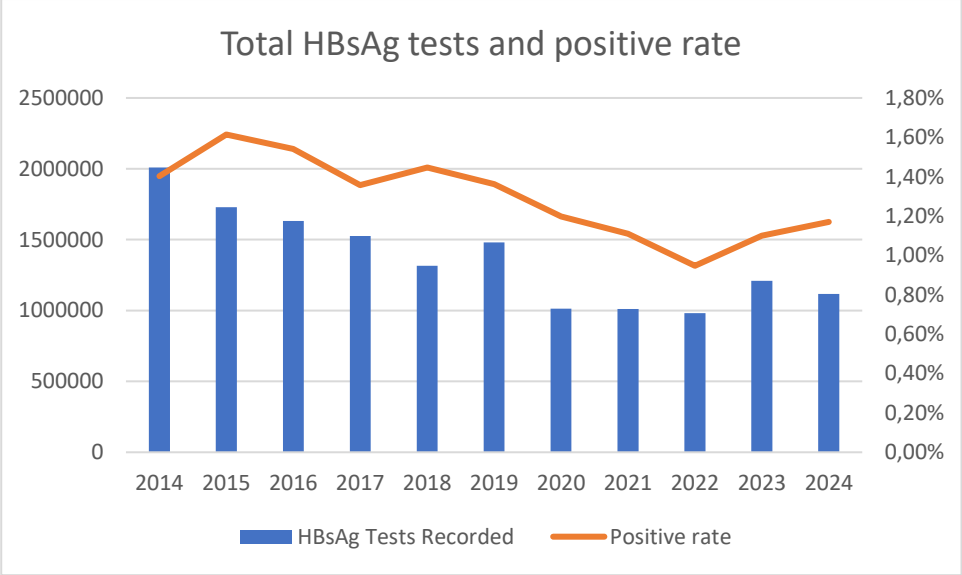
The UPHC website stated that 900 public health facilities are able provide testing for viral hepatitis and more than 1,700 state health centers have articulated the need for viral hepatitis tests. The needs for HBV and HCV screening commodities are calculated directly by healthcare facilities in the regions and aggregated by the health departments of regional state administrations, while the UPHC verifies the consolidated requests. Regional CDCs themselves conduct testing and collect data. Distribution of RDTs within regions is carried out in accordance with orders issued by the relevant regional health authorities.

Historical Screening Volumes, Rates, and Results

UPHC data show a decline in annual screening volumes for both HBV and HCV since the 2010s. The impact of Covid-19 on health services, and the impact of the full-scale invasion on population declines and service disruption, may explain declines in the volume of testing since the start of the strategy.

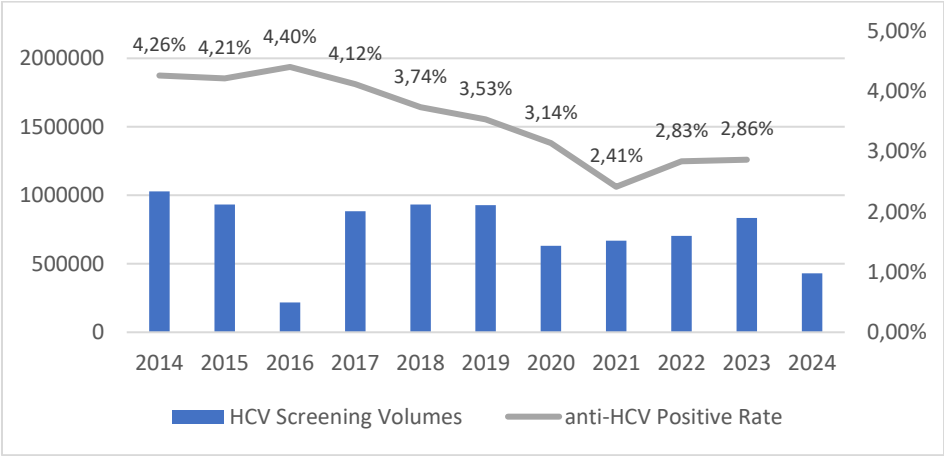
Fig. 17 and Fig. 18 highlight the reported volumes of annual screening tests and rate of positive results. An important caveat to the macro data provided by the UPHC—which is based on reporting from health facilities—is that tests conducted by NGOs are reportedly excluded from official counts; screening tests for HBV and HCV conducted by NGOs in Ukraine are considered preventive screenings rather than medical services.. Volumes and results of screening tests performed at private facilities are also generally excluded (in practice) from the figured reported by the UPHC.

Fig. 17. HBsAg screening volumes and detection rate, Ukraine, 2014–2023 (4)



Source: UPHC Data

Fig. 18. Anti-HCV Screening volumes and detection rate, Ukraine, 2014–2024



Source: UPHC

Data on the number of tests performed were available for 2024, but the number of positive results was not shared during the review.

The UPHC collects data on the distribution of test kits to OAMT, HIV, TB, and ANC programmes. In addition, Form 40-Health includes information on risk groups, testing volumes, and detection of positive results within these groups.

