World Health Organization

European Region

Review of the National Tuberculosis Programme Ukraine

August – November 2025

Abstract

This report presents the findings of the Review of the National Tuberculosis Programme (NTP) in Ukraine conducted between August and November 2025. The Review was undertaken in an exceptional operational context shaped by the ongoing war, large-scale population displacement, damage to health infrastructure and sustained pressure on human and financial resources. Despite these challenges, Ukraine has demonstrated notable resilience in maintaining continuity of essential tuberculosis (TB) services and advancing key reforms aligned with the WHO End TB Strategy and Universal Health Coverage (UHC).

The Review assessed progress across the full TB care continuum, including prevention, systematic screening, diagnosis, treatment of drug-susceptible and drug-resistant TB, TB/HIV services, childhood TB, infection prevention and control, people-centered care, community engagement, governance, financing, pharmaceutical management, data systems and research. Particular attention was given to the scale-up of WHO-recommended innovations, including rapid molecular diagnostics, digital radiography with computer-aided detection, all-oral short treatment regimens, and decentralized, ambulatory models of care.

The Review confirms substantial improvements in treatment outcomes, especially for rifampicin-resistant and pre-extensively drug-resistant TB, and highlights Ukraine's leadership in the early adoption of WHO recommendations. At the same time, it identifies persistent challenges, including late diagnosis, TB-related mortality, gaps in preventive treatment coverage, human-resource constraints, and reliance on external funding for critical programme components.

The findings and recommendations of this Review are intended to support national authorities and partners in sustaining and strengthening the TB response, informing strategic planning, and guiding resource mobilization, including future Global Fund applications, in a rapidly evolving and resource-constrained environment.

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The Review team also expresses its appreciation to people affected by tuberculosis, whose experiences, insights and engagement continue to shape efforts to improve the quality, accessibility and person-centeredness of TB prevention, diagnosis and care.

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Abbreviations and acronyms

ACH	air changes per hour
aDSM	active drug safety monitoring
ALOS	average length of stay
AMP	Affordable Medicines Programme
AMR	antimicrobial resistance
APH	Alliance for Public Health
ART	antiretroviral therapy
BCG	bacille Calmette-Guérin TB vaccine
BPaLM	bedaquiline, pretomanid, linezolid, moxifloxacin
CAD	computer-aided diagnosis
CCM	Country Coordinating Mechanism
CCPD	(Regional) Center for Control and Prevention of Diseases
CLM	Community Led Monitoring
COVID-19	coronavirus disease 2019
CPH	Center of Public Health
CRP	C-reactive protein
CSO	civil society organization
DR-TB	drug-resistant tuberculosis
DST	drug susceptibility testing
DS-TB	drug-susceptible tuberculosis
ECDC	European Centre for Disease Prevention and Control
EECA	Eastern Europe and Central Asia
EQA	external quality assurance
EWS	Early Warning System
GDF	Global Drug Facility
GDP	Gross Domestic Product
HIV	human immunodeficiency virus
ICD	Infection Control Department
IDP	internally displaced people
IGRA	interferon gamma release assay
IPC	infection prevention and control
ISO	International Organization for Standardization
ISSSD	Information System for Socially Significant Diseases
LF-LAM	lateral flow urine lipoarabinomannan assay
LIMS	Laboratory Information Management System
LMIS	Logistics Management Information System
M&E	Monitoring and evaluation
MDR-TB	multidrug-resistant tuberculosis
MDT	multidisciplinary team
MGIT	Mycobacteria Growth Indicator Tube
MoH	Ministry of Health
MoJ	Ministry of Justice
MPSS	medical and psychosocial support services
MPU	State Enterprise 'Medical Procurement Ukraine'
MSF	Médecins Sans Frontières
mSTR	modified shorter treatment regimen (for RR-TB)
mWRD(s)	molecular WHO-recommended rapid diagnostics
NAMSU	National Academy of Medical Sciences of Ukraine
NGO	non-governmental organization
NHSU	National Health Service of Ukraine
NNS	number needed to screen
NIPhP	National Institute of Phthisiology and Pulmonology

NRL	National Reference Laboratory
NTP	National Tuberculosis Programme
OST	opioid substitution therapy
PHC	primary health care
PLHIV	people living with HIV
PMG	Programme of Medical Guarantees
PMTCT	prevention of mother-to-child transmission
PMTPT	programmatic management of tuberculosis preventive treatment
PPE	personal protection equipment
PR	Principal Recipient
PSM	procurement and supply management
RR-TB	rifampicin-resistant tuberculosis
SCI	Service Coverage Index
SDG	Sustainable Development Goal
SMS	Short Message Service
SOPs	Standard operational procedures
SPSS-TB	standardized package of community-based tuberculosis services
STI	sexually transmitted disease
TB	tuberculosis
TBI	tuberculosis infection
TGF	The Global Fund
TNF-α	tumor necrosis factor-alpha
tNGS	targeted new-generation sequencing
TPT	tuberculosis preventive treatment
TSR	treatment success rate
TST	tuberculosis skin test
UAH	Ukrainian Hryvna
UHC	Universal Health Coverage
UN	United Nations
UNHCR	United Nations High Commissioner for Refugees
USG	United States Government
UVGI	ultraviolet germicidal irradiation
VST	video-supported treatment
W4SS	WHO-recommended four-symptom screening
WHO	World Health Organization
WHO/EURO	World Health Organization Regional Office for Europe
XDR-TB	extensively drug-resistant tuberculosis

Antituberculosis drugs

Bdq (B) – bedaquiline
Cfz – clofazimine
Cs – cycloserine
Dlm – delamanid
E – ethambutol
FQ – fluoroquinolone
H – isoniazid
Lfx – levofloxacin
L – linezolid
Mfx – moxifloxacin
P – rifapentine
Pa – pretomanid
R – rifampicin
Z – pyrazinamide

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Executive summary

Background

Ukraine continues to face a substantial tuberculosis (TB) burden in an exceptional context shaped by the ongoing war, large-scale population displacement, damage to health infrastructure, workforce shortages, and sustained fiscal pressure on the health system. Despite these challenges, the country demonstrates a high degree of resilience, preserving continuity of essential TB services and continuing to advance key reforms aligned with the WHO End TB Strategy and Universal Health Coverage (UHC).

The National Tuberculosis Programme (NTP) operates within a rapidly evolving legal and policy environment. Since the previous Programme Review in 2022, Ukraine has further strengthened its frameworks for TB prevention, diagnosis, treatment and care, embedding the TB response within broader health system reforms. The adoption of a new TB law, updated national strategies, and revised national TB standards aligned with WHO guidelines has enabled the rapid uptake of innovations, particularly in diagnostics, shorter treatment regimens, and people-centered models of care, alongside further integration of TB services within primary health care.

This National TB Programme Review was conducted between August and November 2025. It assessed progress towards national and global TB targets in the context of the war; reviewed programme performance, coverage, and outcomes; examined the impact of funding reductions and adaptive responses; evaluated governance, organization, and intersectoral coordination; and identified priority measures to sustain and accelerate the TB response in a shifting operational and financing environment. The Review was based on a desk review of national documents and routine data, complemented by a country mission conducted during 15-20 September 2025, including field visits to Chernihiv, Zhytomyr and Lviv oblasts, and Kyiv, visits to civilian and penitentiary sectors, primary healthcare facilities, and consultations with government institutions, service providers, civil society organizations (CSOs), and partners.

Objectives of the Review were:

- Review the national TB control programmes progress toward the NSP's impact targets and global targets in the context of war;
- Review the achievement of programme outcome and coverage targets;
- Assess the impact of funding cuts on the NTP, review adaptations that have been made, remaining challenges and recommendations for the future;
- Define and prioritize concrete measures needed to establish sustainable financing mechanisms in response to the shifting funding environment;
- Evaluate the structure, organization and management frameworks for TB policy and the development of the programme within the health-care system and within the national agenda for development;
- Evaluate the level of engagement of other relevant sectors and stakeholders in coordinated TB response;
- Set relevant and ambitious targets for national indicators, taking into account the impact of the war;
- Assess the sustainability and continuity of TB service delivery in the context of the ongoing war;
- Examine regional variations in the implementation, delivery of services, and their corresponding outcomes;
- Propose recommendations to accelerate response to TB in new operational context.

Key findings

Overall performance and resilience of the TB response

The Review confirms that Ukraine has maintained continuity and quality of TB services nationwide, including in frontline, high-mobility, and resource-constrained settings. Strong national stewardship, together with meaningful engagement of non-governmental organizations and external partners, has been central to sustaining service delivery. National TB standards are fully aligned with WHO guidance, and the programme has demonstrated rapid uptake and scale-up of WHO-recommended approaches across the TB care continuum.

TB epidemiology, case detection and diagnosis

TB notification rates in Ukraine continue to show a further decline; however, discrepancies between notified cases and WHO-modelled estimates persist and should be interpreted with caution, given population displacement and uncertainty regarding population denominators.

Targeted screening approaches supported by mobile teams, non-governmental organizations, and community-based interventions have contributed to improved case finding among key populations. At the same time, overall yield varies across settings, and the current list of risk groups for screening is extensive, indicating a need for sharper prioritization.

Ukraine maintains a well-developed, tiered TB laboratory network. Coverage of WHO-recommended rapid diagnostics and universal drug susceptibility testing has expanded further since the previous review. With Global Fund support, the NTP has expanded mobile screening approaches, including the use of digital X-ray with computer-assisted detection.

However, the Review identified ongoing challenges related to equipment maintenance, uninterrupted supply of consumables in some regions, and human-resource constraints, particularly at peripheral levels. Continued investment is required to sustain laboratory quality and ensure system resilience in the challenging operational environment.

TB preventive treatment

Ukraine has strengthened its legal and programmatic framework for TB preventive treatment (TPT), including the scale-up of short-course regimens. Coverage of TPT among household contacts and people living with HIV (PLHIV) has increased, although gaps remain, particularly in treatment monitoring and sustaining completion rates under conditions of displacement and insecurity.

The Review noted that declines in TPT completion observed in recent years are likely related to war-related disruptions rather than reduced acceptability, highlighting the need for adaptive follow-up and patient-support mechanisms.

Treatment of TB and DR-TB

The country has achieved substantial improvements in treatment outcomes, particularly for RR/MDR-TB and pre-XDR-TB. Between the 2017 and 2022 cohorts, treatment success increased from 51% to 67% for RR/MDR-TB and from 34% to 68% for pre-XDR-TB. Ukraine was the first country in the WHO European Region to adopt fully updated national TB standards aligned with WHO guidelines.

People-centered care has been institutionalized through decentralized ambulatory treatment, digital adherence technologies, and enhanced clinical monitoring. National standard operating procedures developed in 2025 enabled early implementation of the April 2025 WHO recommendations, including new 6- and 9-month DR-TB regimens.

Coverage of fully oral short regimens is high: the 4-month DS-TB regimen reaches around 40% of patients – among the highest uptake globally – while BPaL(M) regimens cover approximately 80% of eligible DR-TB patients. Integrated management of DR-TB and hepatitis C has further strengthened quality of care.

Despite these achievements, TB-related mortality remains a major contributor to unfavorable outcomes, particularly among people diagnosed late and among PLHIV. Sustaining quality assurance for regimen selection, safety monitoring, and adherence support remains essential. The introduction of systematic post-treatment follow-up for patients treated with short regimens requires further consolidation and consistent nationwide implementation.

TB in priority population groups

Childhood TB services are largely aligned with international standards. Among children and adolescents, TB incidence continued to decline in 2024. Contact investigation coverage is high, and approximately 90% of eligible children initiate TPT, with rapid expansion of rifapentine-based regimens in 2025.

Children are rarely hospitalized, video-supported treatment is used, and outcomes for both DS-TB and DR-TB in children are generally favorable. Policies enabling early return to school and integration of care with social support were identified as good practice. However, the relatively high proportion of TB disease among contacts indicates ongoing transmission risks that require continued emphasis on prevention and early detection.

TB/HIV and other comorbidities. Integration of TB and HIV services has improved, with high HIV testing coverage among TB patients and increasing antiretroviral therapy uptake. TB preventive treatment among PLHIV has expanded, although gaps in coverage and completion persist. Mortality is concentrated among patients who die shortly after diagnosis, underscoring the need for earlier case detection and rapid linkage to care.

Management of other comorbidities, including viral hepatitis and diabetes, is increasingly integrated into TB services. Integrated management of DR-TB and hepatitis C has been successfully introduced in several regions.

Prisoners and migrants. Within the penitentiary system, entry screening, infection prevention and control, and treatment regimens largely follow WHO recommendations, and collaboration with civil society supports continuity of care after release. At the same time, regulatory barriers that delay treatment initiation in some detention settings pose avoidable risks and require corrective action. For migrants, established screening and treatment pathways are in place and supported by CSOs; however, funding limitations constrain coverage.

People-centered support and community engagement

Civil society organizations play a critical role in TB screening, adherence support, psychosocial care, and community-led monitoring, particularly in war-affected and hard-to-reach settings. Digital adherence technologies, mobile outpatient clinics, and multidisciplinary teams have enhanced service accessibility and continuity during the war. However, many people-centered support interventions remain heavily donor-dependent, raising concerns about sustainability as external funding declines.

Governance, UHC and financing

A robust governance and stewardship framework for the TB response is in place, supported by a strong legal mandate, updated national strategies, and alignment with broader health system reforms. The Ministry of Health and the Center of Public Health provide clear national leadership and technical oversight, while regional structures ensure implementation and continuity of services, including under wartime conditions. Nevertheless, capacity constraints persist, including limited staffing and resources for national TB coordination and continued reliance on donor-funded positions for core functions such as monitoring, supervision, and community engagement.

Ukraine has made significant progress in embedding TB services within UHC-oriented health-financing reforms. TB services are included in the Programme of Medical Guarantees and contracted by the National Health Service of Ukraine. However, domestic financing for TB is constrained in the current context, and the programme remains partially dependent on external funding for some core functions,

including procurement of essential medicines and diagnostics, mobile services, and programme supervision.

Management of pharmaceuticals and medical products

Ukraine operates a centralized and functional system for the procurement and distribution of TB medicines and key medical products, ensuring access to quality-assured first- and second-line drugs, including those required for WHO-recommended short regimens. Redistribution mechanisms and collaboration with international procurement platforms have helped maintain supply continuity during the war.

Nonetheless, challenges remain in forecasting accuracy, stock management at peripheral levels, and coordination across procurement, warehousing, and service delivery, particularly in war-affected areas. Strengthening logistics management systems and ensuring sustainable domestic financing for TB medicines and ancillary products are critical to reducing supply risks and supporting uninterrupted care.

Data systems and research

TB surveillance systems are functional and increasingly integrated with broader health-information platforms, although data quality, interoperability, and analytical capacity require further strengthening.

Ukraine has developed a National TB Research Agenda and expanded research output; however, funding and institutional coordination remain limited, constraining the impact of research on policy and practice.

Key recommendations

1. Revise and streamline the list of risk groups for systematic TB screening to reflect current epidemiological evidence and optimize resource allocation, in line with WHO recommendations.
2. Increase TPT coverage among all eligible contacts and PLHIV on ART by addressing service gaps and ensuring systematic follow-up and timely treatment initiation.
3. Enhance and sustain digital laboratory information and reporting systems (e.g. LIMS) to ensure full functionality, interoperability, and real-time connectivity for complete and timely transmission of diagnostic and DST results, including XDR-TB, across all levels of the laboratory network.
4. Maintain and expand the use of short all-oral regimens for DR-TB (BPaLM, BDLLfxCfz) for the majority of patients, including those with or without confirmed fluoroquinolone resistance. Longer (18-month) regimens should remain limited to cases where short regimens are not feasible.
5. Continue providing psychosocial support for children and adolescents with TB and include this component in the application for the next Global Fund grant (2027–2029).
6. Strengthen and further consolidate early HIV diagnosis, rapid ART initiation, and timely TB detection to reduce mortality among people with TB/HIV co-infection, particularly through earlier presentation and improved linkage to care.
7. Continue strengthening TB screening procedures among IDPs, including through supporting NGOs for this purpose in the new Global Fund cycle.
8. Consider decentralizing TB treatment initiation in penitentiary institutions, starting with pilot sites.
9. Consider including procurement of screening tools (CAD/AI-enabled X-ray systems and Xpert instruments) in the new Global Fund application to enable effective mass screening in penitentiary settings.

10. Expand the use of digital adherence technologies to ensure TB treatment continuity, particularly where service delivery is disrupted by the war.
11. Continue addressing TB-related stigma and mental health challenges through systematic training, patient-centered communication, and community engagement.
12. Define the roles and responsibilities of CSOs and revise relevant legislation, particularly for pre-diagnostic activities such as active TB case finding and prevention, video-supported treatment, and outpatient care, to complement PHC services.
13. Support TB community-led monitoring (OneImpact) to further develop and integrate it with legal literacy, access-to-justice initiatives, awareness and education activities, and service delivery programmes, with dedicated funding allocations.
14. Strengthen PHC engagement and outpatient TB treatment by assigning outpatient TB care as a mandatory PHC function within NHSU service packages and revising provider payment mechanisms to introduce performance-based incentives, including for prevention services.
15. Enhance the operational capacity of the TB management unit at the Center of Public Health by increasing staffing and allocating dedicated funding for priority functions such as programme oversight and monitoring and evaluation.
16. Regularly update the national registry of TB human resources, taking into account system-level needs and territorial accessibility.
17. Accelerate development and rollout of the logistics management information system under the Information System for Socially Significant Diseases (ISSSD) to enable timely electronic tracking of medicine movement.
18. Update the national quantification methodology for TB medicines by adopting QuanTB as the standard forecasting approach.
19. Strengthen automated data quality assurance mechanisms within the ISSSD platform.
20. Strengthen coordination and resource mobilization for TB research through a national mechanism engaging public budgets, international donors, the private sector, and academic institutions to align funding and advocate for increased public investment in the National TB Research Agenda.

Detailed priority recommendations are included in each thematic section of the report.

* * *

Systematic screening for TB and TB preventive treatment

Regulatory framework for systematic TB screening and TPT

Since 2022, Ukraine has strengthened its regulatory framework for systematic screening for active TB, tuberculosis infection (TBI), and the implementation of TB preventive treatment (TPT), despite the challenges posed by the war crisis. The Law *'On combating tuberculosis'* (July 2023)[1] mandates regular examinations of people in high-risk groups using methods such as chest X-ray and rapid molecular tests. For TBI, it regulates immunological testing (tuberculin skin test or IGRA) and preventive treatment to avoid progression to disease.

The '*Strategy for development of the tuberculosis medical care system for the population of Ukraine for 2024-2026'* (August 2024)[2] emphasizes early detection and improved access to care, including the implementation of screening for TB among high-risk groups and the diagnosis and management of TBI. The *'Operational plan for the implementation of the state Strategy on HIV/AIDS, tuberculosis, and viral hepatitis for 2024-2026'* (June 2024)[3] includes specific targets for TB screening among high-risk groups and for the diagnosis and preventive treatment of TBI.

The Ministry of Health (MoH) Order No. 102 (January 2023)[4] endorses the Health Service Standards for TB, which state that TB screening should prioritize people at highest risk, including medically vulnerable groups and communities with a high TB prevalence. The Cabinet of Ministers Resolution No. 802 (July 2024)[5] mandates systematic TB screening, including testing for TBI, among imprisoned population.

MoH Order No. 302 (amended in May 2024)[6] regulates procedures for TB screening and TBI. The document defines clear responsibilities for public and private healthcare institutions, including those within the penitentiary system. Responsibilities include identifying people at risk, conducting annual screening, diagnosing TB and TBI as defined in the National TB Standard, initiating preventive treatment, and monitoring treatment safety. The 2024 amendments introduced several updates: 1) terminology was revised, replacing the term 'risk groups' with 'key populations and groups at increased risk'; 2) institutional responsibilities were expanded, particularly for regional public health centers, disease control centers, and penitentiary institutions; 3) the use of IGRA tests for TBI diagnosis was introduced, with testing conducted in specialized laboratories. The order also strengthens mechanisms for epidemiological reporting and provides detailed algorithms for both active and passive screening.

In early 2024, under the coordination of the Ministry of Health and with technical support from WHO/Europe, a draft national guideline on systematic TB screening and preventive treatment was developed as part of the PASS initiative.[7] The document consolidates updated recommendations on screening algorithms for key populations, diagnostic methods with high sensitivity and specificity, and cost-effectiveness analyses tailored to the Ukrainian epidemiological context.

Although the guideline remains in draft form and has not yet been formally endorsed by the MoH, its core WHO-aligned recommendations have already been translated into draft amendments to the existing National TB Standard. These amendments are expected to be approved in the near future, enabling implementation of updated practices without waiting for the formal adoption of the standalone guideline. In this context, the draft guideline serves as a technical reference to inform ongoing policy updates and to support strategic planning for targeted screening interventions.

[1] https://zakon.rada.gov.ua/laws/show/3269-20#Text
[2] https://www.kmu.gov.ua/npas/pro-skhvalennia-stratehii-rozvytku-systemy-protytuberkuloznoi-medychnoi-dopomohy-s72620824
[3] https://ips.ligazakon.net/document/KR240564?an=1
[4] https://moz.gov.ua/uk/decrees/nakaz-moz-ukraini-vid-19012023--102-pro-zatverdzhennja-standartiv--medichnoi-dopomogi-tuberkuloz
[5] https://www.kmu.gov.ua/npas/pro-zatverdzhennia-poriadku-nadannia-medychnoi-dopomohy-liudiam-iaki-khvoriiut-na-tuberkuloz-z-chysla-osib-vziatykh-pid-vartu-chy-iaki-trymaiutsia-v-ustanovakh-vykonannia-pokaran-i090724-802
[6] https://ips.ligazakon.net/document/RE37702?an=1
[7] *Systematic screening and preventive treatment for Tuberculosis in Ukraine: a proposal from the PASS initiative*

Early detection and systematic TB screening

Until the new guideline is officially adopted, TB screening activities continue to be guided by the existing regulatory framework, particularly the National TB Standard[8] and Standard III, which remain the basis for operational procedures. Operationally, systematic screening is directed to a single consolidated list of 23 categories defined in the National TB Standard (Annex 7), and all these categories are considered mandatory under the current Standards:

1. Individuals who have had close or focal contact with people diagnosed with active TB
2. People living with HIV (PLHIV)
3. Individuals exposed to silica, particularly miners
4. People in temporary detention centers; people imprisoned or sentenced to imprisonment in pre-trial detention centers/penitentiary institutions; people released from prison; staff, including medical staff, of pre-trial detention centers and penitentiary institutions
5. Health care workers
6. People with fibrotic residual changes in the lungs who have not received TB treatment
7. People with diseases leading to impaired immunity (malignant neoplasms, diabetes mellitus, those receiving immunosuppressive therapy and TNF-α inhibitor therapy)
8. People who abuse alcohol or use drugs
9. Migrants, including internally displaced people
10. Military personnel
11. People living below the poverty line (in particular, people registered as low-income)
12. People without a fixed place of residence
13. People previously treated for TB
14. People with chronic respiratory disease
15. People with a history of pneumonia
16. Smokers
17. People with nutritional deficiencies or a body mass index ≤18
18. People with gastrectomy or gastrointestinal bypass
19. People with chronic renal failure
20. People over 60 years of age
21. Pregnant women (as well as women in the postpartum period within 3 months of delivery)
22. People in psycho-neurological institutions
23. People living in shelters

According to the latest WHO estimates published in the Global Tuberculosis Report 2025, the incidence of new and relapse TB was 33,000 cases in 2024 (range: 26,000-40,000)[9] in absolute terms. However, only 18,311 cases were officially registered, resulting in a case detection rate of 55.5%, well below the WHO European Region target of 95%.

TB case detection in Ukraine is conducted through two primary modalities:

- Passive detection, when people with symptoms suggestive of TB present to public or private healthcare facilities. In such cases, diagnostic testing is mandatory.
- Active detection, or systematic screening, conducted annually by primary health care providers and targeting people from high-risk groups, including those at risk of TBI. This service is part of the state-guaranteed medical package and is provided free of charge in public healthcare institutions, funded by the state budget.

Early TB detection is carried out by healthcare professionals when individuals seek care at PHC facilities or hospitals, during mandatory preventive medical examinations, and in the context of TB immunization activities. When a person is suspected of having TB, health care providers are required

[8] https://phc.org.ua/sites/default/files/users/user90/MOZ_nakaz_19.01.2023_102_standarty_dodatky.pdf
[9] https://www.who.int/teams/global-programme-on-tuberculosis-and-lung-health/data

to ensure timely referral for diagnostic evaluation in accordance with Standard III of the National TB Standards.[10]

In addition to the formal health care system, non-governmental organizations (NGOs) involved in TB control play a critical role in reaching key populations that may face barriers in accessing mainstream services – such as people who use drugs, people experiencing homelessness, and, under certain circumstances, military personnel. NGOs conduct targeted TB screening and facilitate referrals, often in collaboration with PHC institutions, based on lists of key populations developed at PHC level, thereby strengthening early detection and promoting equity in service delivery.

All these activities are part of the national TB programme, which guarantees free access to diagnostic and treatment services for all patients, including internally displaced people, under the State Guaranteed Medical Services Programme.

Ukraine uses a multimodal approach to systematic TB screening. Screening is conducted using a combination of symptom-based questionnaires, chest X-ray – increasingly supported by computer-aided detection – and WHO-recommended rapid molecular diagnostic tests (mWRDs) such as GeneXpert.