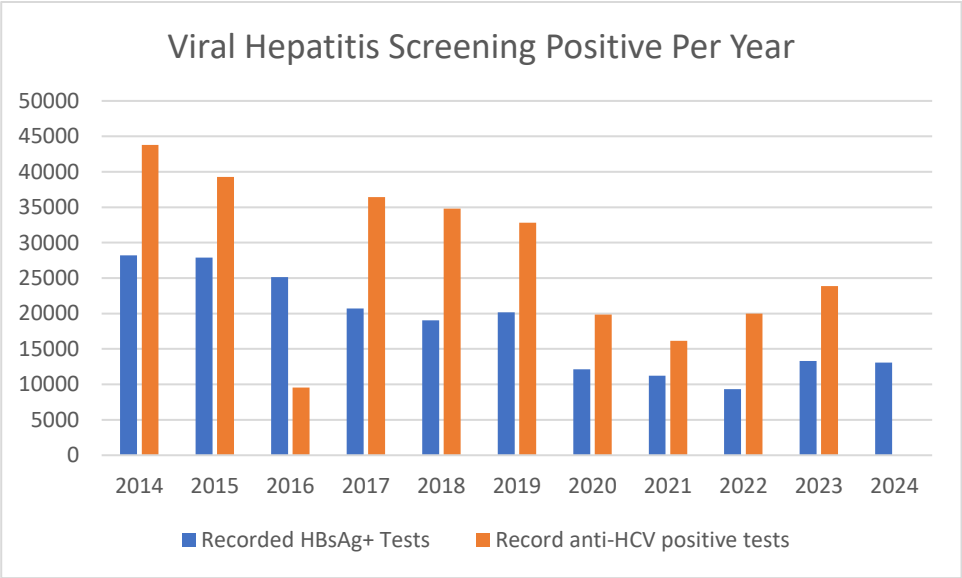
Screening in ANC was the only channel for population-based screening presented in depth during the review. Over the course of 2019-2023, ANC tests declined from 18% of all recorded HBsAg tests to 9%; with ANC contributing 9% of the recorded HBsAg+ positives in 2019 and only 4% in

2023. Large-scale testing of military conscripts for HIV, HBV, and HCV, implemented with support by APH represents a recently expanded channel of testing--with over 100,000 HBsAg tests and anti-HCV tests carried out over the period between 2022 and mid-2025.[†]

The trend of declining testing volumes (and declining positive rate) translated to a decline in the number of annually reported positive screening tests for HBV and HCV. This can be seen in figure 19, highlighting the annual volumes of persons screening positive for HBsAg and anti-HCV. Between, 2014 and 2023, 276,497 anti-HCV positive test results were recorded, among 7,760,467 recorded tests carried out; in that same period, 187,136 persons screened positive for HBV among the 13,909,491 recorded tests taken. These figures should be interpreted with caution, as it is unclear how many of the positive screening tests recorded may include repeat positive screening results from the same individual.

A comparison of the historical volume of positive tests versus treatment volumes indicates that there should be a significant number of "warehouse patients" waiting to complete confirmation testing and/or waiting to access treatment. More recent volumes of annual positive results is also relevant to evaluations of the number of PLHCV who can be matched with the large procurement orders; without warehouse patients, the 45,000 positive results of 2022 and 2023 combined would not yield enough diagnoses to meet the 42,000 courses procured in 2024.

Fig. 19. Annual volumes of persons screening positive for HBsAg and anti-HCV



The review highlighted that UPHC are not able to identify what percentage of these reported test results are repeat positives versus first-time positive. Interviewees acknowledged that questions over the data quality persist, with uncertainty over the inclusion of repeat positives and

[†] Alliance for Public Health. (Presentation). 2025.

unverified negatives in the data reported to UPHC. Finally, there does not appear to be solid visibility on the proportion of tests that are a first screening or repeat screening.

In other words, there are major issues with data clarity and data completeness, as private-sector screening data and NGO data are not consistently included in nationally consolidated data.

HBV and HCV Screening in the Context of Volumes, Targets, and Procurement

Of note, the anti-HCV screening volumes are consistently lower than HBV screening volumes, despite the fact that population HCV prevalence is 3-4 times higher and that HCV positive screening rates are consistently 3x higher than HBsAg+ screening rates. While testing of HBsAg+ has long outnumbered anti-HCV volumes, the targets of the national operational plan aim to reverse the ratio, with 2024-2026 targets of 800K HBsAg+ tests (well below current levels) and 1.5 million (2024) / 2.2 million (2025 and 2026) anti-HCV tests (well above the current volumes).

Procurement data shared during the review indicates there should be supply to scale up screening volumes in 2025 and 2026. Notably, HBV and HCV test procurement grew fivef-fold in 2025 between 2024, from 862,310 to 4,336,491 tests—or 2,191,773 HBV rapid tests and 2,144,718 HCV rapid tests. This supply is sufficient to meet the 2025 screening targets, while the 2026 targets are expected to be covered through procurement under the 2026 budget cycle. The current procurement order—based on consultations with 1,582 healthcare facilities—should cover national needs for the next 12–18 months. The 2025 HBV RDT procurement order of 2.91 million is nearly enough to cover nearly two years of testing at its annual target levels of 800K tests per year; the 2025 HCV RDT procurement volume of 2.14 million tests is enough to cover the 2024 testing target, but it remains well below the volume needed for 2025 and 2026 targets of 2.2 million per year.