- Symptom-based questionnaires (W4SS)[11] are used as the initial step in TB screening, particularly among PLHIV and other high-risk groups. The W4SS tool assesses the presence of four key symptoms – cough, fever, night sweats, and weight loss – and is administered at every contact with healthcare providers, regardless of the reason for the visit. This approach enables early identification of people who require further diagnostic evaluation and supports the integration of TB screening into routine health services.
- Chest radiography and computer-aided detection (CAD) are widely used for systematic TB screening, including through both stationary and mobile X-ray units, particularly in outreach settings and among high-risk groups. The Center of Public Health (CPH) promotes the use of digital radiography and is piloting CAD software to enhance image interpretation and triage efficiency. Within the implementation of the Global Fund grant, CPH is planning to further expand access to artificial intelligence (AI) technologies by strengthening the capacity of health care facilities involved in TB screening. Specifically, procurement of AI systems to support radiographic image interpretation is envisaged, with an international tender to be launched for 12 regional phthisiopulmonology centers (ensuring AI access for all TB facilities) and for 23 high-volume multidisciplinary hospitals with significant radiology workloads. These measures aim to reduce missed TB cases, improve screening effectiveness, enhance the quality and timeliness of case detection, optimize radiologists' workload, and strengthen the overall efficiency of the TB screening system. Between 2020 and 2024, the number of adults screened annually by chest X-ray ranged between over 8 million, with a slight decline over time – from 10.8 million in 2020 to 8.1 million in 2024. Despite this decrease, the prevalence of TB among those screened increased from 43.7 per 100,000 in 2020 to 82.7 per 100,000 in 2024, indicating improved targeting of high-risk groups and potentially more effective screening strategies. Between January and August 2025, mobile TB screening covered 17 regions and examined 57,732 individuals from high-risk groups. A total of 137 new TB cases were identified (0.24%), with 2.4% of them showing lung changes suggestive of TB. Additional findings included suspected tumors (0.36%), pneumonia (0.72%), and other chest pathologies (3.16%), confirming the effectiveness of mobile screening in early detection among vulnerable populations.
- Laboratory-based diagnostics – rapid molecular test (GeneXpert) is widely used in Ukraine as a diagnostic tool following initial TB screening. Although not typically used as a primary screening method, GeneXpert plays a central role in confirming TB in people identified through symptom

[10] https://phc.org.ua/sites/default/files/users/user90/MOZ_nakaz_19.01.2023_102_standarty_dodatky.pdf
[11] WHO-recommended four-symptom screening - assessment for cough, fever, night sweats, and weight loss

screening and X-ray. Since 2013, the network has expanded from 15 to 287 machines nationwide. In 2024, regional analysis revealed variation in TB detection rates using GeneXpert, with a national average of 13%. Higher detection rates were observed in Mykolaiv (21%), Kherson (21%), and Volyn (18%) oblasts, while lower rates were reported in Khmelnytskyi (8.0%) and Cherkasy (7.3%) oblasts. Use of mWRDs as the initial diagnostic test has grown substantially since 2018. In 2024, 98% of all diagnosed TB cases were tested using mWRDs, reflecting strong adherence to WHO recommendations. However, the proportion of bacteriologically confirmed TB among new and relapse cases remained below 70% in 2018-2024, indicating a need to strengthen test application and result interpretation.

- Tuberculin skin test (TST) is used for screening of TB infection among both children and adults from risk groups, in line with the current National TB Standard and WHO recommendations.
- C-reactive protein (CRP) testing is used as an additional screening tool for PLHIV not receiving antiretroviral therapy (ART). Used alongside W4SS, CRP testing helps exclude active TB before initiating TPT, particularly in immunosuppressed individuals, offering high negative predictive value and improving the safety of preventive treatment.

Systematic TB screening among contacts of confirmed TB cases. From 2018 to 2023, Ukraine consistently exceeded the WHO/EURO target of ≥90% coverage for contact screening of bacteriologically confirmed TB cases, with an average of 93%. In 2024, coverage dropped to 83%, indicating possible service disruptions and the need for corrective measures. Over the same period, the average number of contacts identified per index case was 2.06, close to the national average household size of 2.5, suggesting effective identification of exposed individuals. TB detection among screened contacts increased from 1.6% in 2018 to 2.5% in 2024, exceeding the average yield of 1.5% reported among the 18 high-priority countries in the WHO European Region and approaching the 5.0% prevalence observed in high TB incidence settings in global meta-analysis[12]. This trend may reflect improved targeting of high-risk contacts.

Systematic TB screening among PLHIV is integrated into routine HIV care and conducted by infectious disease specialists. At the time of registration for HIV care, a chest X-ray is prescribed if more than six months have elapsed since the last radiological examination. In addition, annual chest X-ray is recommended for all PLHIV as part of routine monitoring.[13]

For adults and children aged 10 years and older in outpatient settings, a sequential screening algorithm is applied: W4SS followed by chest X-ray if symptoms are absent. For children under 10 years of age, W4SS is used[14]. Screening questionnaires based on W4SS are administered at every contact with healthcare providers, regardless of the reason for the visit. PLHIV not yet on ART are screened for TB alongside ART initiation. Pregnant women living with HIV are screened as part of antenatal care.

To improve early detection, Ukraine has adopted additional diagnostic tools such as the LF-LAM urine test, particularly for PLHIV with advanced immunosuppression (CD4 <200 cells/mm³). Molecular testing (mWRDs) is increasingly used to confirm TB diagnosis and detect drug resistance in PLHIV.

Diagnosis of TB infection

According to MoH Order No. 302, diagnosis of TBI is recommended for people at increased risk of developing active TB, with the aim of identifying infected individuals who have no clinical symptoms and are not infectious, in order to prevent progression to active disease.

High-risk groups for TBI testing:

1. Close contacts of people with bacteriologically confirmed pulmonary TB, regardless of HIV status, including reverse contact tracing in epidemiological investigations

[12] https://publications.ersnet.org/content/erj/58/6/2100266
[13] https://phc.org.ua/sites/default/files/users/user92/HIV_in_UA_54_2023_EN.pdf
[14] https://phc.org.ua/sites/default/files/users/user92/HIV_in_UA_54_2023_EN.pdf

2. Children who did not receive BCG at birth or within the first 2 months of life, and older children for whom BCG vaccination is planned
3. Children under 5 years of age who have had contact with a bacteriologically confirmed case of pulmonary TB
4. PLHIV, including HIV-positive pregnant women and HIV-positive people who have successfully completed TB treatment
5. People in pre-trial detention or penitentiary institutions
6. People receiving immunosuppressive therapy (treated with TNF-α inhibitors, on hemodialysis or peritoneal dialysis, or preparing for organ or bone marrow transplantation)
7. People with congenital immunodeficiency, regardless of BCG vaccination status
8. People with signs of silicosis and/or anthracosilicosis

In Ukraine, TBI is primarily diagnosed using TST, with limited use of interferon-gamma release assays (IGRA), such as the QuantiFERON test. The choice of test depends on age, BCG vaccination status, and availability. TST remains the most widely used method, especially among children, although its interpretation requires trained personnel and centralized facilities. Importantly, TBI testing is not a mandatory prerequisite for initiating preventive treatment in certain high-risk groups, such as PLHIV and children under five years of age who have had contact with a TB patient.

Since September 2023, IGRA testing has been introduced in nine pilot regions as part of a national initiative supported by the Global Fund. These tests provide improved specificity, particularly in BCG-vaccinated populations, and are expected to be scaled up nationally in 2024. However, the country currently faces shortages of TST and delays in delivery of TB antigen-based skin tests (TBST), affecting the consistency of TBI screening efforts.

TB preventive treatment of people at high risk

Between 2018 and 2024, TPT coverage among all contacts in Ukraine declined from a high of 89% in 2021 to 50% in 2024, with an average of 68%. It is important to note that this indicator refers to coverage among all identified contacts, not only those eligible for TPT; therefore, the observed decline may partly reflect improvements in contact investigation and an increase in the number of contacts identified per index case.

TPT coverage among children under five remained consistently high, meeting the WHO target for the European Region (90%). In 2024, coverage in this group reached 91%. TPT coverage among PLHIV showed contrasting trends in 2021-2024. Among all PLHIV currently on ART, coverage declined from a peak of 16% in 2021 to 10% in 2024, averaging 12%. In contrast, TPT coverage among newly enrolled PLHIV on ART remained relatively high, averaging 74%, with a peak of 80% in 2022 and 76% in 2024, which remains below the WHO target of 99%.

The 2024 data suggest that the national TPT programme is increasingly reaching priority populations and adopting WHO-recommended short-course regimens. The most frequently used short-course regimen was 3HR (25%), followed by 3HP (16%). Notably, the 1HP regimen was used in about 14% of all cases and in more than 50% of HIV-positive contacts, consistent with WHO guidance favoring rifapentine-based short-course regimens for PLHIV. Fluoroquinolone-based regimens, recommended for contacts of MDR/RR-TB, were used in about 7% of all contact cases. Use of 4R remained limited (2%) (**Table 1**).

Table 1. TPT cascade among household contacts, disaggregated by HIV status and age group, 2024

Category	***HIV status****			***Age group***			***Total***
	Unknown	*Negative*	*Positive*	*< 5 years*	*5-14 years*	*≥ 15 years*	
Eligible for TPT (abs)	**8,013**	**11,471**	**712**	**1,255**	**3,564**	**15,863**	**20,682**
TPT initiated (abs)	6,432	9,413	658	1,079	3,312	12,240	**16,631**
TPT initiated (%)	**80.3**	**82.1**	**92.4**	**86.0**	**92.9**	**77.2**	**80.4**

- 1HP regimen (abs)	465	1,493	332	7	58	2,225	**2,290**
- 1HP regimen (%)	7.2	15.9	50.5	0.6	1.8	18.2	**13.8**
- 3HP regimen (abs)	567	2,007	51	35	151	2,439	**2,625**
- 3HP regimen (%)	8.8	21.3	7.8	3.2	4.6	19.9	**15.8**
- 3HR regimen (abs)	2,315	1,769	23	582	1,390	2,135	**4,107**
- 3HR regimen (%)	36.0	18.8	3.5	53.9	42.0	17.4	**24.7**
- 4R regimen (abs)	157	148	1	25	49	246	**320**
- 4R regimen (%)	2.4	1.6	0.2	2.3	1.5	2.0	**1.9**
- 6-9 Lfx/Mfx ± E/Et (abs)	593	628	15	78	198	960	**1,236**
- 6-9 Lfx/Mfx ± E/Et (%)	9.2	6.7	2.3	7.2	6.0	7.8	**7.4**
- 6-9H monotherapy (abs)	2,335	3,368	236	352	1,466	4,235	**6,053**
- 6-9H monotherapy (abs)	36.3	35.8	35.9	32.6	44.3	34.6	**36.4**
Successfully completed TPT (abs)	4,318	6,693	501	872	2,256	8,384	**11,512**
Successfully completed TPT (%)	**67.1**	**71.1**	**76.1**	**80.8**	**68.1**	**68.5**	**69.2**

* Without the Ministry of Defense system

PMTPT recording and reporting

At present, the recording and reporting system for TB screening and TPT remains under development. Draft data collection forms have been designed to align with WHO standards and include all essential variables; however, they have not yet received formal approval from MoH. In the interim, data are being collected using Excel-based templates via Google Forms. At oblast level, data collection is typically coordinated by a designated focal point, most often within the M&E/statistics unit, who compiles information primarily from individual patient records.

Several challenges persist. In some instances, the source of data is unclear due to the absence of structured lists of individuals belonging to TB risk groups. In addition, TPT-related outcomes are not consistently recorded in individual medical records, which compromises data completeness and traceability. The electronic national TB registry currently lacks dedicated modules for contact screening and TPT, limiting its capacity to support standardized monitoring, reporting, and programmatic decision-making.

Summary of achievements and challenges

Ukraine has established a strong legal and strategic foundation for systematic TB screening and preventive treatment, with updated laws, national strategies, and service standards in place. A draft national guideline on TB screening and TPT, developed in 2024 with WHO support, provides a consolidated, up-to-date framework for future policy revisions.

The country has significantly expanded use of WHO-recommended screening tools such as GeneXpert, digital chest X-ray and CAD, and has maintained high coverage of contact screening, reflecting solid programmatic capacity.

WHO-recommended short-course TPT regimens (3HR, 3HP, 1HP) have been introduced and scaled up. IGRA testing was initially piloted in nine regions in 2023 and expanded to all regions except Kherson and Donetsk in 2024; starting from 2025 it is implemented nationwide in all regions of Ukraine. The standardized system for PMTPT recording and reporting is under development, with interim data collection already underway.

NGOs contribute meaningfully by reaching key and underserved populations, conducting targeted TB screening and facilitating referrals in collaboration with PHC institutions.

At the same time, important gaps persist. Only about 56% of estimated TB cases were detected and notified in 2024, indicating underdiagnosis and ongoing transmission.[15]

The national guideline on systematic screening and TPT remains in draft form. The current list of 23 risk groups for systematic screening is very broad and may dilute impact, calling for prioritization and alignment with WHO guidance. TPT coverage has declined among contacts overall and remains low among PLHIV on ART.

Recording and reporting systems for TB screening and TPT are still incomplete, and the absence of a dedicated PMTPT module in the national TB register limits data quality and use for decision-making. Finally, recurrent shortages and delays in TBI diagnostic supplies such as TST and TBST undermine consistent screening, especially in children and other high-risk groups.

Recommendations

No.	*Recommendation*	*Timeline*	*Implementer(s)*
1	Formally endorse and implement the national guideline on systematic TB screening and preventive treatment to ensure standardized, evidence-based practices aligned with WHO recommendations. **[High priority]**	Short-term	CPH, MoH
2	Revise and streamline the list of TB risk groups to reflect current epidemiological evidence and optimize resource allocation, in line with WHO recommendations. **[High priority]**	Short-term	CPH, MoH
3	Increase TPT coverage among all eligible contacts and PLHIV on ART by addressing service gaps and ensuring systematic follow-up and timely treatment initiation. **[High priority]**	Short-term	CPH, MoH
4	Ensure a consistent supply and national scale-up of TBI diagnostic tools (TST, TBST, IGRA) to strengthen early detection and preventive treatment among high-risk groups, including through the use of Global Fund resources. **[High priority]**	Short-term (procurement and distribution) / medium-term (scale-up)	CPH, MoH, partners
5	Integrate systematic TB screening and TPT monitoring into the national electronic TB registry to enable real-time data collection, analysis, and programmatic decision-making. **[High priority]**	Short-term (planning and resource mobilization) / Medium-term (system changes)	CPH, MoH

[15] Note. WHO burden estimates are based on UN population data, which include territories and regions not currently under the control of the Government of Ukraine. As a result, incident numbers may be overestimated; therefore, interpretations of epidemiological burden and coverage should be made with caution.

6	Strengthen intersectoral collaboration with national partners to expand TB screening coverage among key populations, including social services, HIV programmes, and penitentiary institutions. **[High priority]**	Continuous	CPH, MoH, other ministries and departments, partners
7	Strengthen the role of CSOs in systematic TB screening and preventive treatment by formally integrating them into national coordination mechanisms, standardizing collaboration with health-care institutions, ensuring access to diagnostics and treatment, and incorporating their activities into the national electronic TB reporting system, with the support of international technical assistance. **[High priority]**	Short-term (programmatic actions) / medium-term (system changes)	CPH
8	Develop a dedicated operational research framework for preventive treatment among contacts of people with MDR/RR-TB using a 6-month levofloxacin regimen for individuals with confirmed fluoroquinolone susceptibility, and assess alternative regimens for contacts with fluoroquinolone resistance. **[High priority]**	Short-term	CPH, MoH, partners

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TB laboratory diagnosis

This section presents progress and remaining challenges in strengthening the country's TB laboratory diagnostic capacity since the previous review of the national TB programme conducted in 2022.

National laboratory network: current status

The country has established a three-tier TB laboratory network providing broad access to WHO-recommended diagnostics (WRDs) and drug susceptibility testing (DST).

- *Level 1 laboratories (peripheral health centers)* operate within general healthcare facilities. Xpert MTB/RIF Ultra and smear microscopy are available as first-line diagnostic tools. Xpert XDR modules are also installed in all penitentiary facilities, given the limited feasibility of timely specimen referral to Level 2.
- *Level 2 laboratories* operate within regional TB centers and perform Xpert XDR and culture-based DST for a comprehensive drug panel (H, R, Lfx, Mfx 0.25–1 µg/mL, Z, E, Dlm, Bdq, Lzd, Cfz, Am, and Pa). Of 27 laboratories, 24 are functional; samples from non-functional sites are referred to nearby facilities or the National Reference Laboratory (NRL).
- *Level 3 (National Reference Laboratory)* operates within the Center of Public Health. The NRL, designated as the 'Public Health Laboratory TB Resistance Monitoring Center', achieved ISO 15189 accreditation in 2024. It coordinates the activities of Level 1 and Level 2 laboratories, provides national oversight, complex resistance testing (including Pa retesting), and quality management support across all regional and approximately 100 primary-level laboratories. The NRL collaborates with the Supranational Reference Laboratory (SRL) in Gauting, Germany, for strategy development, manual preparation, and quality assurance.

A national diagnostic algorithm is in place. National policy and the diagnostic algorithm are aligned with the principle of universal access to TB diagnosis and DST.

In 2024 (see Annex 1 for full indicator list), Ukraine reported 18,311 people diagnosed with TB, corresponding to a notification rate of 48.9 per 100,000. The country has achieved near-universal access to WRDs, with 97.8% of new and relapse TB patients tested by Xpert as the initial diagnostic method, and 94.2% of RR/MDR-TB patients receiving second-line DST for fluoroquinolones. A total of 3,300 RR-TB cases were notified, representing a rate of 8.8 per 100,000 population; 22.1% of RR-TB cases occurred in new patients, indicating ongoing primary transmission.

Overall, 72.7% of notified TB cases were bacteriologically confirmed, and 27.3% clinically diagnosed. The highest confirmation rates were recorded in Donetsk, Lviv, and Rivne (above the 90% WHO target), and the lowest in Dnipropetrovsk, Kirovohrad, Odesa, Ternopil, Khmelnytskyi, and Chernivtsi. The reasons for lower bacteriological confirmation include inappropriate selection of patients for bacteriological examination, incomplete implementation of the diagnostic algorithm; rejection of patient samples, delays in sample referral, and reduced access to phenotypic culture.

All testing sites have access to WRDs, with full data connectivity ensuring real-time transmission of results to clinicians via GX Alert/Aspect. Turnaround times are within acceptable thresholds for more than 90% of tests, and contamination rates remained low (4.5% for solid and 9.2% for liquid media). Furthermore, 98% of bacteriologically confirmed TB cases had DST results for rifampicin, 82% of RR/MDR-TB cases had fluoroquinolone DST results, and 71.3% of pre-XDR-TB cases had DST results for Group A drugs, reflecting high coverage and appropriate quality of diagnostic services nationwide.

In 2024, 287 Xpert instruments were operational (MoH institutions – 246, penitentiary system – 25, Ministry of Defense – 5, National Academy of Sciences – 5, National Specialized Children's Hospital – 1, AIDS centers – 7), performing approximately 140,000 tests per year, similar to previous years. It is estimated that full population coverage would require around 180,000 tests annually, which remains unrealistic due to hard-to-reach populations and gaps in frontline regions. Population displacement

has also increased diagnostic demand in recipient regions. In war-affected zones, mobile laboratories equipped with Xpert systems have been deployed. Some penitentiary centers face constraints because of limited human resources. Average turnaround time from sample collection to Xpert testing is less than three days (rarely increasing to ten days). The Xpert network is well maintained, and there have been no major stockouts or supply disruptions. Procurement of Xpert supplies is currently supported through TGF project, with annual forecasting and buffer stocks in place. All Xpert-positive results are transmitted by email to regional TB specialists via GX Alert/Aspect.

Biosafety regulations are supported by a Ministry of Health order (2024), developed by a working group chaired by the PHC. Maintenance and provision of personal protective equipment are ensured, although full implementation of updated sanitary measures is expected by 2026.

Over 90% of RR/MDR-TB patients are tested with Xpert XDR within seven days of initial detection, demonstrating strong diagnostic follow-up capacity. Since only 10% of Level 1 laboratories are equipped with 10-color modules; therefore, referral to specialists and specialized laboratories for RR-TB detection is justified under the current algorithm.

DST is performed for all recommended anti-TB drugs at the regional level (including Pa); laboratories have received the necessary consumables and pure substances.

The NRL, with technical support from the SRL, plans in the short term (2025–2026) to validate targeted next-generation sequencing (tNGS) on clinical samples (training planned for Q1 2026), integrate tNGS into the diagnostic algorithm, and begin national-level tNGS-based resistance monitoring, subject to adequate funding. Validation of whole-genome sequencing is ongoing and has been completed on 120 samples.

In the medium term (2026–2027), the strategy includes validating different tNGS platforms (Illumina, ONT) with cost-effectiveness analyses, developing an implementation and monitoring plan, building capacity in regional laboratories, and expanding tNGS-based resistance testing to regional hubs (five hubs to be established in the longer term).

Sample transportation and infrastructure

Specimen transport from Level 2 to the NRL is regular and supervised by the NRL through a contracted courier system. Transportation from Level 1 to Level 2 was not assessed in this Review.

Laboratory infrastructure is generally well maintained, with support from international partners. Some Level 2 laboratories operate with lower-grade equipment. In war-affected areas, several laboratories have been severely damaged and could not be fully reconstructed with existing funds and were only partially renovated.

Despite the availability and technical feasibility of HIV and HCV co-testing using WRDs as well as adequate laboratory capacity, coordination between programmes and data reporting remain suboptimal. Multiple reporting forms are still in use at facility level.

Quality management and biosafety

The NRL oversees the national quality management system and provides external quality assurance (EQA) to regional and primary-level laboratories. Diagnostic and laboratory performance indicators remain strong across the network. Key performance indicators (Xpert test volume, error/invalid rates, culture contamination, and DST results) are monitored quarterly. The NRL is ISO 15189 accredited, and 93–100% of laboratories participate in EQA, demonstrating proficiency. Twenty laboratories are enrolled for culture EQA. The NRL supports ISO 15189 accreditation efforts at Level 2 laboratories.

In 2024, the NRL – with WHO support – introduced a new checklist of laboratory indicators and trained regional staff on their interpretation and use through ongoing supervision visits. MGIT contamination rates remain below 10%, except for one laboratory. Xpert equipment errors occur but are not

systematic. Level 2 laboratories supervise peripheral sites, while NRL oversight is reinforced through GXAlert monitoring.

The Laboratory Information Management System (LIMS) remains partially functional and requires upgrading. At Level 1, Xpert results are entered into a management information system, although some data fields remain incomplete. Plans are underway to automate laboratory data reporting and generate statistical summaries; a pilot Excel-based version is expected to be operational by the end of 2026.

In 2024, the Ministry of Health released the State Sanitary Norms and Rules 'Establishment of microbiological laboratories for the diagnosis of tuberculosis and ensuring biological safety in their work', aimed at improving the setup of laboratories conducting microbiological diagnosis of TB and ensuring biosafety.

Human resources and training

Human resource issues are a major constraint, as it perceived that the number of laboratory staff is insufficient, particularly at peripheral level. Nevertheless, training is provided regularly to laboratory specialists, including online courses provided by CPH/NRL. Verification activities are conducted regularly, mostly in the field.

Daily consultations, supervisory visits, audits, and assessments of laboratory service quality are carried out to identify and address deficiencies. In 2024, 25 training sessions were conducted; however, the number is likely to decrease this year due to funding limitations and logistics issues, also affecting test evaluation and translational research activities. The NRL provided 117 written responses to regional requests and reviewed SOPs.

Summary of achievements and challenges

TB laboratory network in Ukraine has demonstrated several important achievements in recent years. National coverage with Xpert testing is high, supported by a functional supply chain, reliable forecasting, and consistent specimen transportation. The National Reference Laboratory (NRL) provides regular oversight and technical supervision, helping maintain strong performance indicators across the network.

Laboratory biosafety has been strengthened through a MoH order that standardizes requirements for TB microbiology laboratories, and quality assurance has advanced with the NRL achieving ISO 15189 accreditation and guiding regional laboratories through their own accreditation processes.

Nonetheless, important challenges persist. Human resource shortages affect laboratory services, limiting the programme capacity for timely diagnosis and patient monitoring. The LMIS remains only partially functional, resulting in incomplete data capture and weak connectivity across levels of care.

Reporting and notification of XDR testing results remain incomplete, and progress on integrating multiplex and cross-programme testing platforms has been slow. The EQA programme requires updating and expansion to keep pace with evolving technologies.

Limited funding constrains the introduction and validation of new diagnostic tests. Overall, sustainable financing is still needed to ensure uninterrupted laboratory services nationwide, particularly in regions with damaged infrastructure and the penitentiary sector.

Recommendations

No.	*Recommendation*	*Timeline*	*Implementer(s)*
1	Enhance and sustain digital laboratory information and reporting systems (e.g. LIMS) to ensure full functionality, interoperability, and real-time connectivity for complete and timely	Short term / medium term	CPH in collaboration with relevant partners

	transmission of diagnostic and DST results, including XDR-TB, across all levels of the laboratory network. **[High priority]**		
2	Sustain and scale up capacity-building and research initiatives, including operational research, tNGS implementation, and the integration of multiplex and multi-disease diagnostic approaches, to promote innovation, efficiency, and long-term sustainability of the TB laboratory network. **[High priority]**	Short– term / medium term	CPH in collaboration with partners Priority area to include in the GF funding request
3	Strengthen and expand human-resource capacity for TB diagnosis through targeted training to support testing, data reporting, and linkage to clinical management, particularly in the penitentiary sector and war-affected areas. **[High priority]**	Medium-term	CPH in collaboration with partners
4	Maintain systematic monitoring and oversight of laboratory performance data by the National Reference Laboratory (NRL) to ensure timely feedback and corrective actions, and mobilize sustainable financing mechanisms to support continuous quality improvement across the network. **[High priority]**	Continuous	CPH, NRL, regional laboratories
5	Upgrade and expand NRL infrastructure and staffing to strengthen DST services, laboratory network supervision, and training functions, including the implementation of comprehensive EQA and quality management systems aligned with international standards. **[High priority]**	Medium-term	CPH, NRL in collaboration with external partners

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Treatment of people with TB

Over the past five years, significant progress has been achieved in improving treatment outcomes for both drug-susceptible (DS-TB) and drug-resistant tuberculosis (DR-TB) in Ukraine. The country remains on the WHO global list of high-burden countries for RR/MDR-TB and continues to bear the second-highest burden of DR-TB in the WHO European Region.

Between 2018 and 2023, the treatment success rate (TSR) among new and recurrent TB cases ranged from 75% to 79%, comparable to the WHO European Region average (75%) but still below the regional target of 90% by 2025. The leading cause of unfavorable outcomes was death, indicating that many patients are diagnosed at an advanced stage. Another important factor negatively affecting treatment outcomes is the high proportion of TB/HIV coinfection, which is associated with increased mortality. Approximately 20% of new and relapse TB cases in the 2016–2021 cohorts occurred among people with HIV-associated TB.

For RR/MDR-TB patients without fluoroquinolone resistance, the TSR improved substantially from 51% in 2017 treatment cohort to 67% in 2022 cohort, primarily due to a sharp decline in treatment failure (from 18% to 3%) and reduced loss to follow-up. These improvements are linked to the expansion of WHO-recommended fully oral shorter regimens and the scale-up of rapid molecular testing for drug resistance. Among pre-XDR/XDR-TB patients, TSR increased from 34% in 2018 cohort to 68% in 2022 cohort, with most remaining unfavorable outcomes due to death or loss to follow-up. Further improvements are anticipated for more recent cohorts as new regimens continue to be scaled up nationwide.