Fig. 20. HBV Screening in Context

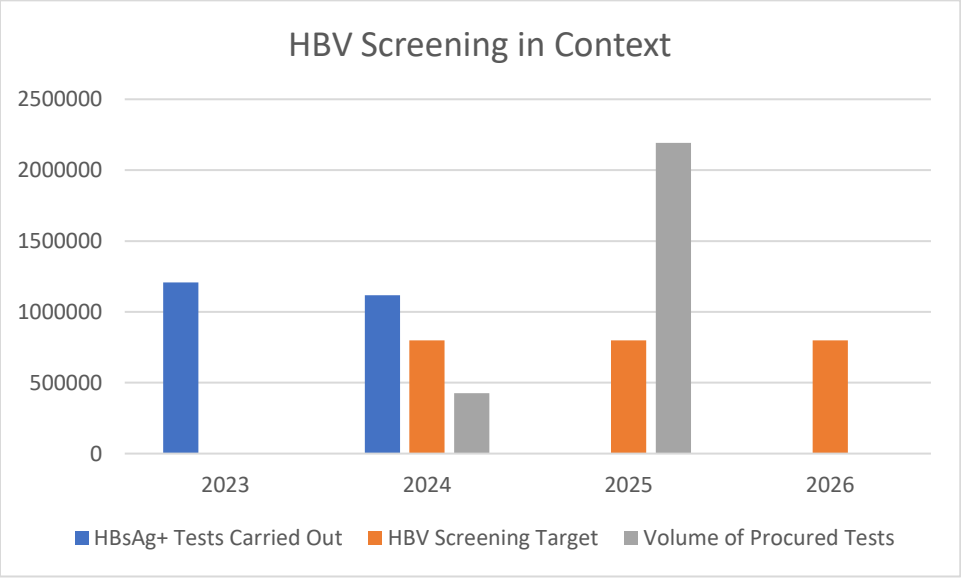
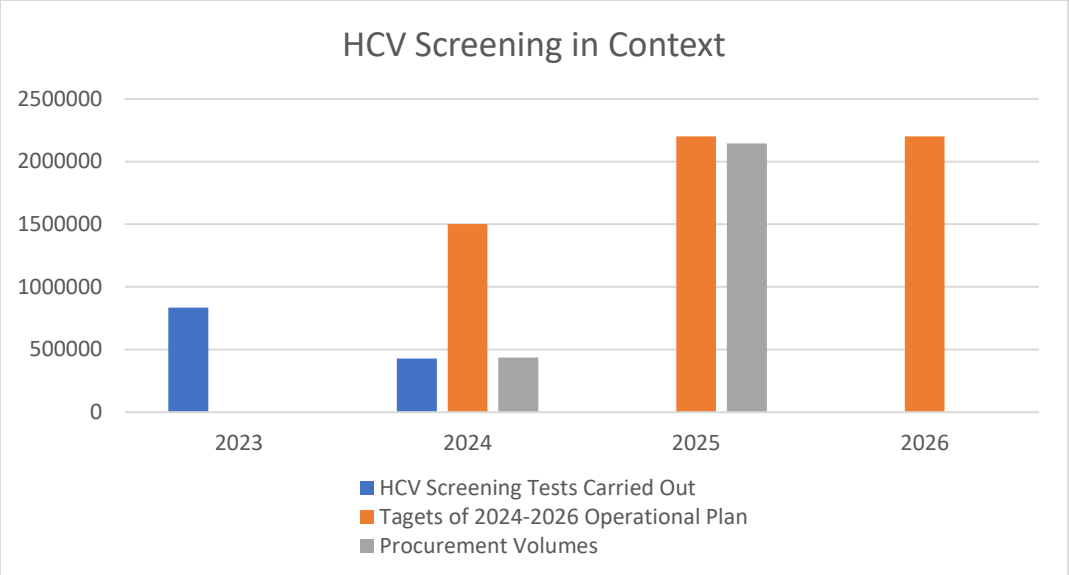


Fig. 21. HCV Screening in Context



The review did not identify evidence of routine specific training on the administration of viral hepatitis RDTs nor of External Quality assessment (EQA) on viral hepatitis RDTs.

Recommendations

- Consider establishment of a dedicated screening information system, analogous to the treatment component of the viral hepatitis information system, but specifically focused on screening. Such a system could enable person-level data capture and reduce duplication, thereby strengthening data quality and strategic use.
- Ensure that test results on a patient can be accessed by patients/health and care workers (HCWs) across health facilities (in order to avoid duplication)
- Set up clear referral and counter referral for patients that test positive for viral hepatitis to mitigate loss to follow-up, particularly between serological and confirmatory testing. Referral and counter referral can be assisted with standardized treatment and care pathways, information systems and alerts, and sensitization of staff on viral hepatitis and the importance of follow-up to patients
- Improvement visibility of screenings sites and information to clients
- Centralize data of screening tests performed and rate of positivity and implement a database to record and analyze data
- Explore a training program on RDTs, including biosafety recommendations for HCW. Training program can be on-line and can be shared with training on HIV RDTs.
- An EQA National program on RDTs is desirable, that can be combined with the HIV EQA program already in place.

Diagnosis and laboratory system

Molecular testing is a key step in the continuum of care for HBV and HCV. It is also a major cost and logistical consideration for viral hepatitis responses. Pre-treatment HCV RNA confirmation testing and post-treatment sustained virological response (SVR) testing are essential steps of the HCV continuum of care. Monitoring of HBV viral load is recommended as a key tool for monitoring the timing of treatment initiation for chronic HBV and for monitoring of treatment efficacy. The review confirmed that access to nucleic acid testing is a major barrier to the scale up of HBV and HCV treatment, as many patients with positive screening results are not able to continue with the testing algorithm, missing opportunities for timely diagnosis and treatment. Enabling broader access to laboratory services for viral hepatitis is therefore an essential dimension of improving the cascade of care at scale.