For TB/HIV co-infected patients, the TSR in the 2023 cohort was 68%. Mortality remains the main cause of poor outcomes, associated with late HIV diagnosis and suboptimal adherence to ART. Nevertheless, HIV testing coverage among TB patients has remained above 95% throughout the past decade (99% in 2024), and ART coverage among TB/HIV patients increased from 84% in 2019 to 92% in 2024.

Overall, Ukraine has demonstrated substantial progress in improving DR-TB treatment outcomes, driven by the nationwide adoption of all-oral regimens, expanded DST, and patient-centered approaches such as video-supported treatment (VST). These achievements are particularly notable given the ongoing war, which continues to disrupt health services and displace large segments of the population.

Infrastructure and human resources within the TB service have been severely affected by the hostilities, with staffing and financing challenges remaining highly acute across TB facilities. Although the Luhansk TB Center is no longer operational at its original location, its functions have been relocated to other regions. Meanwhile, TB centers in other conflict-affected areas continue to deliver both inpatient and outpatient TB care, including in Kherson, Donetsk, and Kharkiv. In the context of broader health-system reorganization, some TB centers have been merged with infectious disease hospitals, with TB departments integrated into these facilities. However, no additional TB beds have been established in Kharkiv or Zaporizhzhia, and the merged facilities continue to be classified and to operate as TB centers.

National standards and model of care

Ukraine is among the early adopters of the latest WHO policies for TB treatment across all age groups. Institutionalization of these recommendations has been achieved through the National Standard of TB Care (referred to as the 'national TB guidelines'), which serves as the overarching guidance framework. Detailed operational instructions for implementers are provided in Standard Operating Procedures (SOPs).

In January 2023, Ukraine became the first country in the WHO European Region to update its national standards of TB care to fully align with the WHO Consolidated Guidelines (Modules 1-5). The national TB guidelines introduced shorter, all-oral regimens, age- and weight-based dose adjustments, and a people-centered model of care covering adults, children, and adolescents.

The national TB guidelines are based on the following principles:

- People-centered care, ensuring patient choice, adherence support, and informed consent.
- Universal DST prior to treatment initiation or modification, with all regimens aligned to WHO 2020–2022 recommendations.
- Ambulatory (decentralized) care as the default model, with hospitalization only when clinically indicated (five main criteria for admission).
- Comprehensive adherence support through family engagement, psychosocial assistance, and digital tools (VST, SMS reminders, phone follow-up).
- Weight-based dose adjustments across all age groups.
- Monthly monitoring of clinical and bacteriological response, with tailored follow-up for patients facing adherence or adverse-event challenges.

Treatment of drug-susceptible and drug-resistant TB

In Ukraine, treatment of DS-TB and DR-TB is guided by the national TB guidelines, fully aligned with WHO recommendations. Regional TB services operate through clinical TB and DR-TB committees capable of independently designing regimens, defining outcomes, and managing complex cases. Support from the NTP is available when needed, and particularly complicated cases may be referred to the WHO/Europe Virtual Medical Consilium for expert consultation.

In the penitentiary sector, designated TB facilities responsible for DS-TB and DR-TB treatment apply the same normative documents and clinical standards used in the civilian sector.

Ukraine has introduced shortened four-month regimens for drug-susceptible pulmonary TB, following WHO 2022 guidance. The standard first-line regimen remains 2HRZE/4HR, applicable to all ages and disease severities unless resistance to isoniazid or rifampicin is detected.

An alternative four-month regimen (2HPZMfx/2HPMfx) is recommended for patients aged ≥12 years and weighing ≥40 kg with drug-susceptible TB (DS-TB) and without severe extrapulmonary disease. Ukraine is a global leader in the implementation of this shortened regimen, with up to 40% of DS-TB patients enrolled – the highest proportion reported worldwide. Ukraine should continue the programmatic use of the four-month HPMZ regimen for DS-TB as part of the national treatment portfolio, ensuring appropriate patient selection and weight-based dosing. While acknowledging the higher cost and pill burden compared with standard regimens, this regimen should be strategically prioritized for populations in whom treatment shortening offers additional programmatic or patient-level benefits, including improved adherence, reduced risk of treatment interruption, and enhanced service-delivery efficiency, while maintaining comparable treatment outcomes.

For isoniazid-resistant, rifampicin-susceptible TB, a six-month regimen of Lfx, R, E, and Z is used across all age groups, based on DST results.

Treatment is mainly delivered in ambulatory settings, supported by digital adherence tools such as VST, mobile applications, and SMS reminders. Physicians ensure weight-based dosing and routinely monitor for adverse events throughout the treatment course. In frontline areas, diagnosis and treatment are organized by regional TB services with strong support from national and international NGOs.

For DR-TB management, Ukraine prioritizes fully oral treatment regimens, and injectables have been completely phased out. Regimen selection is based on rapid molecular and phenotypic DST and treatment history. For RR/MDR-TB patients without fluoroquinolone resistance, short all-oral regimens (6-9 months) are the standard of care. For pre-XDR-TB, the 6-month BPaL regimen (Bdq, Pa, Lzd) is the preferred treatment. For XDR-TB, longer individualized regimens (18–20 months) combining new and repurposed medicines are used as last-resort options.

The current national TB guidelines recommend the following DR-TB treatment regimens:

- Short all-oral MDR/RR-TB regimen (BPaLM): Bdq, Pa, Lzd, and Mfx for 6 months (extendable to 9 months) is indicated for the majority of RR/MDR-TB patients without FQ resistance. For confirmed FQ resistance, Mfx is discontinued. BPaLM now covers up to 80% of eligible DR-TB patients.
- Short 9-month regimens (STR): containing Bdq, Lzd (2 months), Lfx or Mfx, Cfz, Z, Eto, E, and high-dose H. These regimens align with WHO 2022 guidelines but are not used in Ukraine due to widespread baseline resistance to several drugs.
- Modified 9-month regimens (mSTR): fully oral 9-month regimens for RR/MDR-TB without FQ resistance. These were evaluated in WHO/Europe-supported operational research involving 13 EECA countries, with Ukraine enrolling the highest number of patients. The study demonstrated >82% treatment success and very low recurrence after completion. The mSTR regimen is also used for patients not eligible for BPaLM (children <14 years, pregnant or breastfeeding women). This work, along with the LIFT-TB Project introducing BPaL for pre-XDR-TB, strengthened Ukraine's clinical and research capacity and supported rapid scale-up of WHO-recommended short regimens.
- Longer individualized regimens (18-20 months) for pre-XDR and XDR-TB combine Group A drugs (Bdq, Lzd, Lfx/Mfx) with Group B agents (Cfz, Cs) and, where necessary, Group C medicines (Dlm, PAS, Pto). Such regimens are considered last-hope options when shorter treatments are not suitable. They are used as the last resort when shorter regimens cannot be applied.

Given pill burden and frequently observed adverse events, adherence support is essential in DR-TB management. The national standards emphasize comprehensive patient education, psychosocial support, and close clinical monitoring. Baseline and follow-up safety monitoring includes ECG, liver function tests, HIV and hepatitis B/C screening, complete blood count, and screening for peripheral neuropathy and visual impairment. To prevent neuropathy, Vitamin B6 is co-administered with all linezolid-containing regimens. Baseline depression screening is conducted using an NTP-developed tool. This monitoring framework is implemented nationwide, including in PHC and penitentiary settings.

The April 2025 WHO Consolidated Guidelines introduced new alternative regimens, including a 6-month BDLLfxCfz regimen (Bdq, Dlm, Lzd, Lfx, Cfz) for patients with or without FQ resistance, particularly suitable for children under 14 and pregnant/breastfeeding women not eligible for BPaLM. Three new 9-month regimens are also recommended for RR/MDR-TB without FQ resistance. Concomitant treatment of DR-TB and hepatitis C is recommended and has already been implemented in all regions of Ukraine, supported by the national hepatitis elimination programme, which provides direct-acting antiviral medicines.

These updates have been incorporated into Ukraine's new TB treatment standard, currently being finalized and expected to be submitted for endorsement by the end of 2025. The NTP has prepared interim SOPs (August 2025), already applied in Zhytomyr, Chernihiv, and Lviv oblasts, enabling early expansion of WHO-recommended short regimens.

Operational context and implementation challenges

Amid the war and major disruptions to the health system, the use of short regimens for both DS-TB and DR-TB remains a strategic priority. These regimens improve adherence, reduce treatment burden, optimize resource use, and maintain high levels of effectiveness.

The NTP, regional TB services, and NGOs continue to ensure access to diagnosis, treatment, and care for people in war-affected areas. NGOs play an essential role by conducting TB screening, facilitating referrals to PHC clinics, operating mobile TB units, and providing patient accompaniment and VST. They collaborate closely with district administrations and regional TB services, ensuring alignment with national policies.

Special attention is given to patients returning from situations of prolonged confinement or disrupted access to health care, where TB treatment practices may have deviated from WHO recommendations or where continuity of access to quality-assured medicines may have been compromised. This includes individuals returning from captivity or other forms of detention, including military-related detention, as well as persons transitioning from prisons or other closed institutional settings. Although no major concerns were identified during field visits, the mission recommended maintaining heightened vigilance to prevent potential amplification of drug resistance among these populations.

These contextual challenges and adaptive responses inform the key findings and recommendations that follow and highlight both the resilience of the TB programme and areas where support and investment remain essential.

The information presented is based on a desk review of national documents, findings from the mission's field visits to Chernihiv, Lviv, and Zhytomyr oblasts, and virtual interviews with the CPH, the National TB Institute, and specialized TB prison institutions in Kharkiv and Dnipro oblasts, which serve as referral centers for DS-TB and DR-TB treatment.

Summary of achievements and challenges

Ukraine has maintained continuity of TB services despite the ongoing war and, over recent years, has achieved notable improvements in treatment outcomes, particularly for RR/MDR-TB and pre-XDR-TB, where success rates increased from 51% to 67% and from 34% to 68% respectively between the 2017 and 2022 cohorts.

The country aligned its policies with WHO recommendations and, in January 2023, became the first in the WHO European Region to adopt fully updated national TB standards consistent with the WHO Consolidated Guidelines. A people-centered model of care is being implemented that emphasizes universal DST, decentralized ambulatory treatment, digital tools for adherence, and continuous patient monitoring.

In 2025, national SOPs were introduced to support early implementation of the latest WHO recommendations, including new short regimens such as BDLLfx and the updated 9-month schemes. Ukraine has significantly expanded the use of fully oral short regimens for both DS-TB and DR-TB: the 4-month HPMZ regimen now reaches around 40% of DS-TB patients – the highest uptake globally – while BPaLM regimens cover about 80% of eligible DR-TB patients. The country contributed the largest cohort to the regional OR study on mSTR. Integrated management of DR-TB and hepatitis C has been introduced in several regions.

Despite these gains, several challenges persist. Mortality remains the leading contributor to unfavorable treatment outcomes, driven largely by late diagnosis and advanced disease, particularly among people with HIV-associated TB. In line with the current Standards (Annex 33), systematic 12-month post-treatment follow-up has been introduced. However, this approach requires further strengthening and more consistent implementation, particularly for patients treated with BPaLM, alongside enhanced analysis of mortality and other unfavorable outcomes to inform corrective actions. In the draft amendments to the Standards, this approach has been expanded to cover all short treatment regimens, beyond BPaLM.

Finally, patient adherence support continues to rely heavily on donor funding for mobile teams, psychosocial services, and digital adherence technologies, underscoring the need to transition toward sustainable, domestically financed solutions.

Recommendations

No.	*Recommendation*	*Timeline*	*Implementer(s)*
1	Finalize and endorse the updated National TB Standard to incorporate the latest WHO recommendations on DR-TB treatment,	Short-term	MoH, CPH, regional TB services

	including newly recommended 6- and 9-month regimens. **[High priority]**		
2	Strengthen 12-month post-treatment follow-up for patients completing short TB and DR-TB regimens, particularly those treated with BPaLM, in line with WHO recommendations, to assess relapse and long-term outcomes. **[High priority]**	Short-term	CPH, regional TB services
3	Ensure timely initiation of TB and DR-TB treatment in the penitentiary sector by reducing delays and strengthening continuity of care between civilian and prison health services. **[High priority]**	Short-term	NTP, MOJ, penitentiary TB services
4	Conduct an analysis of unfavorable treatment outcomes to identify underlying causes and inform targeted measures to improve treatment success across all forms of TB. **[High priority]**	Short-term	CPH, National TB Institute, partners
5	Maintain and expand the use of short all-oral regimens for DR-TB (BPaLM, BDLLfxCfz) for the majority of patients, including those with or without confirmed fluoroquinolone resistance. Longer (18-month) regimens should remain limited to cases where short regimens are not feasible. **[High priority]**	Continuous	CPH, regional TB services
6	Continue programmatic use of the short 4-month HPMZ regimen for DS-TB, ensuring appropriate patient selection and weight-based dosing. **[High priority]**	Continuous	CPH, regional TB services
7	Continue aligning operational and clinical research priorities with the national TB research agenda, enabling coordinated implementation with partners and evidence-based decision-making. **[High priority]**	Continuous	NTP, National TB Institute, partners

* * *

Childhood TB

Background and policy framework on childhood TB

Between 2023 and 2024, the total number of new TB episodes among children aged 0-14 years decreased from 639 to 464 (a 27.4% reduction). In 2024, the incidence of TB among children under 15 years was 7.6 per 100,000 population, reversing the increasing trend observed between 2020 and 2023. A similar pattern was seen among adolescents (until 17 years of age). However, the proportion of childhood TB among all TB cases was 2.5% in 2024 – substantially below the expected 5-10% – suggesting possible underdiagnosis or underreporting. This proportion varied markedly across regions, from <1% to >10%.

Table 2. Notified new cases of TB among children aged 0-15 years

Indicator	*2023*		*2024*	
	N	*% of total*	*N*	*% of total*
New episode TB cases (0–14 y)	639	100.0	464	100.0
Bacteriologically confirmed	139	21.7	77	16.6
HIV-positive	24	3.8	18	3.9
With destruction (cavitary)	54	8.5	30	6.5
Extrapulmonary TB	188	29.4	105	22.6
Rif-resistant / MDR / pre-XDR / XDR TB	25	3.9	21	4.5

In 2019, Ukraine adopted the *State Strategy for HIV/AIDS, Tuberculosis, and Viral Hepatitis until 2030*, followed by the approval of the *State Strategy for the Development of Anti-Tuberculosis Care for the Population for 2024–2026* and its accompanying Action Plan. Both documents include dedicated sections on TB prevention and care for children and adolescents. Work is ongoing to develop the strategy for the next period (from 2027 onward).

The National TB Guidelines provide recommendations on TB prevention, diagnosis, and treatment in children and adolescents, which are aligned with current WHO guidance. A concise handbook on TB infection diagnosis and treatment was also developed for primary health care facilities to support implementation in the field. State and donor funding is available for all components of TB prevention and care in children and adolescents.

TB Prevention among children

BCG vaccination coverage increased from 83.5% in 2023 to 92.8% in 2024, approaching the WHO target of 95% (global average: 88%). Systematic TB screening among child contacts reached 97% coverage. Diagnosis of TB infection diagnosis relies primarily on the tuberculin skin test (TST), while IGRA testing is available in 23 regions through Centers for Disease Control and Prevention. In 2024, 319,001 TSTs were performed in children aged 0–14 years.

Coverage of contact investigation and preventive treatment among child household contacts of bacteriologically confirmed TB cases is high. Screening coverage exceeded 94% in both age groups under 15 years, and more than 91% of eligible children initiated preventive treatment, reflecting strong programmatic performance. However, the prevalence of active TB among child contacts remains substantial – 4.6% among children under five years of age and 3.1% among older children – highlighting the elevated risk of disease progression and underscoring the importance of continuing TB preventive treatment even in the absence of TB infection testing, in accordance with WHO recommendations and national policy.

Approximately 10% of identified child contacts did not start preventive treatment, partly due to the lack of available preventive regimens for contacts of pre-XDR and XDR-TB cases. Use of rifapentine-based shorter regimens (1HP and 3HP) remains very low (<4%), and nearly one-third of children (≈30%) continue to receive the traditional 6-month isoniazid regimen (6H). While 6H remains appropriate for

certain groups – such as children living with HIV – its widespread use suggests underutilization of shorter, more patient-friendly regimens. Given the higher efficacy and better adherence associated with the once-weekly 3HP regimen, scaling up access to rifapentine-based treatments remains an important priority. According to additional data from the NTP, during the first nine months of 2025, 44% of children under 14 years of age initiated TB preventive treatment with either 1HP or 3HP regimens. Overall, 77% of children received short-course regimens, while only 12% were treated with 6H.

Table 3. TB contact investigation and preventive treatment coverage by age group, 2024

	<5 years	***5–14 years***	***≥15 years***
Contacts of bacteriologically confirmed TB cases	1,255 (incl. 250 RR-TB)	727 (incl. 130 RR-TB)	44,499 (incl. 5,616 RR-TB)
Screened for TB	1,188 (94.6%)	687 (94.5%)	41,155 (92.5%)
Active TB detected	56 (4.6%) → 4,650 / 100,000	21 (3.1%) → 2,887 / 100,000	861 (2.1%) → 1,943 / 100,000
Started TB preventive treatment	1,079 *(86.0%)*	614 *(84.5%)*	32,565 *(79.4%)*
TPT regimen distribution (as % of those started TPT):			
– 1HP	0	3 *(0.5%)*	164 *(0.5%)*
– 3HP	35 *(3.2%)*	19 *(3.1%)*	1,170 *(3.6%)*
– 3HR	582 *(54.0%)*	322 *(52.4%)*	18,045 *(55.4%)*
– 4R	25 *(2.3%)*	19 *(3.1%)*	769 *(2.4%)*
– 6Lfx	78 *(7.2%)*	47 *(7.6%)*	3,708 *(11.4%)*
– 6H	352 *(32.6%)*	204 *(33.2%)*	8,709 *(26.8%)*
Total	**1,079 *(100.0%)***	**614 *(100.0%)***	**32,565 *(100.0%)***

* *Source*: Center of Public Health

TB diagnosis in children

The diagnostic algorithm for TB and MDR-TB in children and adolescents has been updated in line with WHO recommendations and now includes stool-based testing as a child-friendly diagnostic option.

The bacteriological confirmation rate among children aged 0-15 years remains low – 16.6% in 2024 compared to 21% in 2023. Several factors contribute to the low confirmation rate. Around 30% of childhood TB cases are extrapulmonary, typically diagnosed clinically or radiologically. Obtaining adequate respiratory specimens from children is technically challenging, and paucibacillary disease limits bacteriological confirmation. Finally, stool-based assays have lower sensitivity than those in respiratory samples.

The NTP continues efforts to improve bacteriological confirmation of TB among children. National policy now recommends testing at least two stool samples in children presumed to have TB to enhance diagnostic sensitivity. In addition, the concurrent collection and testing of two different specimen types in children – such as stool and sputum – is recommended to further increase rates of bacteriological confirmation.

Childhood TB treatment and support

Children and adolescents are treated with shorter regimens where appropriate. Overall treatment success for DS-TB in children has remained above 90% in recent years. Shorter DS-TB regimens, both with and without rifapentine, have been introduced. In 2024, among 393 children (0–17 years) with pulmonary or non-severe extrapulmonary TB, 100 (25%) received short-course regimens (including 10 with rifapentine). Treatment outcomes for shorter regimens were: treatment success 93.4%, loss to follow-up 1.3%, failure 2.8%, death 0.5%, continued treatment 2.0%.

Ukraine continues enrolling children who are not eligible for BPaL into the 9-month modified shorter treatment regimen (mSTR) for MDR-TB. To date, 196 children and adolescents have been enrolled (162 of them under 14 years), out of which 179 have completed treatment. Treatment success was 92.7%; failure 4.5%; loss to follow-up 2.8%. Two pregnant women were included – one had a successful outcome, and one failed treatment due to amplification of resistance. Between 2021–2023, 39 children with rifampicin-resistant TB were treated, with 95% success (37/39), one death and one loss to follow-up.

Children are not routinely hospitalized. Video-supported treatment is used for supervision. aDSM is applied for both DS-TB and DR-TB in children and adolescents. Policies permit children with TB to return to school after 2-3 weeks of treatment, once they are no longer infectious.

In 2024, international technical assistance projects provided support to the following activities aimed at improving treatment adherence among children with TB:

- Engagement of nannies, tutors or teachers for approximately 30% of children;
- Psychological support for children and/or families (50% of pediatric cases);
- Additional food packages tailored to individual needs (provided monthly).

These initiatives should continue and be scaled up, as they directly contribute to adherence and well-being.

Summary of achievements and challenges

Overall, Ukraine has made substantial progress in addressing childhood and adolescent TB, supported by strong policy foundations. Relevant national strategies include dedicated components for the prevention, diagnosis, and treatment of TB in children, and national guidelines are aligned with WHO recommendations. In 2024, the incidence of TB among children under 15 fell to 7.6 per 100,000, reversing the increasing trend observed during the previous four years, and the number of severe forms such as cavitary disease also declined.

BCG vaccination coverage improved, bringing the country close to the WHO target. Contact investigation performs exceptionally well, reaching 97% coverage, and more than 90% of eligible child contacts initiated preventive treatment.

Treatment outcomes remain strong, with success rates above 90% for both DS-TB and DR-TB in children, supported by the scale-up of shorter regimens. Pediatric TB cases are increasingly managed on an ambulatory basis, reflecting a child-friendly, community-based approach.

At the same time, high proportion of child contacts diagnosed with active TB disease – particularly among those under five years old, where the rate reaches 4.6% – remains an important challenge, indicating ongoing transmission and the need for strengthened prevention.

Access to shorter, child-friendly TB preventive treatment regimens should be expanded to reinforce early detection and follow-up among exposed children, particularly those at highest risk. Use of the WHO-recommended rifapentine-based preventive regimens, 3HP and 1HP, was limited in 2024, but coverage increased substantially in 2025.

Recommendations

No.	*Recommendation*	*Timeline*	*Implementer(s)*
1	Continue scaling up the use of shorter TPT regimens among children and adolescents, particularly 3HP. **[High priority]**	Continuous	CPH, regional TB centers
2	Continue scaling up the use of shorter DS-TB and DR-TB regimens for children and	Continuous High priority	CPH, regional TB centers

	adolescents in line with the WHO Consolidated Guidelines on Tuberculosis (Module 5 – Management of TB in children and adolescents). **[High priority]**		
3	Continue providing psychosocial support for children and adolescents with TB and include this component in the application for the next Global Fund grant (2027–2029). **[High priority]**	Continuous High priority	CCM, MoH, CPH, TGF

* * *

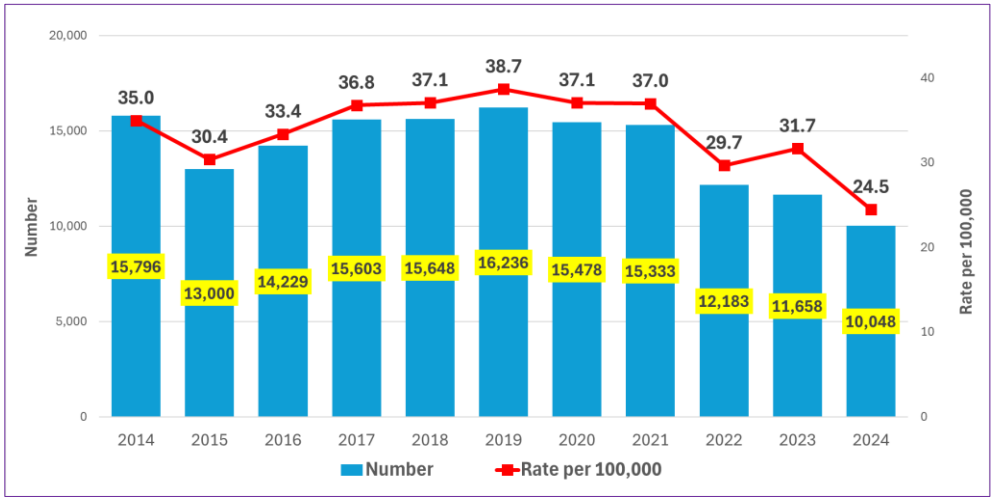
Management of TB/HIV and other comorbidities

Burden of HIV infection

Ukraine remains one of the most affected countries in Europe, with a high rate of HIV diagnoses, with estimated 15% of people with TB among incident cases.[16] It is estimated that 75% of people living with HIV (approximately 180,000 people) know their HIV status. Among those, 83% (around 150,000) are on ART, and of those on treatment, 93% (about 140,000) have achieved viral suppression.

New HIV diagnoses (newly enrolled in HIV care) and HIV notification rates have declined from 16,236 cases (38.7 per 100,000 population) in 2019 to 10,038 cases (24.5 per 100,000) in 2024, with the sharpest decrease observed after 2022 (**Figure 1**). Compared with pre-war levels in 2021, this represents a 34% reduction in the number of people newly diagnosed with HIV.

Figure 1. Trend in the number of people diagnosed with HIV (all ages) and rate per 100,000 population



Source: WHO Regional Office for Europe, European Centre for Disease Prevention and Control. HIV/AIDS surveillance in Europe 2024 (2023 data)

Ukraine remains among the top five countries in Europe with the highest proportion of late HIV diagnoses. In 2023, 61.5% of newly diagnosed PLHIV had a CD4 count <350 cells/mm^3, including 38.4% with advanced HIV infection (CD4 <200). While the acquired immunodeficiency syndrome (AIDS) diagnosis rate declined from 17.9 per 100,000 in 2019 to 9.1 per 100,000 in 2023, it remains the highest in the WHO European Region. TB is consistently among the three most common AIDS-defining illnesses. According to the Ukraine HIV Center, AIDS-related deaths decreased from 3,426 in 2019 to 1,474 in 2023.

Burden of TB/HIV co-infection

According to WHO Epidemiological Review data, the proportion of TB patients co-infected with HIV declined from 20.3% in 2021 to 15.3% in 2024 (**Figure 2**). Similarly, the proportion of PLHIV newly enrolled in HIV care who were diagnosed with TB decreased slightly, from 10-11% in 2020-2023 to 9% in 2024 (**Figure 3**). The TB/HIV burden varies widely by region: while the national average is 14.9 per 100,000 population, rates range from 33.8 per 100,000 in the most affected Odesa oblast, followed by 25 per 100,000 in Donetsk oblast, to below 10 per 100,000 in ten regions.

[16] WHO Global Tuberculosis Report 2025, https://www.who.int/teams/global-programme-on-tuberculosis-and-lung-health/tb-reports/global-tuberculosis-report-2025

Figure 2. Number and percent of HIV-positive cases among notified TB patients, Ukraine, 2017-2024

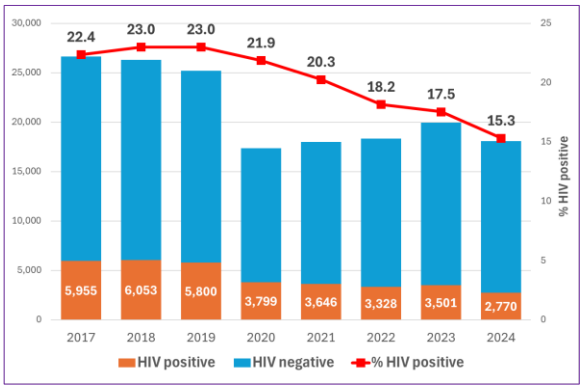
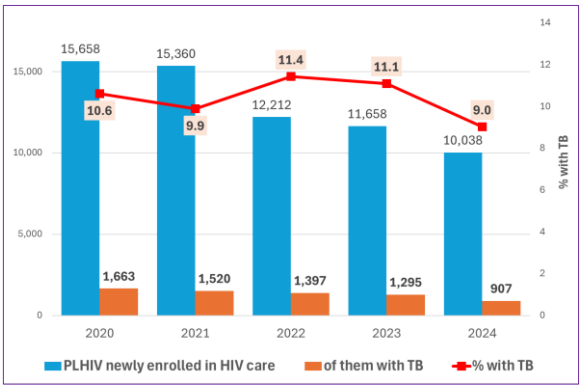


Figure 3. Number and percent of notified TB cases among PLHIV newly enrolled in HIV care, 2020-2024



Source: Center for Public Health

Although overall TB/HIV incidence is declining, pediatric TB/HIV remains a concern. Among TB patients aged 0-4 years, co-infection persisted at 5-6% during 2019-2022, highlighting the need to strengthen maternal and child health services, especially prevention of mother-to-child transmission (PMTCT) of HIV and early TB detection. Moreover, among children aged 5-14 and adolescents aged 15-17 years, TB/HIV prevalence increased between 2021 and 2022 (from 3% to 6% and from 0.6% to 3.5%, respectively), indicating gaps in HIV prevention, increased transmission among older children, and inequities in access to health care.

On a positive note, HIV testing coverage among TB patients is near universal (98.8%) (**Figure 4**). ART coverage among people with TB/HIV co-infection is also high, reaching 92.7% in 2024 (**Figure 5**).

Figure 4. HIV testing coverage among new TB cases, 2017-2024

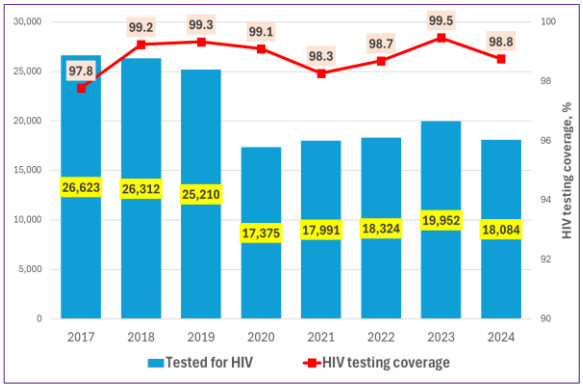
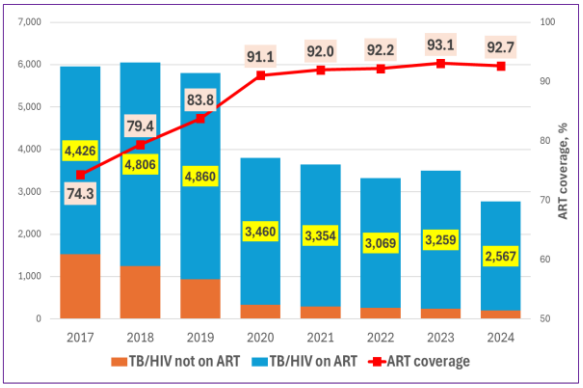


Figure 5. ART coverage among people with TB/HIV co-infection, 2017-2024



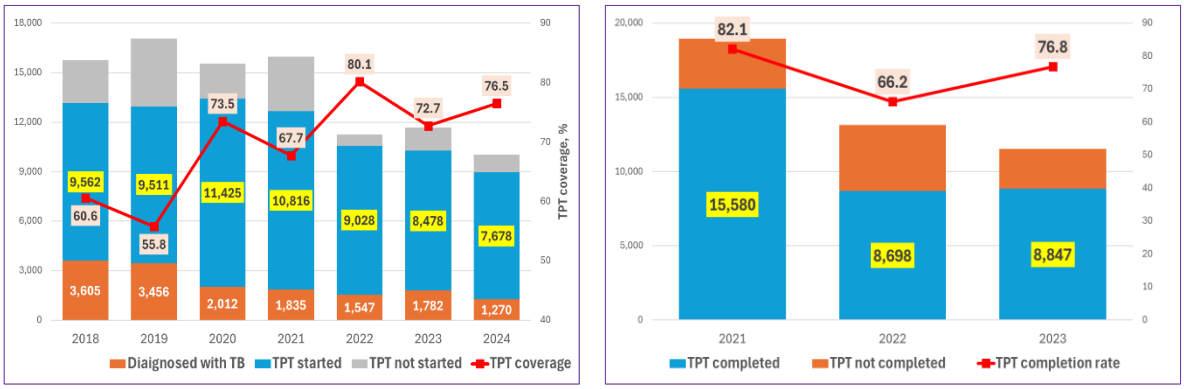
Source: Center for Public Health

Although HIV testing coverage among TB patients and antiretroviral therapy (ART) coverage among people with TB/HIV co-infection remain consistently high, mortality continues to be elevated, largely due to late presentation with advanced HIV disease and TB. Delayed initiation of ART is observed primarily among patients who die shortly after TB registration, underscoring the importance of earlier HIV diagnosis and timely linkage to care before the onset of TB.

Another achievement is the expansion of TPT coverage among PLHIV, which increased from 67.7% in 2021 to 76.5% in 2024 (**Figure 6**), with 90% coverage in the first half of 2025 (as communicated by CPH). However, TPT completion rates declined slightly from 82.1% in 2021 to 76.8% in 2023 (**Figure 7**).

Figure 6. Number of PLHIV newly enrolled into ART by TB diagnosis, TPT initiation and TPT coverage, 2018-2024

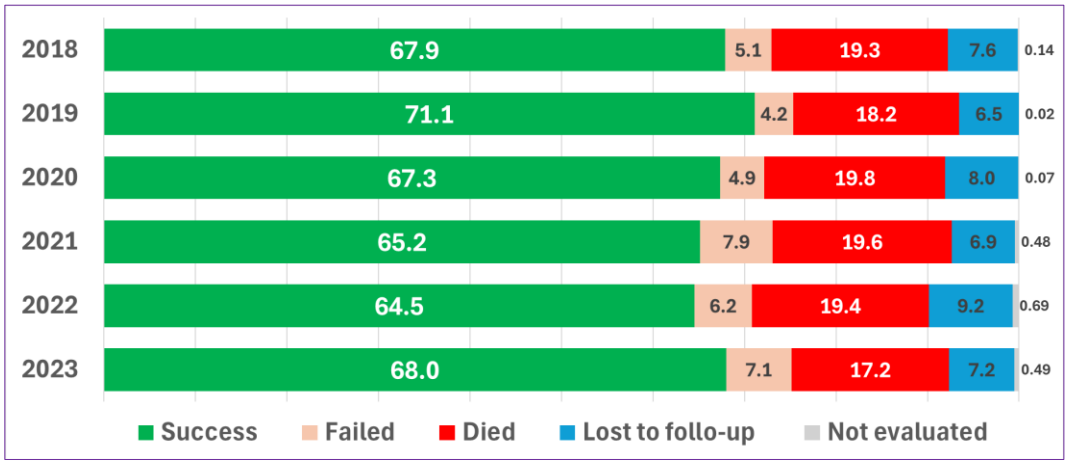
Figure 7. Number of PLHIV started TPT by TPT completion status, and TPT completion rate, 2021-2023



Source: Center for Public Health

Treatment outcomes for TB/HIV co-infected patients have slightly improved. Treatment success increased from 67.3% in 2020 to 68% in 2023, while mortality decreased from 19.8% to 17.2% (**Figure 8**). Nonetheless, patients with TB/HIV co-infection have the highest mortality during treatment (17.2%-19.4%), accounting for most unfavorable outcomes. By comparison, TB-related mortality was 9.6% among DS-TB patients (2023 cohort), 14.8% among RR/MDR-TB patients (2022), and 13.8% among XDR-TB patients (2022). These findings reinforce the need for earlier detection of both TB and HIV and timely initiation of treatment for both conditions.

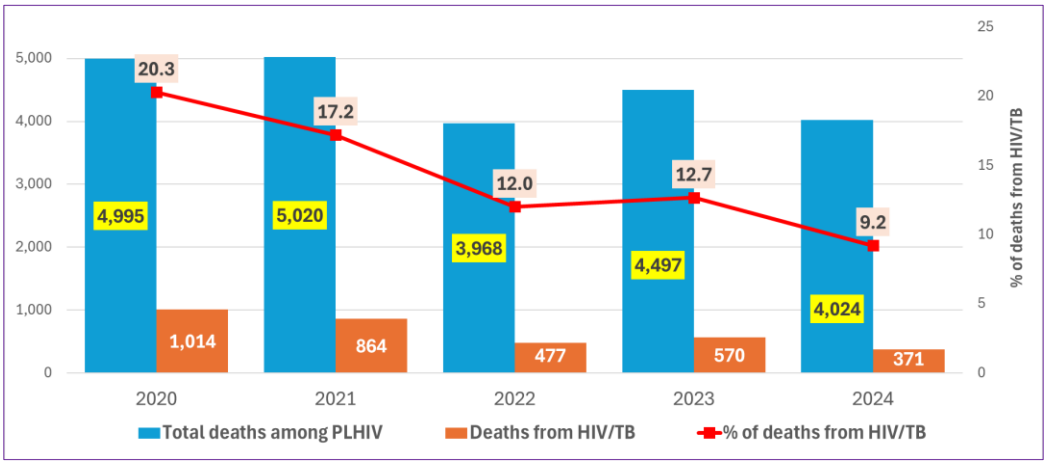
Figure 8. Treatment outcomes of new and relapse TB/HIV cases, 2018-2023 (in %)



Source: Center for Public Health

National data show a sharp decline in TB mortality among PLHIV – from 20.3% in 2020 to 9.2% in 2024 (**Figure 9**). However, WHO estimates indicate a different trend: TB deaths among PLHIV increased from 5 per 100,000 in 2021 to 9.8 per 100,000 in 2023, surpassing the rate among HIV-negative individuals (7 per 100,000) and accounting for 58% of all TB deaths. This highlights the urgent need to strengthen all steps of the HIV and TB care cascades, particularly early HIV diagnosis and timely ART initiation.

Figure 9. Number of deaths among PLHIV and TB/HIV mortality, 2020-2024



Source: CPH

Collaborative TB/HIV activities

Collaborative TB/HIV activities are primarily implemented by health-care professionals within the TB and HIV programmes, with the involvement of non-governmental organizations that support outreach, patient navigation, and adherence among key and vulnerable populations.

Policy, strategy, coordination and monitoring of TB/HIV collaborative activities

Ukraine has established strong integration of HIV, TB and viral hepatitis (VH) responses at the strategic level through joint programming. The *'State Strategy in the field of combating HIV/AIDS, tuberculosis and viral hepatitis for the period until 2030'*[17] defines strategic goals, operational objectives and priority interventions across the three disease areas.

- HIV/AIDS. Interventions aim to reduce HIV incidence among people with TB by ensuring universal HIV testing for all TB patients, expanding access to TPT for PLHIV, and promoting TPT uptake.
- TB. Interventions focus on reducing the TB burden among PLHIV through systematic screening and active case finding, with participation from the non-governmental sector.
- Viral hepatitis. Interventions prioritize expanding access to screening and diagnosis through the decentralization of services, integrating hepatitis testing with HIV and TB services, and linking with narcological and obstetric care.

The *'Strategy for the development of the system of anti-tuberculosis medical care for the population (2024–2026)'* [18] further emphasizes the transition to an integrated, people-centered model of public health services.

Screening procedures are defined in the *'Procedure for organizing the detection and diagnosis of tuberculosis and latent tuberculosis infection'*,[19] which requires TB, HIV and hepatitis screening for all persons presenting with TB symptoms. The management of HIV infection and other co-morbidities in TB patients is regulated by the *Standards on TB Medical Care (Standard V)*[20], while the *Standards on HIV Infection Care*[21] define TB and co-morbidity management for PLHIV. Both sets of standards are aligned with WHO recommendations.

[17] National strategy on HIV/AIDS, TB and VHs 2030
[18] On the approval of the Development Strategy... | dated 02.08.2024 No. 726-r
[19] On Approval of the Procedure for Organizing... | dated 16.02.2022 No. 302
[20] Standards on TB Medical Care.pdf
[21] Standard of Medical Care in HIV. MoH. 2022 2022_2092_1465_smd_vyl.pdf (dec.gov.ua)

At the national level, coordination of TB and HIV programmes is overseen by the National Council on TB and HIV/AIDS, which serves as the central coordination body. Regional Councils operate in all 25 regions, bringing together TB, HIV and hepatitis specialists, local authorities and representatives of communities and civil society.

Systematic TB/HIV collaborative activities are coordinated at national and regional levels through joint planning, technical consultations and harmonization of guidelines and protocols. At the service-delivery level, collaborative activities include:

- HIV counselling and testing for all TB patients
- Routine TB screening for PLHIV
- Provision of ART to people with TB/HIV co-infection
- Regular data exchange and integration of monitoring and reporting systems
- Implementation and coordination of targeted interventions among key populations

However, despite the existence of national and regional coordination bodies, programmatic management of TB/HIV collaborative activities is described across multiple national standards and MoH decrees, leading to fragmentation. This was also noted in the findings of the previous TB Programme Review. The country would benefit from the development of a single comprehensive standard that:

- clearly defines the roles and responsibilities of TB and HIV programmes, PHC and civil society organizations in delivering integrated services;
- outlines the model for integrated, people-centered care; and
- specifies mechanisms for monitoring, evaluation and data exchange.

Since the previous Programme review in 2022, Ukraine has successfully integrated TB and HIV surveillance into a unified case-based electronic database, with dedicated modules for TB, HIV and TB/HIV co-infection. Access to co-infection data is granted to TB specialists and infectious disease specialists only with patient consent, and the system is cross-checked by both programmes on a quarterly basis, in line with WHO recommendations.

Reducing the burden of HIV among TB patients (HIV-testing, diagnosis, and ART)

HIV service provision in Ukraine has been decentralized since 2020 and is integrated across multiple levels of the health system, including PHC, TB services (phthisiopulmonology centers), inpatient care (multidisciplinary and infectious disease hospitals), outpatient mobile clinics, maternal and child health services and narcological services. HIV testing is primarily provider-initiated and conducted by trained professionals, with pre- and post-test counselling included as part of the core PHC package, reflecting the integration of HIV testing into routine care.

Additional HIV testing modalities include assisted self-testing, testing provided by NGOs, and index testing of partners and close contacts. HIV testing is free of charge under the State Programme of Medical Guarantees, and mainly follows a three-step rapid testing algorithm, with alternative pathways involving initial screening at different health services followed by referral for confirmatory testing.

Target populations for HIV testing include pregnant women receiving antenatal care, key and vulnerable populations (such as TB patients), individuals at increased risk of sexually transmitted HIV, patients presenting with signs or symptoms potentially linked to HIV, and those who request testing or who self-test. HIV testing is offered to all people with TB, presumptive TB, household and close contacts of TB cases, and household contacts of PLHIV.

People with TB/HIV co-infection also have access to other HIV care services, including screening and treatment for sexually transmitted infections and viral hepatitis, provided by multidisciplinary teams that also coordinate ART, opioid substitution therapy (OST) and management of potential drug–drug interactions.

ART provision in Ukraine is decentralized, provided free of charge, and largely supported by international donors. ART may be prescribed by any physician who has completed the required training, including infectious disease specialists, family doctors, and TB physicians. In practice, ART is most commonly initiated by infectious disease specialists at designated ART sites and subsequently followed up by family doctors.

The war has disrupted service delivery at some sites, with several ART facilities destroyed or damaged; however, ART services continue to be delivered nationwide through adapted service delivery models. Although staffing shortages affect a limited number of ART sites, continuity of care has been maintained through workload redistribution, task sharing, and referral mechanisms.

ART initiation in PLHIV with TB:

- Active TB (excluding central nervous system disease): ART is initiated on the same day HIV is confirmed.
- TB treatment (including DR-TB): ART starts within 2 weeks of initiating TB treatment, regardless of CD4 cell count.
- TB meningitis: ART starts 4–8 weeks after TB treatment initiation.
- If both treatments are pending, TB treatment is initiated first, followed by ART within 2 weeks.

Drug–drug interactions (e.g., involving rifampicin, rifapentine, bedaquiline and antiretrovirals) are co-managed by TB and infectious disease specialists and are addressed in the national TB Care Standards.

Cotrimoxazole preventive therapy is administered in all people with TB/HIV (sulfamethoxazole + trimethoprim 960 mg daily), regardless of CD4 count.

Reducing the burden of TB among PLHIV

According to national TB and HIV strategies and standards, all adults and children aged 10 years and older living with HIV should undergo systematic TB symptom screening at each scheduled health care visit.

- Outpatient care: Screening is conducted by the attending doctor using a standardized questionnaire and chest X-ray. If screening is positive, patients are referred to TB facilities for confirmatory testing.
- Inpatient care: During hospitalization, all PLHIV are screened using Xpert MTB/RIF Ultra as the primary diagnostic tool;
- Children under 10 years: A symptom-based algorithm is applied for early detection.

For PLHIV not yet on ART, TB screening is linked to HIV care and ART initiation. HIV-positive pregnant women are offered TB screening alongside their partners.

PLHIV with advanced HIV disease (CD4 <100 cells/mm³ or CD4 undetectable) undergo LF-LAM testing, followed by Xpert MTB/RIF Ultra if the LF-LAM result is negative, to exclude active TB disease. PLHIV with CD4 >100 cells/mm³ are not eligible for LF-LAM testing, while WHO recommends using LF-LAM in PLHIV with CD4 <200 cells/mm³ in inpatient settings and in those with CD4 <100 cells/mm³ – in outpatient settings.

TB preventive treatment. All PLHIV should receive at least one course of TPT in their lifetime, regardless of immune status. For PLHIV in contact with RR-MDR/TB patients, TPT is prescribed after individual risk assessment when TB infection is confirmed. In PMTCT settings where nevirapine is used, rifamycin-containing regimens are avoided, and treatment is co-managed with a TB specialist. PLHIV with positive or unknown TBI test result (TST or IGRA) and no TB symptoms should receive TPT, irrespective of ART status.

TPT is prescribed by infectious disease specialists or family physicians and monitored via the national electronic surveillance system, which records both initiation and completion. Available regimens

include 6H, 3HP, 4R and 1HP. In the first half of 2025, 35% of eligible PLHIV received 3HP, 30% received 6H, 11% received 1HP, while 24% were not prescribed TPT.

Mobile outpatient clinics

Ukraine has introduced an innovative, people-centered model of care through mobile outpatient clinics, designed to expand access to HIV, TB, viral hepatitis, OST and other essential health services. These clinics, operated under the Programme of Medical Guarantees and supported by the Global Fund project, represent an important step towards integrated service delivery.

Mobile clinics are served by multidisciplinary teams (MDTs) consisting of a TB or PHC doctor and/or nurse, a social worker and, often, a psychologist. They provide a broad range of preventive, counselling and testing, and treatment services for HIV, TB and hepatitis. MDTs are also tasked with strengthening linkages to care, treatment monitoring and adherence support.

Mobile clinics are particularly valuable for reaching remote and hard-to-reach populations and areas where medical infrastructure has been damaged. They currently operate across 18 regions, with a pilot expansion to 19 mobile ambulatories planned for 2024–2025, supported by TGF. The long-term vision is to transition the financing of these mobile services to the National Health Service of Ukraine (NHSU) under a new PMG package, thus ensuring sustainability and expanding coverage.

Mobile clinics play a key role in maintaining uninterrupted access to health services during the war, when transport barriers, health worker shortages, damaged facilities and limited pharmacy access hinder care. They contribute to integrated HIV and TB detection models, strengthening service delivery to high-risk groups and improving programme coverage. However, sustainability and long-term financing remain uncertain, as implementation currently relies on donor support.

Capacity building

The country actively uses the online training platform for health workers hosted by the Center of Public Health.[22] At the time of the Review, it offered 10 online courses on TB (3) and HIV (7). Courses on viral hepatitis were under revision. The platform also provides additional online resources, including WHO courses translated in Ukrainian language. This approach is particularly valuable in the context of war, when organizing in-person training is challenging.

Management of TB and other comorbidities

In Ukraine, the management of TB comorbidities is integrated into national TB services, with systematic screening and tailored interventions.

Burden

According to the International Diabetes Federation, the prevalence of diabetes among adults aged 20-79 years in Ukraine is 8%, with an estimated 36.9% of cases undiagnosed. An estimated 5% of the population is infected with hepatitis C virus, while 1.5% live with chronic hepatitis B virus.

Ukraine ratified the WHO Framework Convention on Tobacco Control in 2006 and has since implemented strong tobacco control measures (smoke-free laws, advertising bans, graphic health warnings, flavor restrictions and excise tax increases), leading to a 20% reduction in smoking since 2010.[23] In 2024, adult tobacco use fell to 22.6% (from 26.7% in 2023). However, 38% of adults reported increased tobacco/nicotine use since the start of the war in 2022, including 19.2% with significant increases, reflecting war-related stress.[24]

[22] https://portal.phc.org.ua/en/view_all_courses/

[23] https://www.who.int/europe/news/item/27-04-2020-ukraine-new-who-report-shows-need-for-comprehensive-approach-to-tobacco-control?utm_source=chatgpt.com

[24] https://www.who.int/europe/publications/m/item/tobacco-and-nicotine-product-use-among-adults-in-ukraine---findings-from-a-sociological-survey-among-adults-aged-18-years-and-over---comparative-analysis-of-the-2023-and-2024-survey-rounds

Ukraine's Global Hunger Index in 2023 was 8.2 (low), improved from 13 in 2000 and below the global average (18.3). Undernourishment remains low (<2.5–4.8%), though the war has placed pressure on food security through reduced production, higher costs and disrupted storage and transport.

Assessment and treatment of comorbidities in patients with TB

Assessment of comorbidities and risk factors (including diabetes, alcohol and drug use disorders, nutritional status, living conditions and social risks), followed by counselling (e.g., tobacco cessation), is conducted by TB doctors or family doctors, with involvement of other specialists as needed.

In 2024, the national information system reported that 11.4% of TB patients had alcohol use disorders, 22.6% were smokers, 2% were living with viral hepatitis B or C, and 1.9% were registered drug users. Nutritional status is assessed for almost all TB patients; in 2024, 6% of new and relapse TB cases had severe acute malnutrition.[25] Data on the prevalence of diabetes among TB patients are currently not available.

Treatment for identified comorbid conditions is prescribed by the relevant specialist, and clinical follow-up is provided by TB specialists or family doctors, depending on the treatment setting. Regional TB centers employ a range of specialists (infectious disease doctors, internists, narcologists, etc.), enabling person-centered multidisciplinary care. If a required specialist is not available on site, inpatient facilities may invite the specialist for consultation; outpatients are referred to the appropriate specialist by the attending physician.

Screening and diagnostic tools

TB centers are equipped with screening and diagnostic tools relevant to comorbidity management, including screening questionnaires, height/weight measurement equipment, scales, diabetes test strips and screening tools for mental health and substance use. Diabetes screening is based on capillary or venous blood glucose measurement; test strips are available at PHC level.

Availability of medicines and supplies

The state programme 'Affordable Medicines' has substantially expanded access to diabetes medicines and devices: in 2023, the state budget allocated UAH 4.7 billion for insulin reimbursement, and since 2023 the programme has also covered immunosuppressants and test strips for insulin-dependent patients. As of December 2024, the programme covered 55 medicines for type 2 diabetes, 4 medicines for diabetes insipidus, 63 insulin products and 45 medical devices (test strips), available free of charge or with partial co-payment.

OST provision is integrated into the broader package of services for people with TB who use drugs and is currently provided in adequate quantities. However, long-term sustainability requires increased domestic financing.

Nutritional support and incentives

Nutritional supplements and food kits are provided in line with the nutritional standards for TB centers and related hospital departments, approved by the Cabinet of Ministers' Resolution No. 571 in May 2024. Part of medical and psychosocial support services (MPSS) programme, incentives (grocery sets or vouchers/certificates) are also provided to support adherence and recovery.

Monitoring and surveillance

Information on HIV, viral hepatitis, alcohol and drug use, and body mass index among TB patients is captured in the National Information System for Monitoring Socially Significant Diseases. This unified electronic system consolidates data on TB, HIV, OST and co-infections, improving case tracking, reducing duplication, facilitating stock management, and supporting cascade-of-care monitoring.

[25] Data from National Information System provided by CPH

Summary of achievements and challenges

Ukraine has built a strong and comprehensive framework for managing TB/HIV co-infection and other comorbidities, underpinned by integrated national strategies for HIV, TB and viral hepatitis that extend to 2030. Strategic and operational coordination is well established through the National Council on TB and HIV/AIDS and Regional Councils across the regions, which facilitate multisectoral collaboration and alignment with WHO guidance.

Discrepancies between national notifications and WHO modelled estimates should be interpreted with caution in the context of ongoing war-related population displacement. High coverage of HIV testing among TB patients and ART coverage among people with TB/HIV co-infection suggest that differences between reported data and estimates warrant close, dynamic monitoring rather than simple attribution to under-detection.

Clinical management of TB/HIV is robust: HIV testing among TB patients is nearly universal (98.8% in 2024), ART coverage for co-infected patients is high (92.7%), and TPT coverage among PLHIV has expanded markedly, reaching 84% in 2024 and 90% in early 2025, with increasing uptake of shorter regimens such as 3HP and 1HP. These advances have contributed to gradual improvements in TB/HIV treatment outcomes and declining national reports of TB mortality among PLHIV.