Findings

Previous assessments had already indicated the challenges in accessing diagnosis for viral hepatitis in the country. This review found that many of the leading challenges remain.

The MoH is the budget holder under the State Budget; expenditures on consumables for confirmatory diagnostics cannot be procured from the State Budget in the absence of specific positions in the national nomenclature for medicines and medical consumables for HBV/HCV diagnostics and treatment. The UPHC does not have a dedicated budget for procurement of these consumables outside of donor-supported opportunities. Moreover, molecular testing for viral hepatitis is not included in the packages of care reimbursed by the NHS (except for in inpatient settings, and even then, it is not mandatory). PCR diagnostics for viral hepatitis are included within at least one NHSU package; however, the funding level envisaged under that package is substantially lower than the actual costs of consumables and the operational needs of laboratories. Moreover, there is no centralized procurement of laboratory consumables for viral hepatitis.

In addition to the lack of a budget for viral hepatitis laboratory services, there is a lack of national/regional visibility on the volumes and results of nucleic acid testing for viral hepatitis across the public and private sectors. This means that the UPHC does not have visibility on the number of people who are stuck at the HCV diagnosis stage (i.e. whether pre-confirmation testing or post-confirmation of viremia) or what number of patients have dropped out of the pre-treatment monitoring phase for HBV.

Interviewees made frequent reference to HCV confirmation testing barriers and HBV treatment needs but there was less attention allocated to discussion of HBV viral load barriers. Regular monitoring of HBV viral load also appears to be a major barrier; In practice, quantitative HBV testing is substantially more expensive than qualitative HCV testing, with the cost difference

approximately on the order of one-third (i.e., HBV quantitative costs exceed HCV qualitative costs by roughly 30%).

At present, private laboratories provide most of the capacity for the critical diagnosis stage in the cascade of care. Patients who access private laboratories must pay for testing services at their own expense. A handful of companies play a major role in the landscape of Ukraine's private medical laboratories. Leading companies include Synevo, Dila, CSD Laboratory, SMARTLAB and EUROLAB. These companies have a national footprint, and several have an important presence in neighboring countries. Although these laboratories are legally required to report testing volumes and results, the review indicated that they are not doing so in practice. The small number would seemingly make enforcement of this more straightforward; it would also make it easier to introduce requests for information at the interface of sample collection. For many who have screened positive for anti-HCV or HBsAg, the private sector prices for follow on nucleic acid testing appears to deter a large number of patients from accessing this key step in the continuum of care.

While the national hepatitis response has relied primarily on private laboratory services to date for this key dimension of the cascade, the UPHC and regional CDCs have engaged in recent and ongoing pilot initiatives that indicate encouraging momentum and highlight possible paths forward to expanding availability of laboratory services via state health facilities. Pilot projects have demonstrated the feasibility of leveraging the state laboratory capacity used for HIV and TB for viral hepatitis laboratory services. Recent steps toward the quantification of regional needs for laboratory services, as well as the planning of a network of pathways for sample delivery, are further positive steps.

The Global Fund provided funds for a pilot project on diagnosis of viral hepatitis among PWID and PLHIV. The funds were allocated to the UPHC as the financial manager; the Alliance for Public Health supported logistics. The procurement and deployment involved provision of GeneXpert devices and cartridges to 24 regional CDC public laboratories. The UPHC, together with regional health departments, developed sample collection and transport routes, notified health-care providers about the pilot launch, and provided methodological and technical support to regional CDC laboratories. The Global Fund provided funds to Alliance for Public Health to procure 17,500 GeneXpert kits; the Alliance for Public Health subsequently worked with regional state laboratories to carry out confirmation to leverage their GeneXpert capacity for confirmation testing and SVR testing. APH's support has involved follow up with anti-HCV positive patients for taking a blood sample, sample transport, and provision of cartridges to 25 regional CDC laboratories. The populations targeted for diagnosis support were key populations, including PLHIV, people who inject drugs, and prisoners.

An algorithm for delivering blood samples and coordinating work at the national and regional levels has been developed. The UPHC produced national-level guidance, and the UPHC supported regional health departments and regional CDCs in adapting and operationalizing algorithms at

oblast level. A Central Clinical Hospital Network has been developed with the aim of connect regional labs to more than 250 health centres; this network involves sample referral from some 250 regional health-care facilities of various profiles (HIV, TB, OAMT, primary care, surgery, military hospitals, etc.) to regional CDC laboratories, rather than to central referral hospitals per se. The GFATM support of viral hepatitis diagnosis showed the feasibility of leveraging this state laboratory network. UPHC has consulted regional CDCs to generate an estimation of needs for PCR testing by region. These estimates are generally based in line with the volumes of annual positive screening test results by region.

It is important to highlight that the flow of newly identified positive cases each year is easier to quantify than the total warehouse population of individuals who previously screened positive and have not yet proceeded to diagnosis.

The review indicates that Ukraine has the institutional infrastructure, experience, and expertise to be able to replicate key aspects of the HIV viral load testing approach for viral hepatitis nucleic acid testing—but that the lack of specific funding for viral hepatitis laboratory services / management is the major barrier to capitalize on these synergies. Key funding priorities of an expanded budget on laboratory services would include the procurement of laboratory consumables, support for sample transport networks, and support to create/sustain a national reference laboratory for viral hepatitis.