HIV testing and ART delivery are decentralized, available across PHC, TB centers, hospitals, mobile clinics and maternal and child health services, ensuring access even in hard-to-reach areas. The deployment of mobile outpatient clinics in 18 regions has further strengthened integrated service delivery for HIV, TB, OST and hepatitis – particularly valuable during wartime disruptions.

The slight decline in TPT completion rates observed in recent years may partly reflect war-related disruptions—including displacement, interrupted follow-up, and insecurity—rather than reduced acceptability of or adherence to preventive treatment.

Capacity building continues through online training platforms, while TB services have formalized person-centered management of comorbidities, offering systematic screening, expanded access to diabetes medicines, OST provision and nutritional support for TB patients.

Despite these achievements, significant challenges undermine the full effectiveness of TB/HIV collaborative activities. A major concern is the large discrepancy between national notifications and WHO estimates: modelling suggests that the true burden of TB/HIV co-infection is more than double the number of cases reported, pointing to substantial underdiagnosis and underreporting.

Similarly, WHO estimates show rising TB mortality among PLHIV—now accounting for 58% of all TB deaths – despite national surveillance suggesting the opposite trend. These inconsistencies reflect persistent gaps in early HIV diagnosis, late presentation (with 61.5% of new HIV diagnoses occurring at CD4 <350), incomplete ART coverage in the broader HIV population and continued delays in TB detection.

Wartime disruptions – destroyed or inaccessible ART sites, shortages of health personnel, population displacement and reduced access to HIV and TB testing in areas outside government control – exacerbate service gaps. Programme management remains fragmented across multiple regulations and standards, complicating coordination and implementation. TPT completion rates have declined slightly, indicating barriers to adherence and follow-up.

Management of other comorbidities faces limitations due to the high prevalence of behavioral and clinical risk factors (alcohol use, smoking, viral hepatitis, drug use), reliance on donor funding for OST and psycho-social support, and uneven availability of specialists.

These challenges highlight the need to strengthen all steps of both HIV and TB care cascades – particularly early diagnosis, rapid linkage to treatment and continuity of care – to meaningfully reduce TB/HIV mortality and the overall burden of co-infection in the country.

Recommendations

No.	*Recommendation*	*Timeline*	*Implementer(s)*
1	Strengthen and further consolidate early HIV diagnosis, rapid ART initiation, and timely TB detection to reduce mortality among people with TB/HIV co-infection, particularly through earlier presentation and improved linkage to care. **[High priority]**	Short-term	CPH, HIV center
2	Ensure continued implementation of LF-LAM testing for PLHIV with advanced immunosuppression, in line with national standards and WHO recommendations. **[High priority]**	Short-term	CPH, HIV center
3	Scale up integrated TB–comorbidity care packages at primary and specialized levels, including systematic screening and early management of alcohol and tobacco use disorders, diabetes, viral hepatitis, and malnutrition, and ensure sustainable access to OST and nutritional support through domestic financing mechanisms. **[High priority]**	Medium-term / long-term	CPH, in collaboration with relevant programmes

* * *

TB in migrants and prisoners

Refugees and internally displaced people

The Russian military invasion triggered one of the most significant displacement and humanitarian crises in Europe, resulting in massive movements within Ukraine and abroad. According to UNHCR,[26] as of 02 September 2025, a total of 5,698,470 Ukrainian refugees were recorded globally (5,137,910 across Europe and 560,560 outside Europe). Within Ukraine, an estimated 3.7 million people remained internally displaced.

The large-scale movement of refugees has raised concerns regarding potential TB transmission within Europe. In 34 reporting countries, TB notifications among people born in Ukraine increased from 207 cases in 2021 to 887 in 2022, a 4.3-fold rise.[27] [28] [29]

The European Union's Temporary Protection Directive (July 2024)[30] and national protection schemes have provided a structured legal basis for the reception, protection, and integration of refugees, including access to health services[31]. Based on WHO's estimates of TB service needs in host countries, WHO/EURO facilitated communication between European TB programmes and Ukraine's National TB Programme to maintain continuity of care, including the transfer of clinical information for patients who provided consent. In April 2022, ECDC and WHO/Europe issued an information note advising against universal testing or screening for TB among refugees arriving from Ukraine, but indicating that testing and screening may be appropriate for specific high-risk groups, such as close contacts of bacteriologically confirmed TB cases and people living with HIV.[32]

According to information captured by other UN agencies, including UNHCR and IOM, outward migration has slowed over the past two years, and some refugees have begun to return. The MoH/NTP has established an effective system to support individuals intending to migrate. The NTP maintains active communication channels with health authorities in 40 countries, enabling rapid exchange of TB-related information. Requests from European countries are received one to two times per month via the International Health Regulations mechanism, usually concerning previous TB history, treatment regimens, or contact investigations.

The NTP provides instructions and updated information for IDPs and migrants on where to register for TB care in new locations and how to continue TB treatment abroad.[33] MoH also maintains a publicly available guide summarizing entitlements to medical care for migrants across nearly all European countries. In addition, migrants are referred to the WHO-supported directory www.testfinder.info, which lists TB, HIV, hepatitis, STI, ART, OST, and TB treatment service providers in host countries.

Population displacement within Ukraine remains highly dynamic and geographically variable. The Law of Ukraine *'On ensuring the rights and freedoms of internally displaced persons'*[34] guarantees free access to a comprehensive package of health care services for IDPs.

According to the CPH 2024 report on screening among IDPs, 4,360,325 IDPs were registered, of whom 60,556 were living in temporary accommodation. Of 5,864 individuals identified as presumptive TB

[26] https://data.unhcr.org/en/situations/ukraine
[27] ECDC-WHO/EURO, TB Surveillance and Response Monitoring Report 2025
[28] Stoycheva K, Cristea V, Ködmön C, et al. Tuberculosis in people of Ukrainian origin in the European Union and the European Economic Area, 2019 to 2022. Euro Surveill. 2024;29(12):2400094. doi:10.2807/1560-7917.ES.2024.29.12.2400094
[29] G de Ries at all. IJTLD Open. 2024 Apr 1;1(4):166–173. https://pmc.ncbi.nlm.nih.gov/articles/PMC11231824/
[30] https://www.europarl.europa.eu/RegData/etudes/BRIE/2024/762373/EPRS_BRI(2024)762373_EN.pdf
[31] Testing for tuberculosis infection and screening for tuberculosis disease among refugees arriving in European countries from Ukraine. Stockholm: European Centre for Disease Prevention and Control / World Health Organization Regional Office for Europe. https://www.ecdc.europa.eu/en/publications-data/testing-tuberculosis-infection-and-screening-tuberculosis-disease-among-displaced
[32] Menezes D, t al. Country differences and determinants of yield in programmatic migrant TB screening in four European countries. Int J Tuberc Lung Dis 2022; 26(10):942–948. https://pmc.ncbi.nlm.nih.gov/articles/PMC7615138/
[33] https://phc.org.ua/kontrol-zakhvoryuvan/tuberkuloz/dlya-pacientiv-z-tuberkulozom
[34] https://zakon.rada.gov.ua/laws/show/1706-18#Text

cases through screening, 5,175 people (88%) received further diagnostic testing, and 523 were confirmed with TB.

To mitigate the effects of the war on TB service delivery, the Alliance for Public Health (APH) expanded active case-finding activities to additional regions, partnering with local NGOs. Activities include symptom-based screening, patient navigation from diagnosis to treatment initiation, and adapted outreach strategies for high-risk groups in war-affected settings (e.g., operations in shelters, underground locations during shelling, and use of protective equipment). According to APH, among IDPs and other marginalized groups, these interventions resulted in a two-fold or greater increase in TB detection in 2023 compared with pre-war 2021 levels.

Before 2024, APH worked with seven vulnerable groups (homeless individuals, ex-prisoners, Roma communities, IDPs, poor rural/urban households and their children, and people who use drugs). Due to funding limitations, activities in 2024 focused on four groups (homeless, ex-prisoners, Roma, and IDPs). In 2024, 50,132 people were screened and 607 TB cases were diagnosed.

Table 4. Number of diagnosed TB cases and numbers needed to screen (NNS), within APH projects 2021-2023

Risk group	***2021***		***2022***		***2023***	
	TB cases	*NNS*[35]	*TB cases*	*NNS*	*TB cases*	*NNS*
Homeless	134	26	196	24	66	23
Roma population	110	35	113	36	135	42
IDP	13	218	25	206	78	134
Poor rural and urban population	181	58	209	57	318	47
Drug users	179	20	144	19	97	20
Military	n/a	n/a	n/a	n/a	80	211

NGO 100%Life

During the field visit, the evaluation team visited a shelter for IDPs in Lviv managed by the NGO "100% Life". The renovated, well-equipped facility houses 40 IDPs, including families with children. The NGO maintains close coordination with the regional TB center. All new residents are screened for TB, with prompt referral for further evaluation when needed.

Over the past three years, approximately 4,000 residents were screened, and 10 cases of TB were diagnosed and treated. Residents expressed high satisfaction with the support provided, including meals, clothing, and social assistance.

Prisons

TB care for people in custody in Ukraine is governed by a comprehensive legislation, including key general health legislation and sector-specific Laws such as 'On Pre-trial detention'[36], "On the State Penitentiary Service of Ukraine'[37] , 'On the National Guard of Ukraine'[38], and 'On the National Police'[39]. These laws are operationalized by the *'Procedure for providing medical care to people suffering from tuberculosis among those taken into custody or held in penal institutions'*, endorsed by the Decree of the Cabinet of Ministers of Ukraine No. 802 from 09 July 2024[40].

As of September 2025, the penitentiary system held approximately 35,000 people across 62 facilities, including 25 pre-trial detention centers. Of these, 23 have medical departments and 4 function as specialized TB hospitals. The Medical Department operates as an independent unit but coordinates

[35] Number needed to screen (NNS): number of persons that should be examined to diagnose 1 TB case
[36] https://zakon.rada.gov.ua/laws/show/3352-12#Text
[37] https://zakon.rada.gov.ua/laws/show/3352-12#Text
[38] https://zakon.rada.gov.ua/laws/show/876-18
[39] https://zakon.rada.gov.ua/laws/show/580-19#Text
[40] https://zakon.rada.gov.ua/laws/show/802-2024-%D0%BF#Text

closely with custodial authorities. Over the past two years, severe funding shortages – government funding covers only 3-4% of needs – have made the system nearly fully reliant on external support.

Mandatory preventive medical examinations for TB detection in detainees are regulated by MoH, MoJ, and the Ministry of Internal Affairs. All institutions perform TB screening using clinical questionnaires and chest radiography. National guidance guarantees access to screening, diagnosis, and treatment in police detention as well.

Detainees in pre-trial centers (commonly called 'SIZO') with confirmed TB receive care in inpatient units of the penitentiary health system. Prisoners in minimum-security colonies may, in principle, be referred to regional TB centers; however, security and logistical barriers limit prolonged hospitalization in civilian facilities. Most patients requiring specialized care must therefore be transferred to designated penitentiary TB hospitals. Transfers often require four weeks or more, resulting in significant delays in treatment initiation.

The penitentiary system has 28 GeneXpert instruments and 24 microscopy laboratories. External quality control follows a tiered system: first-level TB laboratories are supervised by regional TB centers in the civilian sector, and prison TB hospitals are supervised by the National Reference Laboratory.

The Government's TB service development strategy for 2024-2026[41] sets targets to expand internationally accredited TB laboratories within the penitentiary system: 3 in 2024, 13 in 2025, and 31 in 2026.

All detainees undergo X-ray screening at entry and at least once a year thereafter. In 2024, 37,026 persons were screened (2023: 45,654). The number of TB cases in the penitentiary system decreased from 654 in 2020 to 437 in 2024 (**Помилка! Джерело посилання не знайдено.**).

Table 5. Number of DS-TB and DR-TB cases in the penitentiary system, 2020-2024

Year	*DS-TB*	*DR-TB*	*Total*
2020	396	258	**654**
2021	454	187	**641**
2022	276	133	**409**
2023	437	143	**580**
2024	289	148	**437**

Treatment outcomes in prisons remain variable (Помилка! Джерело посилання не знайдено. below). Treatment success among new and relapse DS-TB cases ranged from 47.9% in 2016 treatment cohort to 77.5% in 2020, and reached 67.5% in 2023. Among MDR-TB patients, treatment success increased from 39% in 2020 cohort to 57% in 2022 cohort. Persistent challenges include treatment failure, loss to follow-up, and mortality, underscoring the need for improved infection control, early diagnosis, uninterrupted treatment, and strengthened laboratory capacity. Penitentiary clinicians routinely use short all-oral regimens for MDR-TB in line with national guidelines (see more detail under section 'Treatment of people with TB' above).

[41] https://zakon.rada.gov.ua/laws/show/726-2024-%D1%80#Text

Table 6. Treatment outcomes of new and relapse TB cases enrolled in DS-TB treatment in the penitentiary system, 2013-2023 cohorts

Year	*Total cohort*	*Treatment success*	*Failure*	*Death*	*LTFU*	*Not evaluated*
2013	1,710	**1,034 / 60.5%**	209 / 12.2%	78 / 4.6%	3 / 0.2%	386 / 22.6%
2014	1,024	**620 / 60.5%**	88 / 8.6%	28 / 2.7%	62 / 6.1%	226 / 22.1
2015	877	**645 / 73.5%**	136 / 15.5%	24 / 2,7%	60 / 6.8%	12 / 1.4%
2016	997	**478 / 47.9%**	434 / 43.5%	28 / 2.8%	48 / 4.8%	9 / 0.9%
2017	567	**433 / 76.4%**	48 / 8.5%	30 / 5.3%	46 / 8.1%	10 / 1.8%
2018	475	**361 / 76.0%**	46 / 9.7%	20 / 4.2%	46 / 9.7%	2 / 0.4%
2019	453	**343 / 75.7%**	34 / 7.5%	26 / 5.7%	50 / 11.0%	0
2020	396	**307 / 77.5%**	31 / 7.8%	15 / 3.8%	43 / 10.9%	0
2021	454	**305 / 67.2%**	59 / 13.0%	17 / 3.7%	39 / 8,6%	34 / 7.5%
2022	276	**169 / 61.2%**	26 / 9.4%	25 / 9.1%	20 / 7.2%	36 / 13.0%
2023	437	**295 / 67.5%**	67 / 15.3%	13 / 3.0%	52 / 11.9%	10 / 2.3%

Contact investigation and TPT have improved substantially. In 2021, 478 contacts initiated TPT; by 2024 this increased to 1,350 out of 1,565 eligible detainees (86.3%), all receiving the 1HP regimen.

NGOs including APH, 100%Life and Free Zone provide psychosocial support to prisoners and help ensure continuity of TB treatment after release.

Findings during the field visit

During the field visit to the penitentiary colony in Zhytomyr (approximately 1,000 inmates), the evaluation team observed that although a medical unit exists with designated space for TB patients, initiation of TB treatment cannot occur on-site due to penitentiary regulations. One detained individual was awaiting transfer to the Kharkiv TB hospital; however, this process – via Kyiv pre-trial detention center (SIZO) – typically takes 4–5 weeks. During this delay, the patient remains untreated, increasing the risk of deterioration and transmission. Although the colony employs a medical doctor with strong TB expertise, regulations prevent initiation of treatment.

The evaluation team recommended enabling treatment initiation within selected penitentiary colonies to prevent avoidable delays and reduce the likelihood of severe outcomes.

Summary of achievements and challenges

The Center of Public Health / MoH maintain active communication with health authorities in 40 countries, ensuring rapid and accurate exchange of information for individuals diagnosed with or previously treated for TB. Clear guidance is provided to IDPs and migrants on where and how to register for TB services in new locations within Ukraine or abroad, helping to preserve continuity of care during displacement.

Within the penitentiary system, strong entry screening procedures and infection control measures are in place, including systematic separation of infectious individuals. TB treatment in prisons follows the most recent WHO recommendations, with widespread use of shorter all-oral regimens and delivery of TB preventive treatment. Staff are appropriately trained, and clinical practices align with international standards.

Despite this progress, several challenges continue to limit the effectiveness and reach of TB services for these vulnerable groups. NGOs play an essential role in screening IDPs and other at-risk populations, yet their coverage remains restricted by funding limitations, leaving large numbers of people unreached.

The penitentiary system faces acute funding shortages, with government funds covering only a small fraction of operational needs, resulting in heavy reliance on external donors for service provision.

Structural barriers within the penitentiary sector lead to long delays in treatment initiation: individuals diagnosed with TB in general colonies often wait four weeks or more to be transferred to specialized TB hospitals, during which time treatment cannot begin. Regulatory and operational changes are needed to allow timely treatment initiation within penitentiary facilities.

Recommendations

Refugees and IDPs

No.	*Recommendation*	*Timeline*	*Implementer(s)*
	Refugees and IDPs		
1	Consider strengthening TB screening procedures among IDPs. **[High priority]**	Short-term	APH, 100%Life
2	Consider increasing financial and material support for NGOs through new Global Fund funding to expand TB screening among IDPs. **[High priority]**	Short-term	TGF
3	Maintain close coordination with health authorities in neighboring countries to facilitate cross-border data exchange on TB patients. **[High priority]**	Continuous	MoH, CPH
	Prisoners		
1	Consider decentralizing TB treatment initiation within selected penitentiary colonies, starting with pilot sites. **[High priority]**	Short-term	MoJ
2	Consider strengthening mass screening mechanisms by implementing biannual screening for the majority of the prison population (approximately 90–95%). **[High priority]**	Short-term	MoJ
3	Consider including procurement of screening tools (CAD/AI-enabled X-ray systems and Xpert instruments) in the new Global Fund application to enable effective mass screening in penitentiary settings. **[High priority]**	Short-term	MoJ, CPH, TGF
4	Consider introducing regular monitoring and supportive supervision conducted by specialists from central and/or regional penitentiary health services, with participation of civilian experts where feasible. **[High priority]**	Short-term	MoJ, CPH

* * *

TB infection prevention and control

Ukraine is among the countries that have effectively integrated WHO recommendations into national TB infection prevention and control (IPC) policies. It has also established multidisciplinary coordination structures at national and local levels to guide activities aimed at preventing and controlling TB transmission.

Specific TB IPC measures are regulated by the *Standard of infection control for health care institutions providing care to patients with tuberculosis*, approved by Order of the Ministry of Health of Ukraine No. 287 of 1 February 2019 (hereinafter the IC-TB Standard). The broader legal framework is defined by the Order of the Ministry of Health of Ukraine No. 1614 of 03 August 2021 *'On the organization of infection prevention and control in health care institutions and institutions for the provision of social services / social protection of the population'*, which introduced an integrated approach to implementing the IPC system. Implementation of these regulations was initially delayed by the COVID-19 pandemic, as restrictions were lifted only in June 2023. Subsequent disruptions caused by the war have led to significant physical damage, financial constraints, and human resource shortages.

At the national level, the coordination body for TB prevention and transmission control is integrated with HIV and hepatitis control and biosafety within the Center for Public Health under the Ministry of Health. Regional Centers for Control and Prevention of Diseases (CCPDs) operate in each oblast and are responsible for coordinating TB control activities in respective regions. MoH Order No. 1614 from 03 August 2021 defines the organization of prevention of health care associated infections in inpatient facilities, irrespective of departmental affiliation. Implementation of IPC measures is ensured by facility leadership through the Infection Control Departments[42] (ICDs) and heads of structural units.

To support implementation of the IC-TB Standard, CDCPs specialists conducted monitoring activities in 2023 and 2024, using questionnaires covering administrative, engineering, and respiratory protection measures. Findings were compiled into Analytical References, providing valuable insights into the level of IPC implementation in TB facilities.

Based on monitoring reports, mission interviews with key informants, and field observations, the following main findings were identified.

In 74% of TB facilities, the ICDs have been established, but their functionality is limited due to a lack of full-time staff and qualified personnel. Increased workload and reduced health workforce capacity, driven by migration and workforce redistribution during the war, have exacerbated these shortages.

Risk assessment of facility areas and departments is a core task of ICDs, guiding prioritization of IPC activities including resource allocation. The 2024 monitoring report shows that only 36.1% of institutions had identified risk zones – an essential component of effective planning.

Although 52.7% of health facilities calculated the funds required for IPC measures, facility budgets rarely include dedicated IPC budget lines. In the face of overall funding constraints, IPC is often considered a non-essential intervention and is therefore particularly affected. The lack of government funding is partially offset by investments from international partners, e.g., TGF.

Most facilities have developed standard operating procedures (SOPs), which are regularly monitored. TB IPC plans have also been developed, although some require revision or adaptation. Ongoing health facility accreditation processes may help improve documentation quality.

According to the data available, health care associated TB transmission appears limited. Only 11 TB cases among staff working in TB facilities were reported in 2024, and 58 cases in total during five years 2020–2024.

[42] *Ukr.* Відділ інфекційного контролю, ВІК

Various IPC-related training activities have been conducted in recent years, including those focused on TB IPC. Under the current Global Fund grant, three offline training sessions were organized for managers of TB institutions and ICD specialists. PATH supported the organization of TB IPC trainings in the regions and established the professional school 'Basics of Monitoring IPC Measures' for managers and specialists from CCPDs. A dedicated online training platform is also in place at CPH (https://courses.phc.org.ua/courses/course-v1:PHC+116_3+2025/about), which includes training on IPC.

Infrastructure in many TB facilities remains inadequate for isolating patients with presumptive TB ('TB suspects') and separating confirmed TB cases. Sixteen TB hospitals have been fully or partially destroyed in hostilities, with patients and staff relocated to other facilities, typically infectious disease hospitals. Due to financial constraints and risk of further damage, reconstruction has not been pursued. In these conditions, administrative IPC measures are prioritized over investments in rehabilitation.

The isolation of TB suspects and confirmed TB cases during the period of contagion is mandated in national legislation as a key component of administrative TB IPC policies. To reduce pressure on hospitals, many patients are treated in outpatient settings. It is estimated that three-quarters of DS-TB cases and one-quarter of DR-TB cases complete the full course of treatment in ambulatory conditions.

Hospitalized patients are placed in different departments – and, within departments, in different wards (rooms) – according to their infectiousness and resistance profile. Nevertheless, the capacity to isolate suspected or contagious cases in hospitals remains limited and often inadequate. According to the 2024 monitoring report, only 12.3% of healthcare facilities have premises that meet the requirements for Class N isolation (negative pressure, confirmed airflow direction, exhaust ventilation >12 ACH, sealed doors, bathroom, PPE at the entrance, and UV radiation), and only 36.4% have separate isolation rooms for TB that comply with Class S standards (natural or mechanical ventilation with at least 6 ACH).

In the penitentiary system, TB IPC measures follow the same principles as the civilian sector, though movement restrictions and legal criteria shape isolation practices. TB diagnosis in prisoners is rapid (3-4 days via sputum examination in territorial TB facilities), but treatment initiation is delayed until transfer to a penitentiary hospital – often taking up to one month.

Environmental TB IPC measures: ventilation

- Natural ventilation is widely used in most TB facilities, although its effectiveness is limited by climatic conditions, building design characteristics, and the willingness of staff and patients to keep windows open.
- Mechanical ventilation is used less frequently in TB health facilities, mostly in TB laboratories or isolation rooms, especially in newer buildings. High implementation and maintenance costs, as well as limited technical capacity, are the main reasons for its underutilization.
- Thanks to trainings organized in recent years and the availability of measurement equipment (Teslo 440 thermal anemometers, vaneometers, laser rangefinders) procured by PATH for TB service institutions through the 'Support to TB Control Efforts in Ukraine' project, infection control specialists in health care facilities and CCPDs are now able to measure ventilation efficiency.

Environmental TB IPC measures – UV radiation

- UV radiation is widely used in TB facilities across Ukraine. Under the Global Fund programme, 7,815 upper-room UV devices and a number of Gigahertz Optik UVC radiometers were purchased and delivered to TB institutions and CCPDs to support proper implementation of UVGI. Different models of UV fixtures are available and used in facilities. MoH Order No. 882 from 06.05.2021 approves detailed norms for the use, maintenance, and monitoring of UV devices in health facilities.

Respiratory protection policy

- The respiratory protection policy is well designed and widely implemented in health facilities according to the level of infection risk. The COVID-19 pandemic contributed to improved adherence to respirator and surgical mask use. Staff had access to sufficient respirators of various models, and no shortages of respiratory protection materials were reported during the mission or in monitoring reports. Most employees have undergone fit-testing, which was available in all facilities. As part of the 'Support to TB Control Efforts in Ukraine" project, PATH procured one high-quality fit-testing kit for each CCPD. For the AMR and IC Department of the Center for Monitoring the Implementation and Compliance of IC TB Measures, one quantitative fit-testing kit (PortaCount Model 8048-1) was procured under the same project.

Summary of achievements and challenges

The structures responsible for coordinating TB transmission prevention and control are well defined at national, regional (oblast), and facility levels. Policies for TB transmission control are aligned with WHO recommendations and formally approved by MoH, accompanied by multidisciplinary coordination structures at national, regional, and facility levels.

Health facilities have begun assessing their TB transmission risks and identifying the financial resources needed to implement infection control measures. A training plan for medical personnel has been established, delivered through hybrid and virtual platforms and incorporating educational activities on TB IPC.

The expansion of ambulatory diagnosis and treatment for large numbers of patients has reduced pressure on hospitals, enabling more effective implementation of administrative measures such as isolation and separation of contagious TB inpatients. Rapid molecular diagnostic methods have further contributed to reducing the period of infectiousness among TB cases.

At the same time, several key challenges continue to hinder effective TB infection control. Implementation at the facility level is often suboptimal. A major constraint is the insufficient number of staff dedicated specifically to TB IPC activities, which has been exacerbated during the wartime. Continuous specialized training is needed to ensure that personnel remain equipped with the skills required to control TB transmission.

Funding for airborne infection control measures in TB health facilities appears inadequate, and greater coordination with international partners could help mobilize additional resources. In some settings, TB IPC plans are largely formal documents, and the procedures are not always adapted to the specific operational realities of individual facilities. Many TB units lack the infrastructure required for effective patient isolation and separation, both due to financial constraints and the damage inflicted by the war.

Additional challenges include delays in initiating treatment for TB patients in penitentiary settings while awaiting transfer to penitentiary hospitals, and the limited use of mechanical ventilation. The latter is due to the small number of adequately equipped hospitals, insufficient funding, and limited technical capacity for system maintenance.

Recommendations

No.	*Recommendation*	*Timeline*	*Implementer(s)*
1	Ensure adequate financing for TB IPC activities, including support to IPC coordination structures, facility-level staff, and training programmes. **[High priority]**	Short-term / medium-term	MoH, CPH, ICDs, partners

2	Establish isolation rooms for patients with presumptive TB and newly diagnosed TB in all hospitals providing TB services. **[High priority]**	Short-term / medium-term	MoH, CPH, ICDs
3	Implement mechanical ventilation in high-risk areas, including isolation rooms, sputum collection areas, and TB laboratories.	Medium-term / long-term	MoH, CPH, Regional CCPDs, ICDs
4	Ensure sustainable maintenance of IPC equipment, including ventilation systems and UVGI. **[High priority]**	Medium-term / long-term	Regional CCPDs, ICDs
5	Continue and strengthen routine monitoring of TB IPC indicators in health facilities.	Continuous	CPH, Regional CCPDs

* * *

People-centered support and integrated management of TB

Integration into primary health care

WHO emphasizes people-centered TB care along its continuum, and the need to address barriers affecting patient access to TB services. Reinforcing primary health care level is essential to ensure a more integrated and comprehensive approach, encompassing prevention, early detection, and patient-centered treatment with adherence support.

On 19 January 2023, the MoH Order No. 102 approved updated Standards of Medical Care for Tuberculosis, which reinforce the patient-centered approach to TB care and enhance the role of primary care. Their implementation is expected to improve quality of care and patient outcomes, and decrease treatment-related costs and risks for patients. The implementation arrangements were further detailed in MoH Order No. 1923 from 16 November 2024 *'On approval of the Procedure for providing outpatient treatment services for people with tuberculosis in primary health care institutions'*.[43]

Integration of TB care within PHC is defined as a national priority. Family doctors are positioned as central actors in diagnosis, treatment monitoring, and the management of adverse reactions. They are empowered as the first point of contact for TB care – facilitating early case finding, improving continuity of care, and reducing stigma by embedding TB services into routine PHC delivery. Responsibilities include patient counselling, monitoring of treatment side events, timely referrals, and coordinating care with specialized TB centers. This integration is particularly important for rural and frontline regions.

The Ministry of Health through its Center of Public Health provide leadership and coordination of TB control, while regional phthisiopulmonology centers function as coordinating hubs, ensuring continuity of services despite wartime disruptions. Close collaboration with international partners has been maintained to sustain TB services. Strengthening PHC capacity for TB – including adherence support, patient counselling, and service integration with HIV, viral hepatitis, and treatment for substance abuse treatment – is recognized as a cornerstone of the national TB response.

Ukraine continues its transition from hospital-based to outpatient and community-oriented care. The reorganization of TB services prioritizes reducing unnecessary hospitalizations, expanding outpatient treatment from day one, and engaging PHC providers in screening and treatment support. Decentralization has accelerated the shift toward outpatient, people-centered approaches.

By 2024, 70% of all TB patients nationwide were initiated on outpatient treatment from the first day, achieving the national target. Digital adherence tools such as VST supported 51% of these patients. Eighteen regions achieved or exceeded the target; the highest results were recorded in Kyiv (89%), Kirovohrad (84%), Sumy (87%), Khmelnytskyi (85%), and Chernihiv (84%). Lower-performing oblasts included Zaporizhzhia (38%), Kharkiv (43%), Rivne (53%), Mykolaiv (58%), Ternopil (58%), Vinnytsia (61%), and Kherson (62%).

Early outpatient treatment initiation, including through digital adherence support, is an indicator of the Operational Plan for the State Strategy on HIV/AIDS, TB, and Viral Hepatitis until 2030 (Cabinet of Ministers Resolution No. 564-r from 18 June 2024). For 2024, the target was set at 65%.

Wartime destruction of infrastructure has limited TB service capacity in frontline areas. In response, Ukraine has deployed mobile clinics and flexible delivery models to reach remote and high-risk populations, including IDPs, mitigating the impact of damaged or destroyed facilities.

Psychosocial support

[43] https://zakon.rada.gov.ua/laws/show/z1813-24#Text

Comprehensive implementation of medical and psychosocial support services (MPSS) has led to measurable improvements in treatment adherence and outcomes. Projects under the National TB Programme providing MPSS have significantly reduced loss to follow-up, mortality, and unsuccessful outcomes. However, some patients continue to report unfriendly or stigmatizing attitudes in health facilities, which undermines trust and treatment engagement. Prolonged hospitalization and isolation often contribute to psychological distress, with most patients expressing a preference for outpatient or home-based care.

Support measures – including transport reimbursement, food packages, psychosocial counselling, and assistance in navigating administrative systems – have improved adherence and outcomes. Patient-centered care increasingly addresses the social, psychological, and economic determinants of health, emphasizing shared decision-making, confidentiality, and flexible treatment options.

Integration of TB care within PHC has expanded access, particularly in rural or war-affected areas, embedding TB management within broader community health services.

Since 2024, MPSS has been integrated into PHC facilities in six pilot regions: Zakarpattia, Zaporizhzhia, Kyiv, Lviv, Poltava, and Rivne.

In 2024, more than 1,100 patients received a total of 34,485 support services, including:

- Individualized needs assessments and care plans;
- Psychological counselling;
- Nutritional packages or food vouchers;
- Mobile/internet top-ups supporting communication and VST;
- Legal and advocacy support;
- Community outreach and re-engagement of patients who interrupted treatment.

These interventions demonstrate an effective, holistic model that integrates medical, psychological, and social support at the primary care level.

Incentives

Cash transfers and transport allowances have improved adherence by reducing indirect treatment costs. Financial support – including transport vouchers, food packages, and direct cash assistance – helps offset income loss and logistical barriers, contributing to improved adherence.

Case managers and social workers assist patients in accessing social benefits and other support. During the war, innovative adaptations such as mobile medicine delivery and train-based continuation of treatment have maintained access to services.

However, availability of such support remains inconsistent and highly dependent on external funding. Administrative delays and variability across regions constrain implementation. IDPs and refugees may lose access to local benefits, increasing vulnerability and compromising adherence and treatment outcomes.

Digital adherence technologies

Ukraine has successfully implemented VST and other digital tools, improving adherence and reducing treatment interruptions. In 2024, more than half of all patients initiated on outpatient treatment were supported through digital directly observed therapy. Remote video confirmation of medication intake has reduced transportation burdens and treatment interruptions, particularly in frontline or rural settings.

Smart pillboxes have been scaled to 11 regions, demonstrating approximately 84% adherence and around 78% treatment success among patients completing therapy with digital support. [44]

Summary of achievements and challenges

Substantial progress has been made in aligning TB care with international standards and advancing people-centered approaches, despite the profound challenges posed by ongoing war.

Over recent years, TB services have been increasingly decentralized, bringing care closer to communities and reducing reliance on hospital-based models. The adoption of digital adherence technologies, particularly video-supported treatment, has contributed to improved treatment adherence, reduced interruptions, and lowered transportation-related costs for patients. Parallel advocacy and communication efforts have helped to reduce stigma and encourage greater engagement from both communities and health workers.

Despite these achievements, several systemic challenges continue to hinder progress. The involvement of family doctors in TB care remains limited due to gaps in training, practical experience, and the availability of standardized clinical protocols, particularly for managing adverse drug reactions. Human resource shortages at the PHC level further limit the ability to deliver consistent people-centered care, and access to services remains uneven across regions.

Financial and logistical barriers – including transport costs, the need for supplementary medicines, and income loss – remain significant determinants of adherence, and displacement caused by the war disrupts continuity of care even further. Damage to health infrastructure has severely constrained service capacity in frontline regions, and although mobile clinics have alleviated some gaps, their coverage remains insufficient to meet population needs.

Stigma and psychosocial stressors continue to undermine trust and engagement, with reports of unfriendly or stigmatizing attitudes in health facilities and the psychological burden of isolation negatively affecting treatment uptake and completion.

Recommendations

No.	*Recommendation*	*Timeline*	*Implementer(s)*
1	Continue integrating TB services into primary health care, including early diagnosis, screening, BCG vaccination, and preventive services for PLHIV and contacts of TB patients, supported by targeted funding under the Programme of Medical Guarantees. **[High priority]**	Continuous	MoH, CPH, oblast health authorities
2	Strengthen PHC capacity through standardized training, clear protocols, and empowerment of family doctors to deliver comprehensive TB services. **[High priority]**	Medium-term	MoH, CPH, medical universities and postgraduate education institutions, donors and partners
3	Review and strengthen social and material support mechanisms to reduce the financial burden on patients and households and improve adherence and retention in care. **[High priority]**	Medium-term	Ministry of Social Policy Family and Unity, MoH, local authorities, NGOs, donors

[44] V Kochanov, A Bogdanov, K Karpiuk, R Rodyna, M Germanovych, G Dravniece, Leveraging digital adherence technologies to enhance public health: insights from TB care in Ukraine, *European Journal of Public Health*, Volume 34, Issue Supplement_3, November 2024, ckae144.1190, https://doi.org/10.1093/eurpub/ckae144.1190.

4	Expand the use of digital adherence technologies to ensure treatment continuity, particularly where service delivery is disrupted by the war. **[High priority]**	Short term	MoH, CPH, donors
5	Continue addressing stigma and mental health challenges through systematic training, patient-centered communication, and community engagement. **[High priority]**	Short term	MoH, CPH, NGOs, donors and partners
6	Scale up the involvement of PHC nurses in directly observed treatment and home-based support.	Short term	MoH, CPH, NGOs
7	Strengthen quality assurance, monitoring, and patient feedback mechanisms to support data-driven service improvements.	Medium-term	MoH, NGOs, donors and partners

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Participation of civil society and affected communities in TB response

Legal and policy framework

In Ukraine, charitable organizations representing NGOs, including the TB-affected community, are primarily regulated by the Civil Code[45], and the Law 'On charitable activities and charitable organizations'.[46] To support the institutional growth of CSOs and citizen participation in governance, an Action Plan[47] operationalizing the National Strategy for the Promotion of Civil Society 2021-2026[48], was developed to improve the civic environment, including support for online registration, implementation of model statutes, public consultations, participatory budgets, and volunteer incentives.

The importance of and interaction with CSOs are noted in the '*Strategy for health care system development for the period Until 2030*'[49] and the *'State Strategy for combating HIV/AIDS, tuberculosis and viral hepatitis for the period until 2030'* [50], which mention CSOs among the implementers of interventions. These interventions aim to ensure active participation in the sphere of public health including TB; contribute to treatment and prevention; support monitoring and social protection of people with TB and TBI, as well as their family members, by providing integrated and needs-oriented care; implement effective policies; and ensure a multisectoral approach to TB. Under the management and organizational tools needed for the effective implementation of the National Strategy, the integration of CSOs into the national system of formation and provision of services, and services, programmes and measures both within the framework of the implementation of the strategic and operational goals of the strategy and with other national measures in the fields of health care, social assistance, education, regional development are specifically defined in the policy document.

CSOs are engaged in Ukraine's TB response through several initiatives focusing on improving people-centered care, advocating for policy changes, providing support to affected communities, and contributing to decision-making processes in line with national strategic objectives. They provide real-time, community-generated data, as highlighted in the framework provisions of multiple agreements governing TB control activities in Ukraine, in accordance with the primary interaction either with governmental structures and organizations and/or development partners and funders.

In Ukraine, CSOs provide a range of services for people affected by TB, while the TB community is represented by a single national organization that plays a systemic role in shaping the TB response. TBPeopleUkraine works closely with people undergoing TB treatment, supports people-centered and community-based services, and implements digital technologies tailored to the specific needs of TB care to expand access to services in the context of wartime challenges. In addition, the organization applies community-led monitoring (CLM) to identify barriers, gather feedback, and advocate for systemic policy change through a multisectoral approach to collaboration and TB service delivery at both national and regional levels.

Community engagement in service delivery

As part of the overall TB response, the Ministry of Health developed in 2023 a package of regulatory documents[51] [52] [53] and laid the foundations for domestic financing of medical and psychosocial support

[45] https://zakon.rada.gov.ua/laws/show/435-15#Text
[46] https://zakon.rada.gov.ua/laws/show/5073-vi#Text
[47] https://zakon.rada.gov.ua/laws/show/246-2025-%D1%80#Text
[48] https://zakon.rada.gov.ua/laws/show/487/2021#Text
[49] https://zakon.rada.gov.ua/laws/show/34-2025-%D1%80#Text
[50] https://zakon.rada.gov.ua/laws/show/en/1415-2019-%D1%80?lang=uk#Text
[51] MoH Order No. 1444 dated 11 August 2023 'On Approval of Maximum Tariffs for the Provision of Medical and Psychosocial Support to Patients with Sensitive and Multidrug-Resistant Tuberculosis', https://zakon.rada.gov.ua/laws/show/z1443-23#Text
[52] MoH Order No. 692 dated 13 April 2023 'On Approval of the Procedure for the Provision of Medical and Psychosocial Support Services to Patients with Sensitive and Multidrug-Resistant Tuberculosis', https://zakon.rada.gov.ua/laws/show/z0973-23#Text
[53] MoH Order No. 632 from 04 April 2023 'On approval of the Methodology for calculating maximum tariffs for the provision of medical and psychosocial support services to patients with sensitive and multidrug-resistant tuberculosis'; https://zakon.rada.gov.ua/laws/show/z0915-23#n16

services (MPSS) to patients with DS-TB and DR-TB. The main task of MPSS providers is to deliver comprehensive services aimed at building and maintaining adherence to treatment and minimizing the risks of loss to follow-up.

According to CPH data, up to 60% of people with DS-TB and up to 80% with DR-TB, respectively, benefit from psychosocial support during the care cascade. The form and content of the MPSS package provided are decided based on individual needs assessments and multidisciplinary plans, seeking to respond to real support needs rather than providing a uniform approach to all patients in treatment. In 2023, the MoH, within the framework of the Public Health and Epidemic Control Programme and state procurement, through CPH, purchased MPSS services for 409 patients with RR/MDR-TB (4,254 services) and 68 patients with XDR-TB (621 services) during October–December in six regions (Zakarpattia, Zaporizhzhia, Kyiv, Lviv, Poltava and Rivne). Despite the difficult situation, CPH continued to purchase MPSS services for 1,132 patients with MDR-TB (34,485 services) in six regions (Transcarpathian, Zaporizhzhia, Kyiv, Lviv, Poltava and Rivne). As part of the MPSS services contracted under Global Fund agreements, 12,228 patients with DS-TB and 5,640 patients with DR-TB were supported in 2024 in 17 regions (the entire country except occupied regions).

By refocusing on specific challenges in wartime, TGF supports CSOs in serving people with TB and introduces innovative ways to provide services, including postal delivery of TB medications to people on TB treatment in remote regions; sputum transportation to healthcare facilities; use of bicycles to deliver medications and/or collect sputum; and use of thermal bags for storing medicines. MSF and the Red Cross continue to work in pre-frontline territories, providing emergency interventions to people in need. Targeted support is provided to IDPs with TB, who have become a distinct large group in need of medical, psychological and social support services. Particular attention is given to ensuring that these people continue treatment and receive services in the regions to which they move. This work has resulted in challenges related to the significant increase and fluctuation in the number of beneficiaries in relatively safe regions and subsequent overload on local organizations.

Particular attention is given to children with TB and the role of CSOs in delivering care for this group. Five multifunctional resource rooms and psychological support spaces were established in TB hospitals in Odesa, Kropyvnytskyi, Rivne, Zaporizhzhia, and Lutsk by TBPeopleUkraine to provide integrated support to children and adolescents affected by TB and their families. These services complement medical care with psychological support, educational activities, social assistance, and humanitarian aid, and are designed to address the individual needs of each family while improving the quality of life of children and their caregivers during treatment and recovery.

At the same time, TBPeopleUkraine and the TB-affected community are strengthening mental health and psychosocial support through the introduction of digital technologies into service delivery, with the aim of providing comprehensive support and reducing barriers to access for people affected by TB. A recent publication featuring the Ukraine case study illustrated how local CSOs were able to sustain the delivery of people-centered care under challenging conditions during the COVID-19 pandemic and the ongoing war. [54]

The WHO-recommended SPSS-TB is partially reflected in the MPSS services. Some interventions, including those covering the pre-diagnostic and post-treatment social support and/or rehabilitation stages, are not yet formally regulated by legal provisions in the country (**Table 7** below). Ukrainian legislation provides a sufficient legal basis for both service provision and advocacy for the procurement of services through social contracting at local level. The existing regulatory documents recognize the right of CSOs to conclude contracts for the provision of services or to participate in their provision, but do not provide or approve a specific list of services that might be delivered exclusively by CSOs.

[54] Case studies on engagement of communities and civil society to end tuberculosis. World Health Organization; 2024. https://iris.who.int/server/api/core/bitstreams/e2d3bfb0-b160-4f57-882c-9b462fa00a38/content

Moreover, given the relevance of prevention and screening measures in the current conditions, and the shortage of human and financial resources, it is important to continue prioritizing key and high-risk groups[55] and to actively engage the community in TB screening, prevention and recovery. Formal regulations and adequate funding allocations should be envisaged for these particular services, to be provided by CSOs, as well as further revision of relevant legislation, including the Law on Social Services. Alignment of costs attributed to services, regardless of the source of funding (domestic or foreign), should also be planned.

Table 7. Services and interventions provided in Ukraine versus WHO-recommended Standardized Package of Supportive Services

	Recommended Standardized Package of Supportive Services	Services and interventions provided in Ukraine, including children 2024–2025	Regulated by
1	Awareness raising, risk communication, community engagement and mobilization	Stigma reduction, human rights protection, community-led monitoring	The Global Fund, Stop TB Partnership, USAID, PATH etc. agreements. Not included in the list of MPSS
2	Counselling of individuals at risk of TB	Global Fund projects as part of the MPSS services	The Global Fund agreements. Not included in the list of MPSS
3	Nonclinical management of TBI	–	Not included
4	Support for active case finding	Global Fund projects as part of the MPSS	The Global Fund agreements. Not included in the list of MPSS
5	Supported treatment observation	Organization of supply and control of the intake of TB medications and survey on the presence of adverse reactions to medications; control of timely monitoring	The Procedure for MPSS, included in the list of MPSS
6	Managing loss to follow-up and preventing treatment interruption	Return of the recipient of services to treatment	The Procedure for MPSS, included in the list of MPSS
7	Individual needs assessment	Assessment of the needs of the service recipient and drawing up an individual plan for the provision of MPSS services to patients	The Procedure for MPSS, included in the list of MPSS
8	Mental health and psychological counselling and support	Psychologist services; assessment of the psycho-emotional state of the service recipient	The Procedure for MPSS, included in the list of MPSS
9	TB case management	Psychologist services; legal services; individual services; treatment and support, if necessary, of the recipient of services for hospitalization and clinical monitoring of the condition	The Procedure for MPSS, included in the list of MPSS
10	Material support	Motivational packages in the form of vouchers for chains of establishments selling food products or food sets to support continuous intake of TB medications; scratch cards for replenishing mobile and/or Internet communication	The Procedure for MPSS, included in the list of MPSS

[55] 2023 TB annual Report

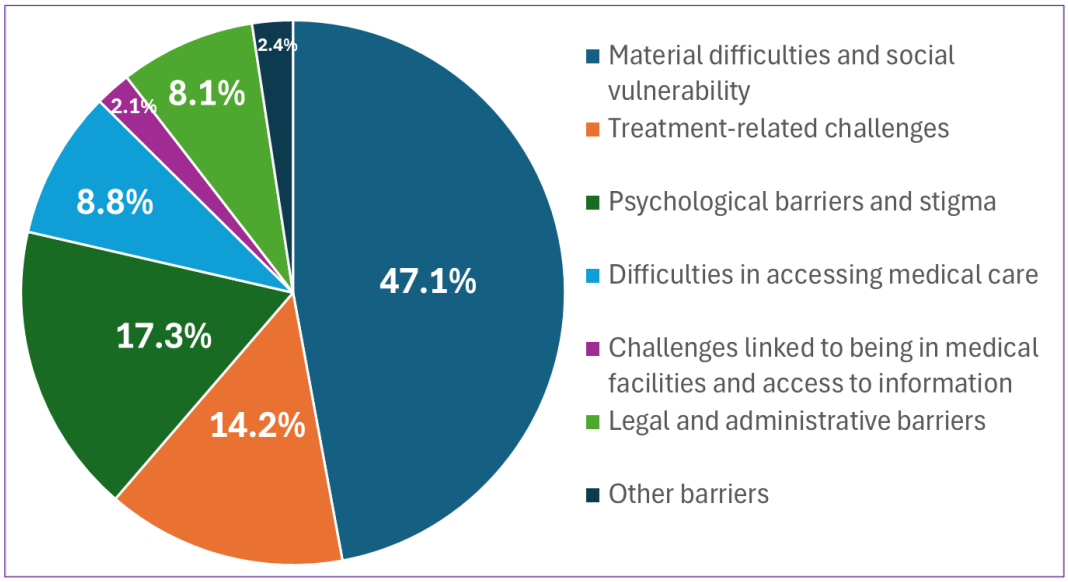
11	Health education and counselling	Counselling on adherence to treatment; assessment of the psycho-emotional state of the service recipient	The Procedure for MPSS, included in the list of MPSS
12	Post-treatment social support and/or rehabilitation	Comprehensive support to children and their families	The Global Fund, PATH, USAID agreements. Not included in the list of MPSS

Community Led Monitoring

The CLM mechanism in Ukraine – OneImpactUkraine[56] – is a digital system created by the TB community for the TB community and is available countrywide, helping people with TB and their families to report barriers, and easily obtain information, advice and linkages to help during treatment.

According to the data provided by TBPeopleUkraine (August 2024 – August 2025), a total of 4,381 cases were reported. Material difficulties and social vulnerability (2,063 cases), psychological barriers and stigma (756 cases), and treatment-related challenges (624 cases) are listed among the top three challenge categories, illustrating overwhelming economic constraints, stigma and vulnerability in access to treatment (**Figure 10**).

Figure 10. Barriers and challenges reported via OneImpactUkraine, August 2024 – August 2025



Source: OneImpact digital system

Regional distribution of the reported cases highlights the reach of and trust in the platform across the top three regions, with the highest numbers of cases reported in Chernihiv (843), Lviv (663) and Ternopil (470) oblasts. Significant reporting also came from Dnipropetrovsk (326) and Odesa (290), confirming that in both large urban and smaller rural centers, people actively use the system to voice their challenges. To increase access to OneImpact for people without smartphones, TBPeopleUkraine installed information boxes in hospitals. The collected data highlight pressing needs and vulnerabilities, and enable both people and service providers, in real time, to gain a clear picture of where improvements are needed, providing robust evidence for advocacy.

Ukraine is also among the few countries in the Region currently working to institutionalize TB CLM as a service and to integrate OneImpactUkraine into the national surveillance data system for timely use of data to improve availability, accessibility, acceptability and quality of TB services.

[56] https://tbpeopleukraine.com/oneimpact/

The human rights programmes related to TB services, including CLM, are smaller in scale than those for HIV. This is because such programmes have only seen significant investments in recent years, although scores for these interventions have increased considerably. Given the impact of TB CLM and efforts to reform laws, policies and practices, it is important to support these interventions and to continue their integration with legal literacy, access-to-justice information, awareness and education interventions, and service delivery programmes, in order to improve their effectiveness and sustainability, with proportionate dedicated funding allocations between TB and HIV.

Advocacy, communication and social mobilization

The overall communication framework is supported by MoH and agreed with all NTP partners, including CSOs and the TB community. The 2025 TB March campaign included multiple national and local events and publications (Kyiv national partnership roundtable 'Yes! We Can Overcome TB!'; NTP book club at Lesya Ukrainka Public Library; Khmelnitsky with eight communities joining the 'Hromada free from TB' initiative; 2,851 informational events; 7,050 publications; 259 media events; and Facebook coverage reaching over 500,000 people countrywide). CSOs and the TB community are actively involved in public information campaigns aimed at TB prevention, early diagnosis and timely treatment.

In collaboration with CPH, training materials for journalists were developed and training sessions conducted, stimulating broader coverage of TB-related topics, including innovations.[57] With the support of the Ministry of Education and Science, a comprehensive training course for teachers was developed,[58] covering all age groups – from preschoolers to graduates – with methodological materials on how to talk to children about TB and accompanied by a number of national events.[59] [60] Additionally, a wide range of educational materials were developed for children (cartoons, comics and books[61] [62]).

A specific advocacy role is envisaged in several TB and HIV advocacy and communication documents[63] [64] developed by a dedicated technical working group, with the aim of helping coordinate the implementation of awareness and human rights programmes, with a particular focus on collaboration, integration and effectiveness of advocacy activities. This platform has also been used to guide the response during the COVID-19 pandemic, discuss responses to Russia's full-scale invasion, develop a new strategy to address human rights-related barriers to HIV and TB services, and agree on priorities for the Global Fund support.[65]

Civil society and the TB-affected community are systematically working to eliminate identified barriers, contributing to the strengthening of existing government programmes through joint work and comprehensive approaches. In response to high levels of stigma towards people with TB, including among healthcare workers, as identified by the 2021 TB Stigma Assessment[66], a set of advocacy measures was implemented at national level, such as the development of a policy to combat stigma and discrimination in medical institutions and the implementation of a training module, with more than 10,000 professionals trained countrywide.

Among the measurable results of these efforts is the mandatory introduction of a targeted programme to combat stigmatization and discrimination of people with TB and ensure the confidentiality of relevant medical data at facility level,[67] adopted by NHSU and included in the 2023 medical guarantees

[57] https://tbpeopleukraine.com/wp-content/uploads/Posibnyk-dlya-ZMI.pdf
[58] https://tbpeopleukraine.com/wp-content/uploads/metodychnyy-keys_treners.pdf
[59] https://uied.org.ua/wp-content/uploads/2022/07/metodychnyj_posibnyk_tb_ch1.pdf
[60] https://mon.gov.ua/news/vidbuvsya-vseukrainskiy-krugliy-stil-osoblivosti-prosvitnitskoi-roboti-v-zakladakh-osviti-shchodo-zapobigannya-zakhvoryuvannyu-na-tuberkuloz-realii-ta-perspektivi
[61] https://www.youtube.com/@convictusukraine, https://youtu.be/lhIpSjIomaA, https://youtu.be/_v5JJfCngus
[62] https://www.convictus.org.ua/komiks-stop-tb/
[63] https://phc.org.ua/sites/default/files/users/user90/11_strategia_z_prav_liudyny_ta_vil_tb_do_2030_r.pdf
[64] https://phc.org.ua/sites/default/files/users/user90/Advocacy%20Strategy%202021-23.pdf
[65] https://resources.theglobalfund.org/media/14554/cr_2023-progress-assessment-ukraine_report_en.pdf
[66] https://phc.org.ua/sites/default/files/users/user92/Report%20100%25Life%20TB%20Stigma%20%20ENG.pdf
[67] https://tbpeopleukraine.com/wp-content/uploads/Polityka-protydiyi-SiD.pdf

programme. One of the mandatory requirements includes the development and maintenance of a 'tolerant attitude towards patients in accordance with the approved programme of the medical service provider to combat discrimination and stigmatization of TB patients'. In 2023, to support the practical implementation of this approach, CPH developed the *'National recommendations for destigmatizing terminology in the field of combating tuberculosis'*[68].