In contrast to Ukraine's reliance on private laboratory services for viral hepatitis, molecular testing for HIV (and TB) is carried out via the extensive public network of regional labs. The following table highlights key dimensions and key differences in Ukraine's respective viral hepatitis and HIV laboratory systems.

Box 1. Comparison of HVB/HCV versus HIV laboratory systems for nucleic acid testing

Dimension	**Viral Hepatitis Laboratory Response**	**HIV Laboratory Response**
Governance	Limited central role by regional or national levels to date	Organized at National level
Procurement	Not carried out at centralized level for laboratory consumables (e.g. GeneXpert® cartridges)	Centralized with support from external funders
National recommendations for selection of tests manufacturers	No	Yes (according to National requirements of quality standards)
Equipment	GeneXpert® machines in wide use at regional CDC state laboratories	
Performed at	The vast majority of viral hepatitis nucleic tests are performed by private laboratories; the regional state laboratories carried out testing using lab consumables financed by the GFATM	Performed by health institutions with government funds and donor funds at the regional laboratories

Funding	Not free of charge for patients There has not been sustained external support for viral hepatitis consumables (GFATM support made possible, according to available operational figures, that some 3,250 individuals underwent HBV DNA testing and about 11,400 underwent HCV RNA testing within related activities) Lab consumables for viral hepatitis are not on the relevant lists required for centralized procurement; NHSU does reimburse laboratory testing for viral hepatitis via limited pathways, bu the reimbursement rate is below the costs of the tests In short: testing is included in benefit packages in principle, but lack of centrally procured consumables and underfinancing at the package level lead to limited free diagnostics in practice.	Free of charge for patients, thanks in part to domestic and external support
Follow-up PCR after/during treatment	In general, only available at the patient's expense and performed by private centres. In some instances, blood samples for follow-up testing were routed back to regional CDC laboratories for analysis when capacities and cartridges were available. HBV monitoring schedules are defined in national standards; the practical limitation is access and financing rather than absence of guidance.	Available free of charge Need to improve frequency to early detect resistance
Training	No	Yes (provided by National Reference Laboratory)
	Regarding GeneXpert, Cepheid specialists provided technical training on GeneXpert operation and cartridge handling, while the UPHC carried out methodological training on reporting, error detection, technical failure identification and conducted ongoing organizational and methodological support for regional CDC laboratories.	
External Quality assessment (EQA)	No	Yes (provided by National Reference Laboratory). National and International

		EQA program for screening and nucleic acid testing.
National data of total testing	No	Yes

The review's interviews with the HIV National reference laboratory lead and university researchers also found the following additional aspects of the HIV laboratory response: a mapping of HIV treatment facilities; the provision of resistance mutations analysis for HIV; the development of electronic tools for HIV monitoring in progress; the promotion of HIV serology by instrumental methods; the provision/verification of testing algorithms for HIV; laboratory accreditation; strong coordination and support between national reference laboratory and regional laboratories.

The review indicated that the MoH was making significant strides in enhancing the public health infrastructure with objective on reaching public health laboratories accreditation in accordance with the International Organization for Standardization (ISO), including for high-quality viral hepatitis testing.

This comprehensive overview of the HIV laboratory response is highlighted here because the HIV reference lab and the HIV laboratory system provide a blueprint for a strengthened approach to laboratory services for viral hepatitis, it could also offer important synergies in the building and operation of a national reference lab and improved laboratory system for viral hepatitis.

Recommendations

- Create a national reference laboratory for viral hepatitis (see more below)
- Empower existing Regional CDCs to coordinate / enforce the reporting of laboratory. In regions not covered, regional CDCs should be encouraged, for viral hepatitis PCR tests support.
- Continue to leverage any excess capacity at regional labs when consumables are available (i.e., GeneXpert® machines)
- National recommendations on test manufacturers are recommended.
- A training program on PCR is desirable. Training program can be on-line, but better on site and can be shared with HIV PCRs program
- An EQA National program on PCR is desirable, including public and private centres. It can also be combined with the HIV EQA program already in place.
- Ensure that private labs are reporting on the volumes of HBV and HCV testing that they are carrying out and reporting results, considering adding further reporting requirements for molecular testing (e.g., referring health facility, age, sex)
- Testing volumes / results data would be desirable to be regional and national centralized joining data from public and private labs within their oblasts

The creation of a national reference laboratory for viral hepatitis is one of the review's primary recommendations. A national reference laboratory should support regional laboratories in at least the following aspects:

- Provide training for HBV/HCV nucleic acid testing, including biosafety recommendations for HCW
- Provide external control programs for HBV/HCV screening tests and nucleic acid testing
- Provide additional molecular characterization tests in case of treatment failures (genotyping, resistance mutation analysis, follow up of patients with treatment failure)
- Follow up at the national level of the yearly needs of screening and confirmatory tests
- Follow up of the positivity rate of HBV/HCV screening should be carried out and reported separately at national and regional levels to allow for oblast-specific epidemiological interpretation.
- Establishing algorithms for the follow up and treatment of HBV chronically infected patients ; laboratory services should be aligned to support these algorithms (i.e., defined testing schedules, sample transport, and financing).
- Follow up of patients failing to HCV treatment and study of resistance mutations requires close interaction between clinical services and laboratories; a jointly developed operational algorithm is needed to ensure patients are not lost to follow-up and that specimens for genotyping/resistance testing are collected and processed in a timely manner.
- Provide viral characterization at the molecular level (i.e., genotype, resistance mutations)
- Coordinate network of regional labs
- Provide accreditation activities in screening and confirmatory tests.