A follow-up TB Stigma Assessment study conducted in 2024[69] showed significant changes: the level of stigma in health care settings decreased by more than 70%. In 2024, 27% of study participants identified stigma experienced in healthcare, work and home settings as a barrier to accessing testing, treatment and care services, compared to 39% of respondents in 2021. The improvement in this indicator may be attributed, in part, to the advocacy and communication efforts undertaken by CSOs and the TB community, in close partnership with the NTP in recent years.

Capacity building

Over recent years, CSOs and the TB community have demonstrated the capacity and potential to implement project activities, as well as to participate in piloting digital solutions and applying new approaches. CSO staff, qualified as social workers, have the opportunity to undergo individual training upon hiring, with informational classes held on a regular basis. A training course, hosted by Alliance for Public Health, standardizes and systematizes all issues related to TB and provides certification of knowledge upon completion.

There are also training opportunities available within the framework of donor projects and those conducted by CPH through webinars, which are available to all interested service providers, including CSOs. Significant efforts have been made by CSOs to create and integrate into the CPH training platform, for the continuing professional development of providers at all levels, a module focused on addressing stigma and discrimination, mental health and well-being, and a PCC approach to planning and implementing TB treatment. TBPeopleUkraine developed a training course 'Formation of a tolerant attitude among medical workers towards people with TB and representatives of the highest risk groups'[70], which is available on the electronic platform of the National Health Service of Ukraine for professional development. Additionally, mechanisms to report, monitor and respond to cases of stigma and discrimination in TB services were expanded. OneImpact was adapted to help inform and train health care workers on practices that reduce levels of stigma and discrimination against people affected by TB.

At the same time, there is no systematic approach to training and capacity building for CSOs, and few cases of capacity building focused on specific services, as envisioned by the WHO SPSS-TB. The available data[71] highlight a shortage of personnel among CSOs, with fewer men engaged in support programmes (humanitarian and social sectors) due to mobilization, especially in rural and remote areas. The ongoing war, overload of social workers, mobilization, restrictions, and deterioration of living standards continue to pose risks to the ability to provide timely, quality services to all people in need.

In order to improve the quality of and access to TB services, and to better synchronize the role of CSOs in service implementation as complementary and, where feasible, interchangeable with services provided by medically qualified personnel, it is necessary to define the roles and tasks of CSOs and to establish continuous training specifically for CSOs engaged in service provision, with proper certification, as part of the NTP's human resource development plan. An inventory of human resources within CSOs should be conducted for effective planning, taking into account local opportunities and needs. Relevant manuals, methodological and educational materials should be improved to strengthen

[68] https://www.phc.org.ua/sites/default/files/users/user90/Rekomendaciji_destygmatyzacija_TB_2023.pdf
[69] https://network.org.ua/wp-content/uploads/2024/08/TB_stigma_report-english.pdf
[70] https://tbpeopleukraine.com/wp-content/uploads/POSIBNYK-DLYA-PROVEDENNYA-TRENINGU.pdf
[71] https://tbcoalition.eu/resource/files/2025/01/consolidated-report-2024_implementation-of-a-standardized-package-of-support-services-ru.pdf

CSO management systems, with an emphasis on complementarity between the healthcare system and community networks.

Multisectoral cooperation and linkages, including CCM

Collaboration with all stakeholders is a key factor in a successful strategy for eliminating TB. The National Health System Strategy includes a broad framework for increasing accountability by inclusion of representatives of interested parties, in particular patient communities, key population groups in the processes of policy development, decision-making" and "promoting intersectoral coordination at the national, regional and local levels, ensuring support for the principle of health in all policies'.

The National Council on Tuberculosis and HIV/AIDS (the Country Coordinating Mechanism, CCM) under Ukraine's Cabinet of Ministers is responsible for applying for and overseeing Global Fund grants and coordinating related local health initiatives. This committee includes representatives from government, civil society, academic institutions and affected communities to ensure inclusive, participatory decision-making in the fight against HIV and TB. The updated list of CCM members in 2025[72] includes 13 representatives of TB and HIV CSOs and affected communities, of whom 2 specifically represent TB. MoH hosts the Secretariat of the CCM, underlining the council's integration into the national health system.

In 2024, Ukraine approved the Algorithm for implementing the MAF-TB, with the CCM designated as the coordinating mechanism for its implementation. The CCM is considered a 'living' body, with a focus on high-level political declarations to which Ukraine is a party, and is updated as necessary. Work is ongoing to develop a framework of indicators, which is expected to be completed and approved in 2026. The proposed framework aims to reinforce the commitments of high-level decision-makers within the country, including renewed engagement with the national TB Caucus.

Additionally, the CCM, together with CPH, is one of the main implementers of the Communication Strategy, sharing best practices across the country, including amid the ongoing war. The CCM is also engaged in collateral activities, such as conducting an analysis of paralegals to provide a unified vision for providing this particular service. Overall, the CCM is strongly focused on strengthening common and joint approaches to providing prevention, treatment and care across all three diseases (HIV, TB and malaria), taking into account a full set of circumstances and promoting strong interdisciplinary linkages.

Despite being integrated into the structure of MoH since 2011, the two positions of the CCM Secretariat have not yet been financially integrated into the human resources budget of the Ministry, highlighting risks to the resilience of this mechanism in the event of donor withdrawal.

The Partnership 'Stop TB. Ukraine'[73] is another platform, a voluntary association of public, state, international and private organizations working together to overcome tuberculosis in the country and uniting the voice of civil society and TB community, with more than 75 CSOs engaged. The Partnership supports initiatives at local and national levels, promotes access to quality medical services, social protection of people treated for tuberculosis, and efforts to combat stigma. By combining the efforts of different sectors, it contributes to a comprehensive response to the challenges of TB, adhering to the principles of human rights and gender equality.

Monitoring and evaluation

At CPH level, a task force is in place to oversee CSO and TB community engagement and to ensure alignment with national objectives under four strategic directions: service delivery; reduction of stigma and discrimination; human rights protection; and CLM. Overall CSO work is regulated within the

[72] https://moz.gov.ua/uk/personalnij-sklad
[73] https://stoptb.com.ua/

framework of the multisectoral approach, the MPSS Procedure, concluded donor agreements and other relevant documents.

Given the importance of CSOs and the TB community in advancing health equity, reducing stigma and providing support to vulnerable people and communities affected by TB, it is critical that the country follows clear, unified approaches and standards to assess the impact of their work. Of the four M&E indicators recommended by WHO/EURO for assessing the work and involvement of CSOs,[74] none is integrated into the NTP M&E plan.

Global Fund PRs develop and submit reports on a quarterly basis, but the data are used mainly for monitoring and evaluating donor-supported projects and are not adequately reflected in the annual TB reports delivered by CPH. Although PRs report that these data would be relatively easy to collect and aggregate, the indicators for monitoring and evaluating community service delivery recommended in the TB Action Plan for the European Region are generally not used to track CSO impact in Ukraine.

It is necessary to strengthen the capacity of the NTP, or, if needed, extend its mandate and authority, given that the NTP is responsible for implementing overall TB measures and for monitoring and assessing the compliance of donor support, PR work and partner CSO activities with the goals and objectives of the National Strategy as a whole. The annual TB report should encompass all data on TB-related interventions and activities, including a list of CSOs, key achievements and challenges of all implementers, as well as available data from other donors conducting TB-related interventions during the reporting period.

Mapping active grassroots CSOs and regularly updating the list, as well as creating a shared database of CSO beneficiaries for the purpose of monitoring and evaluating service activities and all TB-related work – including human rights programmes and CLM, and the volume of external funding through CSOs – will make it possible to analyze and measure the impact of initiatives and the role of CSOs and the TB-affected community.

Funding

Given the full-scale war in Ukraine and the humanitarian crisis, the targeted participation of civil society and the TB-affected community in the provision of TB services, advocacy and CLM is currently supported exclusively by funding from external sources. However, due to the changing global funding landscape, there are risks to community infrastructure and the overall sustainability of financing. This is also recognized as an indicator of CSOs' meaningful engagement in the TB response and their operational capacity to ensure resilient work across the TB cascade of care.

CSOs and the TB community contribute to increased early detection of TB cases and improved treatment success in the regions where they operate, including through community-led monitoring. It is therefore necessary to continue supporting this work, which has demonstrated effectiveness, with a decisive emphasis on complementarity between the healthcare system and the community.

The Global Fund provides solid support to TB and HIV responses in the country, with a total allocation of USD157.16 million for the 2023-2025 grant cycle. There are three Principal Recipients (PRs) of TGF funds in Ukraine: one state institution (Center of Public Health) and two non-governmental organizations (Alliance for Public Health and '100%Life'). While increased communication and coordination are positive developments, there are perceived challenges for the NTP in playing a strategic leadership role in monitoring overall TB activities, as it is located under CPH, which is one of the Global Fund PRs.

With TGF as a major funder, it seems inevitable that the organizational interests of PRs may shape decision-making. Given the difficult situation in the country, the national decision on the number of Global Fund PRs should be reconsidered to optimize administrative resources, identify the organization

[74] Tuberculosis action plan for the WHO European Region 2023–2030, Annex 1. Monitoring and evaluation framework, https://iris.who.int/bitstream/handle/10665/374027/9789289060400-rus.pdf

or mechanism best placed to take the leading role in the next Global Fund programme architecture, and focus on achieving the greatest efficiency, outcomes and impact in support of the country's strategic goals.

Summary of achievements and challenges

Ukraine has made substantial progress in engaging civil society and affected communities in the TB response. A solid legal and policy framework provides CSOs and communities with a clear mandate for both service provision and advocacy. Community engagement in service delivery is formally regulated through a package of documents on medical and psychosocial support, with services tailored to individual needs of adults, children and IDPs and supported by innovative delivery models.

Advocacy, communication and social mobilization are coordinated within an agreed ACSM framework led by MoH, with civil society and the TB-affected community actively addressing barriers and strengthening government programmes. Community-led monitoring (OneImpactUkraine) is widely used in both urban and rural settings, providing real-time, evidence-based data on needs and vulnerabilities to guide service improvements and advocacy. Capacity building is supported through donor-funded and CPH-led training opportunities for CSOs.

However, several challenges remain. Several important roles and tasks of CSOs are not yet fully defined in regulations, particularly regarding pre-diagnostic support and post-treatment social support and rehabilitation, which constrains community engagement in screening, active case finding and strengthening of outpatient TB care.

Monitoring and evaluation systems do not systematically capture the scope and impact of CSO-delivered services: data reported quarterly by TGF PRs are mainly used for donor project oversight and are insufficiently integrated into national TB reporting. Heavy dependence on donor funding for community-based services, advocacy and CLM leaves CSOs highly vulnerable to funding uncertainties and poses risks to the continuity and resilience of community-led contributions to the TB response.

Recommendations

No.	*Recommendation*	*Timeline*	*Implementer(s)*
1	Define the roles and responsibilities of CSOs and revise relevant legislation, including the Law on Social Services, particularly for pre-diagnostic activities such as active TB case finding and prevention, video-supported treatment, and outpatient care, to complement PHC services. **[High priority]**	Short-term	MoH, CPH, partners, CSOs
2	Ensure proportionate and adequate financing of CSO-led services within available funding opportunities, including through alignment of service costs across funding sources and application of social procurement mechanisms using public funds in areas with high service gaps or workforce shortages.	Short-term	MoH, partners
3	Support TB community-led monitoring (OneImpact) to further develop and integrate it with legal literacy, access-to-justice initiatives, awareness and education activities, and service delivery programmes, with dedicated funding allocations. **[High priority]**	Short-term	MoH, partners

4	Develop and approve a system for monitoring and evaluating community-based services, including tracking WHO-recommended indicators, and incorporate results into annual NTP reports. Establish a shared database of CSO beneficiaries to support monitoring and evaluation of TB-related and human-rights programmes. **[High priority]**	Short-term	MoH, CPH, partners
5	Establish certified continuous training programmes for CSOs engaged in service delivery, as part of the NTP human-resource development plan, including an inventory of CSO human resources and updated methodological and educational materials to strengthen management capacity.	Medium-term	MoH, CPH, partners
6	Conduct an impact assessment of CSO and community engagement in the national TB response, map grassroots TB CSOs and donors with corresponding funding allocations, and regularly update the registry of active CSOs and donors.	Medium-term	MoH, CPH, partners
7	Consider revising the number of Global Fund principal recipients and identify the organizational setup best positioned to lead the next Global Fund programme architecture, with a focus on maximizing efficiency, outcomes, and impact in the current context. **[High priority]**	Short- term	MoH, CCM

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National TB programme governance, organization and capacity

Despite the challenges of wartime, the Ministry of Health and national partners have maintained their commitment to continuing health-system reforms, including the adoption of legislation and regulations aimed at strengthening the resilience and performance of health services, including TB care. MoH has overall responsibility for the TB response and plays a central role in coordinating programme implementation with national stakeholders at both central and regional levels, as well as with international partners. The Center for Public Health (CPH), established under MoH in 2015, is the country's leading institution in the field of public health and disease control.

According to its Statute updated in February 2024,[75] CPH is responsible for implementing state policy in public health. Its functions are organized into 21 groups of activities, including the development of regulations and strategies in public health and disease control; surveillance of infectious and non-communicable diseases; management of health statistics; pharmaceutical and medical-device management; health promotion and NCD prevention; research and innovation in public health; analysis of social determinants of health; coordination of public-health emergency responses under the International Health Regulations; biosafety and biosecurity oversight; laboratory quality control and reference laboratory functions; implementation of IPC and AMR measures; metrology and certification activities; and other relevant tasks.

CPH undertakes the function of the central unit of the national TB and HIV programmes, being responsible for planning, implementation, monitoring and evaluation, information systems, and other cross-cutting functions. It closely collaborates with the State Criminal and Executive Service of the Ministry of Justice, which is responsible for TB services in penitentiary settings. Practical management and coordination of the TB programme are carried out by the CPH Department for Management of TB Control Programme. CPH is the governmental Principal Recipient of Global Fund TB and HIV grants, alongside two non-governmental PRs (Alliance for Public Health and "100 Percent Life").

Since July 2021, Centers for Control and Prevention of Diseases (CCPDs) have operated in all oblasts. Reporting to MoH and mandated under the 2022 Law *'On the Public Health System'*,[76] CCPDs are responsible for infectious disease surveillance and response, prevention of non-communicable diseases, biosafety and biosecurity, immunoprophylaxis, health promotion, AMR control, and emergency preparedness. Their role in the TB response has grown substantially, with intensified collaboration between CCPDs, CPH, and regional TB centers on epidemiological analysis, infection prevention and control measures, contact tracing, outbreak investigation, TB awareness and education, participation in regional TB/HIV coordination boards, and joint NTP monitoring / supervision visits in respective regions.

Since the 2022 TB Programme Review, Ukraine has implemented important reforms in specialized TB services. The Law *'On Overcoming Tuberculosis in Ukraine'* [77] (effective February 2024) designates the Regional Phthisiopulmonology Center as the single institution responsible for coordinating and delivering TB services within its region, delivering diagnostic and treatment services for adults and children in outpatient and inpatient settings under a contract for medical services (Article 1.11).

Structural reforms have been implemented through mergers of medical facilities, and as of 1 January 2025 the network of TB institutions under MoH system consisted of:[78]

- *9 stand-alone Regional Phthisiopulmonology Centers* (Cherkasy, Donetsk, Kharkiv, Khmelnytskyi, Lviv, Ternopil, Vinnytsia, Zhytomyr oblasts; Kyiv city)

[75] MoH Order No. 224 from 09 February 2024 On Approval of the Statute of the State Institution 'Center of Public Health of the Ministry of Health of Ukraine' (new edition); https://moz.gov.ua/uk/decrees/nakaz-moz-ukraini-vid-09022024--224-pro-zatverdzhennja-statutu-derzhavnoi-ustanovi-centr-gromadskogo-zdorov%E2%80%99ja-ministerstva-ohoroni-zdorov%E2%80%99ja-ukraini-nova-redakcija

[76] https://zakon.rada.gov.ua/laws/show/en/2573-20#Text

[77] Law No. 3269-IX of 14 July 2023 *'On overcoming tuberculosis in Ukraine'*; https://zakon.rada.gov.ua/laws/show/3269-20#Text

[78] Note: the total number of TB institutions was 29 as the mergers have not yet been completed in Kharkiv and Mykolaiv oblasts, which have 4 and 2 facilities, respectively; https://phc.org.ua/sites/default/files/users/user161/Довідник%202024.pdf

- *8 Phthisiopulmonology Centers merged with infectious diseases or multidisciplinary hospitals* (Chernihiv, Ivano-Frankivsk, Mykolaiv, Rivne, Sumy, Volyn, Zakarpattia, Zaporizhzhia oblasts)
- *8 Phthisiopulmonology Centers merged with HIV/AIDS centers* (Chernivtsi, Dnipropetrovsk, Kherson, Kirovohrad, Kyiv, Luhansk, Odesa, Poltava oblasts).

The optimization of TB facilities aims to improve efficiency, quality of care integration of services, and to support a shift toward people-centered approaches in outpatient and community settings. The total number of hospital beds for TB treatment decreased from 2,898 in 2023 to 2,477 in 2024 (by 14.5%). Compared to 2020, when a total of 6,494 beds were in place, the inpatient capacity has been downsized by 61.9% (2.6 times).

In 2024, the average length of stay (ALOS) for all TB inpatients was 41.6 days, a 10.0% reduction from 2023 (46.2 days). The decrease for adults was 9.9% (45.7 to 41.2 days), while pediatric ALOS decreased only slightly (65.5 to 63.7 days), influenced by prolonged stays in frontline regions such as Zaporizhzhia (139.0 days).

It should be noted that, despite recent downsizing, TB inpatient capacity remains substantially excessive relative to epidemiological trends, progress in the rollout of effective treatment regimens, and the availability of hospital-replacing options for TB case management. In 2024, the nationwide TB bed occupancy rate was approximately 50%, and only 25% for pediatric TB beds. Future planning for optimal inpatient capacity should include consultations among national institutions and experts and take into account multiple dimensions, including hospital payment mechanisms, as well as the need to maintain contingency inpatient capacity for admissions related to other diseases and preparedness for potential future respiratory pandemics.

Implementation of people-centered approaches, scaling up outpatient treatment and strengthening the engagement of primary health care are high priorities of work for the Ministry of Health and the NTP. A key task in the *'Strategy for the development of the system of anti-tuberculosis medical care for the population for 2024-2026 and approval of the operational plan of measures for its implementation'*, approved by the Cabinet of Ministers Resolution No. 726 of 02 August 2024,[79] is the transition to an integrated, person-centered model of TB services. This should be achieved by strengthening functions and mechanisms of interaction among various actors in the health system (PHC providers, regional phthisiopulmonology centers, CCPDs, local public authorities, and civil society).

Ensuring access to outpatient treatment from day one is a component of the 'Operational Action Plan for the implementation in 2024-2026 of the *'State Strategy in the field of combating HIV/AIDS, tuberculosis and viral hepatitis for the period up to 2030'*, approved by the Cabinet of Ministers Resolution No. 564-r of 18 June 2024,[80] with target indicator for 2024 of 65%. PHC institutions and professionals play a particularly important role in implementing this model and operationalizing the concepts of people-centeredness and integrated care.

To facilitate implementation of the above strategic directions, several important regulations were enacted in Ukraine during the last three years, such as:

- Amendments (April 2024) to MoH Order No. 302 of 16 February 2022 *'On approval of the procedure for organizing the detection and diagnosis of tuberculosis and latent tuberculosis infection'*;[81]
- MoH Order No. 102 of 19 January 2024 *'On approval of Standards of Medical Care "Tuberculosis"'*;[82]

[79] https://zakon.rada.gov.ua/laws/show/726-2024-%D1%80#Text
[80] https://zakon.rada.gov.ua/laws/show/564-2024-%D1%80#Text
[81] https://zakon.rada.gov.ua/laws/show/z0366-22#Text
[82] https://zakon.rada.gov.ua/laws/show/z1813-24#Text

- MoH Order No. 1923 of 16 November 2024 'On approval of the Procedure for the provision of services for outpatient treatment of people with tuberculosis in primary health care institutions';[83]
- Amendments (November 2024, January 2025 and August 2025) to MoH Order No. 504 of 19 March 2018 *'On approval of the Procedure for the provision of primary health care'*.[84]

It is important to emphasize that despite extreme challenges posed by the ongoing war crisis, Ukraine continued to expand people-centered approaches in TB care including implementation of predominantly outpatient case management. According to CPH data, the share of people with TB who received outpatient treatment from the beginning of its initiation reached 70% nationwide in 2024, thus achieving and exceeding the national target of 65%, with 18 oblasts surpassing this target indicator (five of them documenting levels of >80%). At the same time, the NTP sees opportunities for further improvement, including rolling out the use of digital adherence tools: in 2024, only about half of patients benefited from this kind of treatment support.

The potential of PHC is not yet utilized in full. According to CPH, the monitoring visits to the regions reveal incomplete fulfilment of assigned responsibilities and regulatory requirements by PHC staff. This often includes failure (or significant delays in) submitting proper reporting information on activities implemented in population groups at increased risk for TB, in particular, that on systematic screening for active TB, TBI diagnosis, and TPT initiation. Identification and examination of risk groups for TB by PHC doctors are often suboptimal and insufficiently coordinated; therefor, the reported data for such groups are unreliable.

Management of PHC institutions does not always receive the necessary analytical information from their authorized staff to support managerial decision-making; as the result, the progress in expanding the role and performance of multidisciplinary teams (MDTs) to organize and supervise outpatient TB treatment is slow, and significant variations in care practices exist across territories. In addition, the NTP pointed out at the lack of motivation of PHC institutions to take over outpatient TB treatment as this function remains optional – the PHC facilities need to sign an additional NHSU contract for this purpose, and payment levels are insufficient to motivate PHC engagement. Further local evidence generation and advocacy is required to make TB treatment mandatory within PHC, possibly with introducing specific incentives for work with risk groups in the 2026 programme revision.

According to key Review informants, many facilities in general health service operate outdated X-ray devices, and equipment maintenance and repairs remain a major bottleneck. Staffing shortages in the radiology service (including outflow of male doctors) are significant and exacerbate diagnostic delays.

An important innovative development is a flagship initiative *"Community Free from TB"* (*"Громада, вільна від туберкульозу"*) *w*hich to improve accessibility and continuity of care through strengthening a decentralized, people-centered service delivery at community level, leading to improved quality and increase in satisfaction among patients and health personnel. Currently implemented in about 30 communities, it formalizes collaboration through Memoranda of Understanding among regional phthisiopulmonology centers, PHC institutions, and local governments; communities co-fund social support, transport, and patient incentives from their local budgets. In 20 regions, mobile diagnostic units are operational for TB, HIV, and hepatitis. These units use vehicles equipped with portable X-rays and GeneXpert instruments.

The NTP has maintained monitoring and supervision activities despite the wartime context of security risks, workforce shortages and limited funding. Central-level teams from CPH conduct annual monitoring / supervisory visits to every region, with additional visits to high-priority oblasts, especially those in frontline areas. These visits, supported by Global Fund financing and involving CPH and Regional CCPDs staff, include on-site mentoring, follow-up assessments and verification of corrective

[83] https://zakon.rada.gov.ua/laws/show/z1813-24#Text
[84] https://zakon.rada.gov.ua/laws/show/z0348-18#n19

actions. Although supervision remains systematic, ongoing hostilities, resource constraints and heavy workloads continue may cause delays compared to planned schedules, and slow implementation of recommendations. The current staffing schedule at CPH TB Department (only 6 full-time positions, out of which 5 filled) is considered insufficient vis-à-vis the high and increasing, in many instances, scope and complexity of work at the NTP central, including in programme M&E and regional oversight.

Training and capacity-building activities have largely shifted to online formats, with CPH coordinating extensive online courses[85], national webinars and blended courses. These platforms have enabled thousands of health workers to earn accredited credits, helping maintain technical capacity despite travel and security constraints. Engagement remains high, ensuring that essential TB competencies continue to be strengthened across the workforce. At the same time, organizing practical, case-based training is challenging due to travel restrictions and, often, funding limitations, while such courses remain useful, particularly for new TB doctors and laboratory staff.

Cooperation with the National Institute of Phthisiology and Pulmonology (NIPhP) has also deepened. Now contracted by NHSU to deliver TB care packages, the Institute reports service outputs to MoH and works closely with CPH, though occasional delays in data exchange persist. NIPhP specialists are actively engaged in guideline development, NTP working groups and operational research.

In conclusion, Ukraine has demonstrated strong political commitment and maintained a solid organizational foundation for TB control despite wartime crises. A comprehensive legal framework, including the new TB Law and national strategies, underpins service continuity and policy coherence. Regional Phthisiopulmonology Centers function across all oblasts under NHSU contracts, supporting a coordinated shift toward outpatient, people-centered care, with more than two-thirds of patients initiating treatment in ambulatory settings. Community-based initiatives and mobile diagnostic units have expanded access to services, while the growing role of Regional CCPDs has strengthened surveillance, contact tracing and cross-sectoral collaboration. Monitoring and supervision remain functional, and large-scale online training platforms have sustained health workers' competencies.

However, major challenges persist. The ongoing war continues to disrupt service delivery, impede access and damage critical infrastructure, including TB facilities. Integration of TB services into primary health care remains incomplete, with limited incentives for PHC engagement and uneven adoption of innovative practices such as digital adherence support. Human resource shortages – e.g. in radiology – limit the system's capacity to deliver services effectively. Security constraints and funding limitations hinder timely supervision and implementation of corrective actions.