Treatment and care

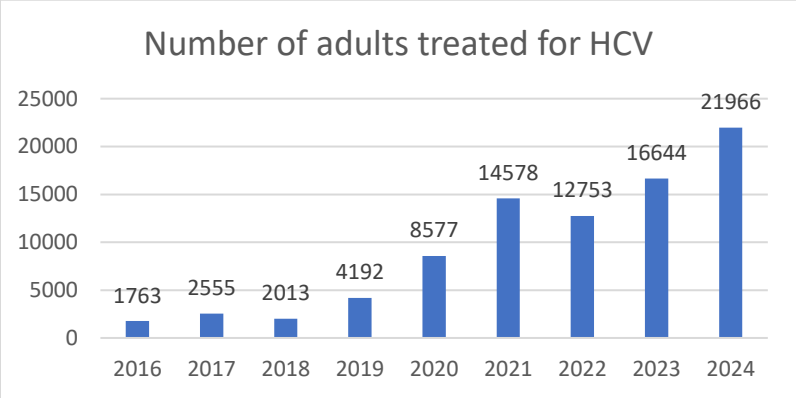
Comprehensive treatment and care for viral hepatitis are central to reducing liver-related morbidity and mortality by achieving sustained viral clearance in persons infected with HCV and long-term viral suppression in persons living with hepatitis B. The expansion of access to highly effective and affordable antivirals—enabled by the availability of generic medicines—has been a cornerstone of Ukraine's progress under the NS2030. Despite significant challenges posed by the full-scale invasion, treatment volumes for both HBV and HCV have risen dramatically, reflecting the MoH and UPHC sustained commitment to the elimination agenda.

Findings

HCV Treatment and Care

The decentralization of HCV treatment has dramatically expanded access to direct-acting antivirals (DAAs). The number of treatment sites has increased from 18 in 2020 to nearly 300 in 2024, facilitating a rise in annual treatment numbers from 8,577 in 2020 to 21,966 in 2024. Over the first five years of the decade, 74,518 persons received treatment. Generic sofosbuvir/velpatasvir is the current standard regimen, while sofosbuvir/daclatasvir is procured under Global Fund–supported projects targeting key populations and prisoners.

Fig. 23. Number of adults and children treated for HCV

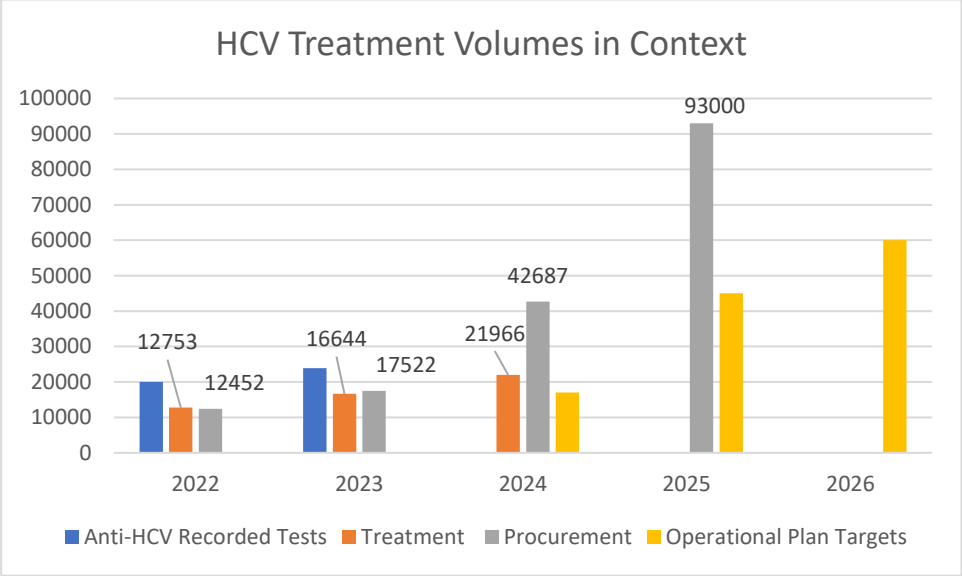


Source: UPHC

Procurement orders for 42,000 treatment courses in 2024 and 93,000 in 2025 provide sufficient stock to maintain or expand treatment coverage over the next program cycle. In the absence of a national registry, it is difficult to assess the proportion of treatment volumes driven by previously diagnosed "warehouse" patients awaiting therapy. It is therefore unclear what share of HCV treatments will be driven by the flow of recently diagnosed patients or the warehouse of patients diagnosed in previous years. Of note on this point, 2024 marked the first year that Ukraine's treatment volumes reached the running average volume of annual positive screening

tests—meaning annual treatment volumes may soon outpace the volume of annual positive anti-HCV tests.

Fig. 24. HCV treatment volumes versus recorded anti-HCV-positive tests, treatment targets, and treatment targets



Source: UPHC

HBV Treatment and Care

HBV treatment follows a distinct clinical logic from HCV management, as only a subset of persons with viremia meet eligibility criteria for antiviral therapy, and treatment is lifelong. The number of people with hepatitis B on treatment has grown steadily, from 1,473 in 2020 to 4,926 in 2024. The total 5,291 people with hepatitis B currently on therapy represent 1.6% of the estimated 316,000 population.

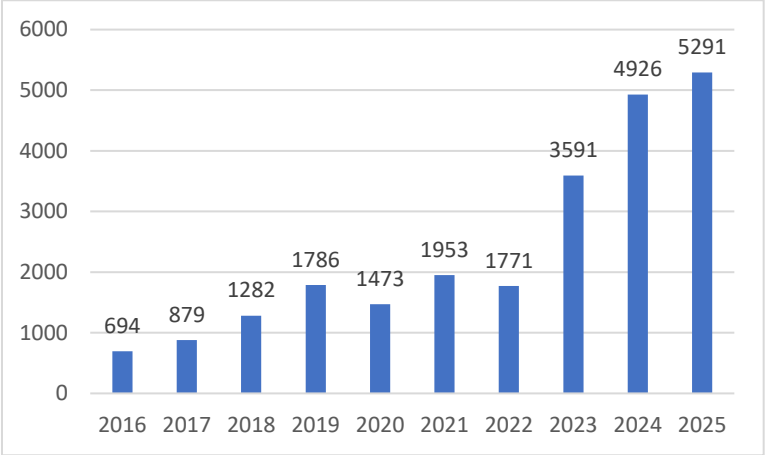
HBV-HIV co-infected individuals on ARV regimens including tenofovir are effectively on HBV treatment. In practice, reporting on patients co-infected with HIV and HBV is formally included in HBV treatment reporting, but data remain incomplete because not all regions consistently report on co-infected patients.

Generic tenofovir disoproxil fumarate (TDF) accounts for approximately 80% of HBV regimens, with entecavir used for the remaining 20%. The 2025 national procurement—the largest to date—is expected to alleviate short-term shortages. However, interviews with regional leads highlighted significant waiting lists: Lviv reported 300 patients awaiting HBV treatment, and Kharkiv reported similar unmet demand. The UPHC estimates that half of HBV patients were at risk of treatment interruption in 2024, emphasizing the need for reliable annual procurement and improved monitoring systems. Donor-supported systemic assistance could help mitigate

these risks, especially in the context of co-infected patients and donor support of medicine procurement of regimens including tenofovir .

The absence of a national registry of PLHBV under care, and the limited availability of viral load testing, hinder effective clinical management. In this context, two recent WHO recommendations are important to point out: first, the recommendation that it is possible to initiate antiviral therapy in patients unable to access regular monitoring is particularly relevant; second, WHO guidance noting that, in settings with sufficient stocks of TDF/FTC for PrEP, these medicines may be used to cover HBV treatment needs where appropriate.

Fig. 25. Number of adults and children treated for HBV*



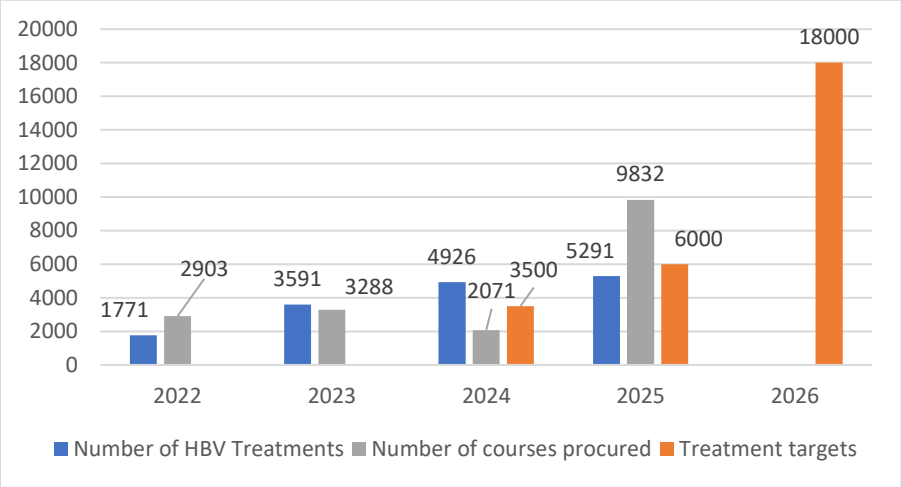
Source: UPHC

*Figure does NOT include PLHIV with HBV coinfection on ART.

Despite increases in volumes over recent years, significant waiting lines have been reported. Lviv noted that there were 300 patients who are waiting for hepatitis B treatment; Kharkiv noted they are treating 20 at their hospital but they need a supply to treat 300.

Insufficient treatment volumes for people with hepatitis B were a major concern highlighted during the review. The recent scale-up and the substantial increase in HBV procurement planned for 2025 shows that the UPHC is working to alleviate current waiting lists; in turn, this progress also underscores that the UPHC will face the challenge of sustaining procurement levels to ensure uninterrupted treatment for those already initiated.

Fig. 26. Hepatitis B treatment volumes versus treatment targets, and treatment targets



Source: UPHC

Pediatric treatment for hepatitis B and C

Treatment numbers for children have varied widely from year to year, with access to treatment for children remaining a persistent challenge.

Of further note, several relevant developments have occurred since the most recent WHO report:

1. According to updated WHO guidance, children aged 12 years and older can now receive treatment with generic formulations, as per adult protocols. These changes have been communicated to regional specialists and disseminated to pediatric infectious disease physicians, with methodological and technical support provided for individual cases.

2. For children under 12 years, either reduced-dose Sof/Vel or Maviret should be procured. Maviret has been submitted in 2025 for inclusion in the national list of medicines purchased with state funds, enabling competitive procurement and selection of suppliers offering lower prices.

3. At the national level, the Center, together with Medical Procurement of Ukraine and patient communities, is engaging with Gilead and Mylan to initiate production of generic pediatric formulations.

4. The need for children under 12 has been met in 2025 through humanitarian supplies, with approximately 10 requests received from donors, and negotiations with Italy ongoing for partial delivery in 2026.

The absence of generic formulations of DAAs suitable for young children leaves the country reliant on supply of the branded originator DAAs. Small humanitarian donations of originator drugs have helped; Available information indicates that 25 courses of the 200 mg/50 mg formulation and 7 courses of the 150 mg/37.5 mg formulation were received, totaling 32 pediatric treatment courses. In addition, as of December 2025, new pediatric HCV cases

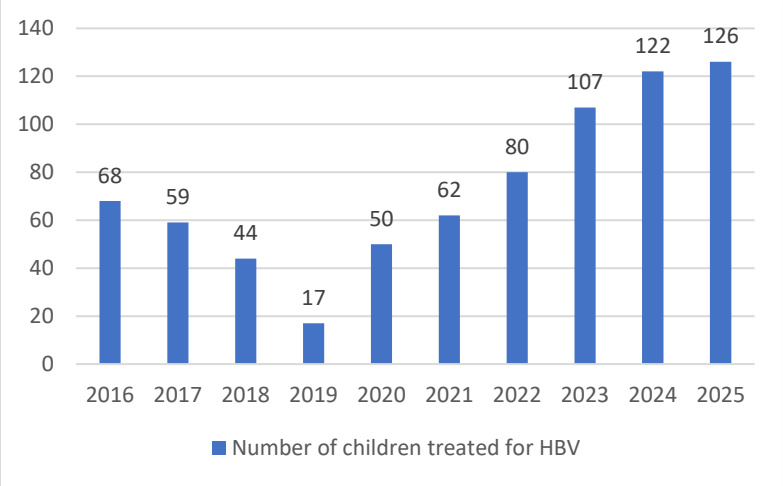
continued to be identified, including two children under six years of age, and one additional child awaiting diagnostic confirmation, with an interim PCR at 1.5 years already detecting HCV RNA.

Updated national standards for HBV and HCV treatment in children were adopted in July 2025. These standards introduce tenofovir alafenamide (TAF) for children with HBV and allow the use of glecaprevir and sofosbuvir/velpatasvir 150 mg/37.5 mg for children with HCV. Importantly, this creates opportunities for market competition among manufacturers and the selection of more economically favorable procurement options for the country.

UPHC estimates that meeting the pediatric treatment for hepatitis C need could consume up to 36% of the entire viral hepatitis treatment budget, underscoring the urgency and difficulty of maintaining a sustainable supply strategy.

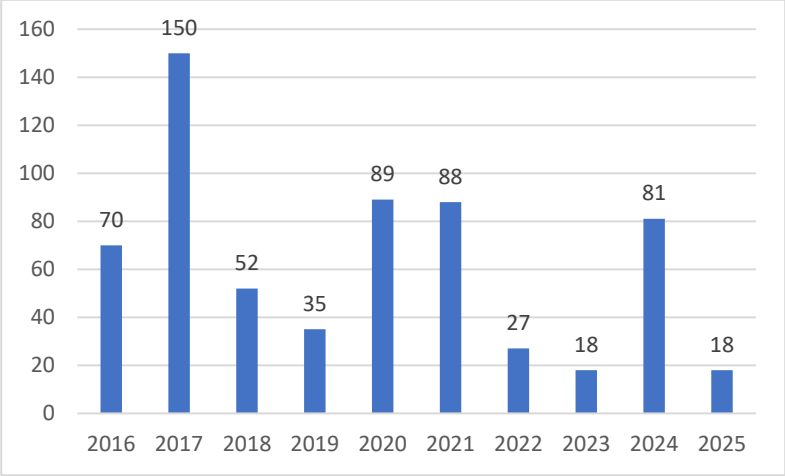
Reported data indicates steady annual expansion of the volumes of children treated for HBV since 2019 (figure 27a).

Fig. 27a. Treatment for hepatitis B in children, Ukraine, 2016–2025



Source: UPHC

Fig. 27b. Treatment for hepatitis C in children, Ukraine, 2016–2025*



Source: UPHC

*Data for 2025 are presented as of 01.09.2025, by 01.11.2025 an additional 30 children – aged 12 years and older – had completed HCV treatment using generic sofosbuvir/velpatasvir 400 mg/100 mg regimens.

The number of children treated for HCV (figure 27b) has fluctuated significantly across recent years.

Recommendations

- Evaluate the implementation of the WHO's conditional recommendations for HBV treatment initiation based on persistently abnormal ALT levels alone where HBV viral load monitoring is not feasible (from 2015 and 2024 WHO recommendations)
- Consider the feasibility of implementing WHO's updated recommendations that surplus TDF/FTC PrEP supply can be used for HBV treatment
- Consider the feasibility of a national registry for monitoring the volume of warehouse patients awaiting HBV/HCV antivirals
- With support from WHO, Ukraine should be included in any roundtable with international specialists on pediatric treatment of hepatitis C focused on
    - Address concerns regarding access to sufficient volumes of affortable treatment of viral hepatitis for children and adolescents to ensure sustainability of pediatric drug supply, including exploration of transition away from originator-only regimens if / once generics become available
    - Sharing national experience with updated pediatric standards, the successful use of generics in adolescents aged 12-18 years, reduced reliance on originator medicines, and elimination of the practice of delaying treatment until adulthood

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