Recommendations

No.	*Recommendation*	*Timeline*	*Implementer(s)*
1	Strengthen PHC engagement and outpatient TB treatment by assigning outpatient TB care as a mandatory PHC function within NHSU service packages and revising provider payment mechanisms to introduce performance-based incentives, including for prevention services. **[High priority]**	Short-term	MoH, NHSU, CPH – with technical support from WHO and partners
2	Maintain strategic collaboration with the Global Fund and other external partners, conduct prioritization exercises, and integrate identified priorities into the 2026 TGF application to ensure funding continuity and uninterrupted access to life-saving services.	Short-term, medium-term	CCM, MoH, CPH, CSOs, WHO, Stop TB Partnership / GDF and other external partners

[85] https://portal.phc.org.ua/en/

	[High priority]		
3	Ensure continued support for programme monitoring and supportive supervision provided by specialists at central and regional levels, including securing appropriate funding in the next TGF funding cycle. **[High priority]**	Short-term, medium-term	CPH
4	Embed essential NTP functions – monitoring and evaluation, capacity building, and continuous professional development – within the national budget, complemented by donor funding, and maintain and further develop remote and hybrid training models. **[High priority]**	Short-term, continuous	MoH, CPH, Regional TB Centers, external partners
5	Enhance the operational capacity of the TB management unit at the Center of Public Health by increasing staffing and allocating dedicated funding for priority functions such as programme oversight and M&E. **[High priority]**	Short-term, medium-term	CPH, MoH
6	Strengthen X-ray screening capacity at peripheral service-delivery level through expansion of mobile and ultraportable CAD/AI-equipped X-ray systems, securing donor and progressively increased domestic financing for procurement, maintenance, and staff training, with priority given to PHC-level deployment in underserved areas. **[High priority]**	Medium-term	MoH, CPH, NHSU, Oblast Health Administrations, TGF and other external partners
7	Improve intra-sectoral and intersectoral coordination by strengthening mechanisms linking CPH, NHSU, regional CCPDs, and other relevant bodies to align planning, data flows, and resource use, and by enhancing collaboration with other ministries and local social services to improve social support, penitentiary TB care, and post-treatment reintegration.	Continuous	MoH, NHSU, CPH, Oblast Health Administrations, Regional CCPDs, Ministry of Social Policy, Ministry of Justice, local authorities, CSOs

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Universal Health Coverage and financing of TB services

UHC and relevant TB policies

WHO defines Universal Health Coverage (UHC) as the opportunity for all people to have access to the full range of quality health services, when and where they need them, without experiencing financial hardship. UHC progress towards UN SDG indicator 3.8.1 is measured by the Service Coverage Index (SCI), which estimates the average coverage of essential services based on tracer interventions, service capacity and access, among the general population and disadvantaged segments.[86]

The UHC SCI has improved globally from a population-weighted average of 54 (out of 100) in 2000 to 71 in 2023. During the same period, the WHO-estimated SCI in Ukraine has increased from 70 to 80 (**Table 8**), which is similar with the average indicators for countries of the WHO European Region (82) and the group of upper-middle-income countries (81), to which Ukraine belongs.[87] It should be noted that the estimated level of service coverage sub-index for infectious diseases in Ukraine in 2023 was as high as 97 – same as the average for WHO European Region and higher than that for the WB upper-middle income group of countries (94) and the global average (76).

Table 8. UHC Service Coverage Index, 2000-2023

Country / Group	*2000*	*2005*	*2010*	*2015*	*2020*	*2021*	*2022*	*2023*
Ukraine	70	74	76	78	79	79	79	80
WHO European Region	72	75	78	80	81	82	82	82
Upper-middle income countries	69	70	74	78	81	82	81	81
Global average	54	57	63	68	70	70	71	71

Source: The Global Health Observatory, WHO[88]

Health coverage policy is governed by the Constitution of Ukraine: Article 49 states that 'everyone shall have the right to health protection, medical care and medical insurance', and that 'the State shall create conditions for effective medical service accessible to all citizens. State and communal health protection institutions shall render medical care free-of-charge'.[89] In reality, however, this task has proven very challenging, and, as a result, access to health care was implicitly rationed and to important extent depended on out-of-pocket payments (OOPs) by users of services. The latest WHO estimate (for 2021) indicates that OOP expenditures in Ukraine accounted for 45.3% of the total current health expenditures (CHE).

The most recent in-country study of coverage and financial protection was published by WHO/EURO (Barcelona Office for Health Financing) in 2023;[90] however, it operated with data from household budget surveys conducted between 2009 and 2021, i.e. before the onset of the war. The main findings were that in 2021, 11% of households were impoverished or further impoverished after OOPs and 17% of households (about 2.5 million households) experienced catastrophic health spending (in the poorest quintile – nearly 2 million households, or 64%). Catastrophic health spending was primarily driven by payments for hospital services and for medicines: in 2021, inpatient care accounted for 44% of catastrophic health spending and medicines – for 43%.

Entitlement to publicly financed health care is based on citizenship and permanent residence; however, internally displaced people are entitled to the same health services but may face administrative barriers to access. The expansion of the Affordable Medicines Programme (AMP) since 2017 and the Programme of Medical Guarantees (PMG) since 2018 have been an important attempt to explicitly link publicly financed health services to health needs and available resources. However,

[86] The Global Health Observatory, WHO; https://www.who.int/data/gho/data/themes/topics/service-coverage; accessed 23.12. 2024.
[87] https://blogs.worldbank.org/en/opendata/world-bank-country-classifications-by-income-level-for-2024-2025
[88] https://www.who.int/data/gho/data/themes/topics/service-coverage; accessed 06 December 2025
[89] https://zakon.rada.gov.ua/laws/show/en/254%D0%BA/96-%D0%B2%D1%80#Text
[90] *Can people afford to pay for health care? New evidence on financial protection in Ukraine 2023*. WHO Regional Office for Europe (2023); https://iris.who.int/server/api/core/bitstreams/82defc63-1f22-4083-8986-2ce2e0c436c6/content

the AMP covers a limited number of diseases / conditions; thus, the coverage of outpatient medicines remains insufficient. Formal user charges (co-payments by patients) apply only to prescribed medicines covered by the AMP. At the same time, it is recognized that informal payments to health care providers remain widespread, particularly in hospitals.[91]

To progress towards UHC and address the existing challenges in coverage, access and quality of health care services, including those for TB, the Government of Ukraine has undertaken several important action steps over the last three years; the summary of these developments since the previous TB Programme Review conducted in late 2022. The following key legislation and regulation has been developed and enacted.

- The *Health System Development Strategy Until 2030* was adopted by the Cabinet of Ministers' Resolution No. 34-r on 17 January 2025, together with the Operational Plan for its implementation during 2025-2027.[92]

  The Strategy reinforces Ukraine's commitment to UHC and builds a system-wide foundation that strengthens the TB response. Its core objectives – expanding access to high-quality services, strengthening PHC, modernizing care pathways, and reducing catastrophic health expenditures – support early TB detection, integrated case management, and continuity of care.

  It promotes equitable access by mandating barrier-free services for remote, rural, de-occupied and penitentiary settings, as well as for IDPs and other vulnerable groups that carry a disproportionate TB burden. Investments in surveillance, laboratory networks, AMR control, emergency preparedness, mental health, rehabilitation, and digital systems address structural barriers that historically undermined TB outcomes.

  The Strategy prioritizes financial protection by strengthening state financial guarantees, improving procurement and medicine availability, and reducing OOPs including informal payments. Its emphasis on civil society engagement, patient centeredness, and multisectoral action positions TB care as an integral component of broader health-system reform.

- Law of Ukraine No. 3269-IX from 14 July 2023 *'On overcoming tuberculosis in Ukraine'*[93].

  In force since February 2024, the Law establishes a modern, UHC-aligned and rights-based TB response. It guarantees that TB prevention, diagnosis, treatment, and rehabilitation are free of charge under the state financial guarantees system and accessible to all people in Ukraine. TB services must be provided across all levels – PHC, outpatient and inpatient specialist care, and penitentiary facilities – supported by a standardized three-tier lab network, infection-control requirements, and telemedicine.

  The Law embeds equity and financial protection as state obligations: free TB medicines (including management of side effects), inpatient care, and preventive treatment for risk groups are all to be fully financed from public budgets. It provides social protection through extended paid sick leave with job security, a ban on dismissal due to TB, and enhanced protection for TB service personnel.

  Local authorities are encouraged to provide additional support, while civil society and community organizations are formally recognized for providing adherence support, psychosocial care, and legal assistance – essential for vulnerable groups such as detainees, children, and other key populations. The Law operationalizes UHC by defining TB control as a

[91] Shuftan N, Eriksen A, Aregay A, Cairns D, Kasyanchuk S, Richardson E (2025). *Health Systems in Action (HSiA) Insights – Ukraine, 2024.* European Observatory on Health Systems and Policies, WHO Regional Office for Europe; https://iris.who.int/server/api/core/bitstreams/eeb2d702-6a98-4375-a119-dbe7214fc581/content
[92] https://healthstrategy2030.com.ua/en/strategy
[93] https://zakon.rada.gov.ua/laws/show/3269-20#Text

multisectoral state responsibility spanning health, social protection, education, penitentiary and other sectors.

- The *National Strategy for Combating HIV/AIDS, Tuberculosis, and Viral Hepatitis in Ukraine Until 2030*[94] is operationalized through three-year implementation plans, the actual one being the *2024-2026 Action Plan*, approved by the Cabinet of Ministers' Resolution No. 564-r on 18 June 2024[95].

  The Strategy and its implementation plan commit to delivering affordable, high-quality, essential TB services – prevention, diagnosis, treatment, care and support – within the national benefits package, which is fully consistent with UHC principles. They prioritize key and vulnerable populations affected by TB, HIV and hepatitis (e.g., people who inject drugs, prisoners, socially marginalized groups), emphasizing a rights-based and patient-centered approach.

  By integrating TB/HIV/hepatitis into one national framework, the Strategy reduces fragmentation and improves service continuity for people with co-morbidities or overlapping vulnerabilities. The Action Plan advances access by expanding diagnostics, treatment quality, and service reach for populations with limited access.

  Successful implementation of the 2024-2026 Plan will further embed TB services within state financing mechanisms, and strengthen resilience of TB service provision under conditions of war, displacement and economic strain.

- Other legislation and regulation including Orders of the Ministry of Health that are relevant for improving TB service delivery in terms of access / coverage and quality (the majority of them covered in other relevant sections of this report).

Recent policy developments demonstrate clear progress toward expanding access and improving financial protection, with TB increasingly embedded within the broader UHC framework. Adoption of the Health System Development Strategy and the new TB Law have clarified entitlements and framework for reducing financial barriers, expanding service coverage and strengthening the foundations for equitable, people-centered TB care across all levels of the system.

On the other hand, substantial out-of-pocket payments and widespread informal payments continue to undermine financial protection, particularly for disadvantaged households. Coverage of outpatient medicines remains limited. System resilience continues to be affected by war-related disruptions, uneven service availability and persistent gaps in access, quality and continuity of care. Despite strong policy commitments, effective implementation, sustainable financing and full operationalization of new regulations remain critical to achieving UHC for TB.

Financing of TB services

Ukraine's per capita health expenditure in 2021 (the most recent year with internationally comparable data) exceeded the average for lower-middle-income countries in the WHO European Region but remained below the regional average.[96] As a percentage of GDP, current health expenditure increased from 7.1% in 2019 to 8.2% in 2021, with 47.9% of total health spending coming from private sources, primarily out-of-pocket payments. The share of the health budget in total government expenditure rose from 7.7% in 2019 to 10.6% in 2021, representing 4.3% of GDP. [97]

In recent years, Ukraine has implemented substantial health financing reforms, initiated with the adoption of the Law *'On State Financial Guarantees of Medical Services to the Population'* in 2017. The

[94] https://www.globalhep.org/sites/default/files/content/resource/files/2023-06/UKR-112850.pdf
[95] https://zakon.rada.gov.ua/laws/show/564-2024-%D1%80#Text
[96] Health Systems in Action: Ukraine, 2024. World Health Organization Regional Office for Europe and European Observatory of Health Systems and Policies.
[97] WHO Global Health Expenditure Database, https://apps.who.int/nha/database/Select/Indicators/en Accessed on September 14, 2025.

establishment of the National Health Service of Ukraine (NHSU) in 2018 as the single national purchasing agency enabled strategic contracting introduced modern payment mechanisms. [98] NHSU contracts public and private health care providers and is responsible for the implementation of the Affordable Medicines Programme (AMP) and the Programme of Medical Guarantees (PMG). The PMG consists of service packages covering specific diseases (e.g., TB, HIV) or broader categories of medical care (such as primary health care, emergency care, and palliative care). The number of service packages has increased from 33 in 2020 to 44 in 2025.[99]

Prior to 2022, the consolidated government health budget demonstrated substantial growth, doubling from UAH 102.0 billion in 2017 to UAH 203.6 billion in 2021. Despite the severe fiscal challenges arising since 2022, government commitment to the health sector has remained strong (**Table 9**).

Table 9. Consolidated health budget of Ukraine, 2022-2026 (UAH billion)*

	2022	2023	2024	2025	2026
State budget funding for health sector	184.3	179.3	201.4	217.0	258.0

* - 2022-2024 - executed budget, 2025 – approved budget, 2026 – plan.

Source: Ministry of Finance of Ukraine, https://mof.gov.ua/uk/state-budget

It is important to note that any comparisons of public budget allocations for health sector in Ukraine before and after 2022 should be interpreted with caution, due to the significant changes in the population size and territorial coverage of services, caused by the war.

Overall, Ukraine maintains strong public financial management systems at national and subnational levels, with high execution rates of the health budget.[100] Central government spending on the PMG is channeled through a single central budget programme managed by NHSU, accounting for approximately 75–80% of government health expenditure in 2024-2025. The Ministry of Health directly manages part of the budget for public health and national programmes, while regional and local authorities provide additional funding for covering utility costs, as well as for capital investments or routine maintenance of facilities under their ownership.

As noted in the 2022 NTP review, TB service financing remains partially fragmented: subnational governments co-finance medical facilities, and TB services in the penitentiary system received input-based financing the Ministry of Justice's budget. A recent positive development is that, beginning in 2025, the TB Institute under the National Academy of Sciences of Ukraine is contracted and funded by NHSU.

According to the WHO country TB profile, total TB funding in Ukraine amounted to USD 82 million in 2023, of which 57% was provided from domestic sources (compared with an average of 96% for the WHO European Region), and 43% from international funding.[101] Data submitted by the country to the WHO Global TB Database for 2021-2024 provide a more complete picture of the TB programme funding (**Table 10**).

Table 10. Funding of National TB Programme in Ukraine 2021-2024 (USD million)

Funding source	***2021***		***2022***		***2023***		***2024***	
	Expected	Received	Expected	Received	Expected	Received	Expected	Received
Domestic (including loans)	65.7	77.8	113.8	49.7	38.1	46.7	49.4	33.4
Global Fund	40.6	12.7	27.9	44.5	37.7	24.8	25.8	15.0
USAID	6.8	0.5	0.4	8.5	9.0	9.8	10.9	4.3

[98] The Law of Ukraine "On State Financial Guarantees of Medical Service to the Population". October 19, 2017. https://zakon.rada.gov.ua/laws/show/2168-19?lang=en#Text

[99] National Health Service of Ukraine. Programme of Medical Guarantees 2025.

[100] Budget Execution in Health. Case Study: Ukraine (unpublished) 2022

[101] World Health Organization. Tuberculosis Profile: Ukraine 2023. Accessed October 16, 2025.

Other sources	-	-	-	1.0	0.8	0.8	-	0.1
TOTAL	**113.1**	**91.0**	**142.1**	**103.7**	**85.6**	**82.1**	**86.1**	**52.8**

Source: Center of Public Health data for WHO Global TB Database.

During 2021-2024, domestic funding accounted for 63.4% of actual TB financing, while external donors – primarily the Global Fund – provided 36.6%. The table also indicates a reduction in total funding after 2022, resulting in a more constrained financial environment for the NTP.

TB services are currently included in the PMG through two service packages:

- Diagnosis and treatment of adults and children with TB in inpatient and outpatient settings;
- Primary health care package, which since 2021 includes 'Support and treatment of adults and children with tuberculosis at the primary care level'.

The financing mechanism for inpatient care, including TB hospitals, has shifted from line-item budgeting to case-based payments. Specialized TB facilities receive bundled payments based on a fixed capitation rate per patient, covering both outpatient and inpatient services. The basic tariff for drug-susceptible TB increased from UAH 20.7 thousand in 2020 to UAH 40.3 thousand in 2021 and UAH 49.6 thousand in 2025.[102] A coefficient of 1.4 is applied for drug-resistant cases. The tariffs for inpatient TB services do not account for regional cost differences or patient volumes, which can lead to financial difficulties for facilities with lower caseload, as they may not be able generate enough revenues to cover their operational costs.

The PHC service package for TB includes:

1. Joint determination of outpatient treatment support model (telemedicine, supervised care, home-based care) with a TB specialist;
2. Monitoring of patients' health status and treatment progress;
3. Referral for laboratory and instrumental tests to regional TB centers or other facilities;
4. Organization of specimen collection and transport for bacteriological examination;
5. Dispensing and monitoring of anti-TB medications (prescribed by a TB specialist);
6. Patient education on hygiene and measures to reduce transmission.[103]

Primary care facilities must apply separately to NHSU for additional TB services contracts under the PHC package. Payment is based on a monthly capitation rate (UAH 835 for 2025), with adjustment coefficients of 0.75 for each continuation month and 2.0 for treatment completion.

However, uptake has been inconsistent: only 21.8% of PHC providers were contracted to deliver DOT services in 2021, 24.6% in 2022, and 20.5% in 2023,[104] undermining equitable access to services across regions.

Prior to 2022, PMG funding for TB demonstrated a positive trend, but this changed after the onset of war (see **Table 11** below). **These changes must be assessed alongside population displacement and service disruptions in occupied regions.**

A comprehensive costing study of Ukraine's National Strategic Plan (NSP) 2026-2030 is currently underway with WHO support using the Integrated Health Tool for TB[105]. The study aims to estimate total costs for TB interventions, health system requirements, and programme support activities. Preliminary results are expected by the end of 2025 and will inform planning and budgeting for the next five-year period.

[102] Cabinet of Ministers of Ukraine. Resolution No. 1503 of December 24, 2024 "On some issues of the implementation of the programme of state guarantees of medical care for the population in 2025".
[103] National Health Service of Ukraine. The Programme of Medical Guarantees 2025. PHC Service Package.
[104] Health financing in Ukraine: reform, resilience and recovery. Copenhagen: WHO Regional Office for Europe; 2024.
[105] https://tb.integratedhealthtool.org

Ukraine is among the first countries in the EECA region to implement social contracting for TB services, enabling public funding of community-based TB services. According to CPH, total funding for non-governmental organizations was UAH 291.1 thousand in 2023, increasing to approximately UAH 3.5 million in 2024. By September 2025, UAH 2.2 million had been disbursed under social contracting during this year.

Table 11. Financing of TB Services by NHSU, 2021-2024

Indicator	*2021*	*2022*	*2023*	*2024*
Amounts paid (UAH thousand)	1,518,584.4	1,169,839.4	853,392.0	779,865.7
Amounts paid (USD)*	55,625,802	31,962,825	22,457,683	18,568,230
Total payments to health care providers (for all types of care) by NHSU (UAH thousand)	123,006,780.9	145,656,392.3	133,850,227.7	151,306,502.3
Share of payments for TB treatment in total	1.2%	0.8%	0.64%	0.52%

* - based on USD/UAH exchange rate of the National Bank of Ukraine as of 31 December of the given year; https://bank.gov.ua

Source: NHSU annual reports 2022-2024; https://edata.e-health.gov.ua/e-data/zviti

Another major challenge is the extensive damage to health infrastructure, with destruction of facilities, communications and medical equipment. According to CPH, as of 25 September 2025, 16 of 25 regional TB centers had been damaged, affecting buildings, utilities, equipment, and transport. Only one center has been fully restored; four have undergone partial restoration; four are undergoing repairs; and seven have not yet begun restoration. The total estimated cost of reconstruction of damaged TB facility is approximately UAH 977.5 million.

In conclusion, the Government of Ukraine has implemented substantial health financing reforms in recent years, including the strengthening NHSU as a single purchaser, the expansion of the PMG, and the adoption of modern provider-payment mechanisms. These reforms have strengthened the structure and transparency of public financing, supported the inclusion and regulation of TB services within dedicated PMG and PHC packages, and helped maintain system resilience despite significant fiscal pressures during wartime. Centralized procurement has ensured standardized purchasing of medicines, diagnostics and other commodities, contributing to more consistent support for TB services.

However, significant challenges persist. NHSU financing for TB services declined by about 40 percent between 2021-2022 and 2023-2024, while external funding remains unpredictable, creating a constrained environment for service delivery. These reductions must be interpreted in the context of population displacement and loss of service capacity in occupied territories, yet they still limit the resources available for programme functioning. Engagement of primary health care facilities in TB outpatient support remains limited, with only one in five PHC providers contracted to deliver these services in 2023, undermining equitable access and continuity of care. Together, these factors highlight the need for sustained investment and stronger integration at PHC level and to ensure adequate financing and delivery of TB services in the coming years.

Recommendations

No.	*Recommendation*	*Timeline*	*Implementer(s)*
1	Protect public funding for essential TB services and core public health functions to ensure continuity of care. **[High priority]**	Continuous	Cabinet of Ministers
2	Further strengthen the role of PHC providers in TB service delivery by consolidating the optional	Medium-term	NHSU, CPH

	TB service package into the core PHC package under the Programme of Medical Guarantees, ensuring sufficient contracting of PHC providers across regions. **[High priority]**		
3	Consider applying additional adjustment coefficients to capitation rates under the TB care package of the Programme of Medical Guarantees to reflect regional and local differences in service delivery conditions and facility workload.	Medium-term	NHSU

* * *

Human resources for TB response

Ukraine's National TB Programme has made notable progress in strengthening human resource management within the TB sector. These developments reflect a strategic approach to workforce development, contributing to improved access, and greater resilience of TB services across the country.

Legislative and strategic advances – most importantly the 2023 Law on Tuberculosis and the 2024-2026 Strategy for the development of TB services – have provided a solid foundation for people- and patient-centered care and improved workforce governance. The ongoing transition from hospital-based model to ambulatory and community-oriented care has expanded access and enabled decentralized service delivery. The integration of social, psychological, and material support into primary health care in six pilot regions has further strengthened adherence and continuity of care, particularly for vulnerable groups such as internally displaced persons and populations living in areas affected by hostilities.

Training programmes for family doctors and PHC providers have facilitated their increasing role in case detection, outpatient treatment, monitoring of adverse events, and patient counselling. The development of quality-assurance and monitoring systems has enhanced oversight, supported feedback-based improvements, and generated essential data on workforce utilization and training needs.

According to the Center of Public Health of Ukraine, as of August 2024 a total of 5,584 healthcare workers were employed in TB service institutions, 82% of whom were women. While men account for roughly 22% of doctors and administrative staff, the proportion of women is considerably higher among junior and mid-level medical personnel, ranging from 90% to 97%. However, gender representation shifts markedly in leadership positions: across 25 regional phthisiopulmonology centers, men hold two-thirds of management posts (16 men compared with 9 women)[106].

Urban TB centers are generally better staffed and equipped with more advanced diagnostic and treatment tools, whereas rural and frontline areas face significant shortages of TB doctors and nurses. The war has contributed to an outflow of health professionals and constrained the ability to replace departing staff. In regions most affected by hostilities service provision is impaired by infrastructure damage, reduced patient access, and likely shortages of human resources. However, precise data on staffing levels and distribution in these areas were not available.

The main human resource challenges for the TB response can be summarized as follows. First, staff shortages persist, particularly in rural and frontline regions, accompanied by uneven distribution of personnel – with concentrations in regional centers and shortages at the periphery. Second, limited availability of reliable data on the number and distribution of TB doctors (phthisiatricians), other specialists, nurses, and support staff hampers informed decision-making and effective service planning. No quantitative assessments have been conducted to determine how population displacement and staff relocation have affected workforce capacity, and data on vacancies and unfilled posts are insufficient.

Based on indirect indicators – such as high workloads, rising TB incidence, reduced service access, and the impact of active hostilities – human resource shortages are likely most acute in:

- Southern and eastern regions affected by hostilities (Donetsk, Luhansk, Kherson, Zaporizhzhia), where staff outflow, infrastructure damage, and logistical constraints are pronounced;

[106] https://mediacenter.org.ua/women_dominate_the_healthcare_workforce_in_Ukraine's_TB_facilities,_but_men_hold_leadership_roles/?utm_source=chatgpt.com

- Regions hosting large numbers of IDPs, where patient loads have increased without corresponding adjustments in human or material resources;
- Regions of central Ukraine (e.g., Dnipropetrovsk and Kirovohrad), which have shown marked increases in TB notifications that may signal underlying shortages of healthcare personnel[107];
- Remote rural areas, where family doctors have a particularly important role but often lack adequate skills in TB case management.

According to the NTP, levels of staff burnout are very high due to war-related pressures, increased medical and social responsibilities, and the psychological toll of working in high-risk environments. At the same time, remuneration is widely perceived as inadequate, contributing to low motivation and high turnover.

Family doctors often lack appropriate competencies and/or motivation to manage TB cases. A recent study *TB Care in Ukraine: Understanding Access Barriers at the Primary Healthcare Level*[108], found that family doctors in selected districts of Kyiv, Odesa, Mykolaiv, and Volyn oblasts had limited practical experience in TB management, despite having completed several training courses.

Human resources are a cornerstone of the successful implementation and sustainability of the patient-centered TB care model in Ukraine. The model's effectiveness depends not only on modern technologies and clinical protocols but also on the capacity, motivation, and continuous professional development of the health workforce. Despite shortages of specialists, uneven distribution of personnel, and increasing workloads, Ukraine's health system continues to rely on the dedication and adaptability of its professionals.

Strengthening training and capacity-building – particularly at the PHC level – is essential to ensuring a functional and sustainable people- and patient-centered approach. Enhancing competencies in TB detection, case management, counselling, and infection control will improve service quality and treatment outcomes. Equally important measures are to improve working conditions, ensure adequate remuneration, and introduce non-financial incentives to maintain motivation and reduce burnout.

Integrating TB services into the broader PHC system requires strong leadership, coordination, and clearly defined roles across levels of care. Continued capacity building, supportive supervision, and collaboration with local communities will be crucial for effective implementation of reforms.

Ultimately, the resilience and long-term success of people-centered TB care model in Ukraine will depend on sustained investment in human resources, promotion of professional excellence, and creation of a supportive environment that enables healthcare workers to provide high-quality, compassionate, and accessible care.

Recommendations

No.	*Recommendation*	*Timeline*	*Implementer(s)*
1	Conduct a comprehensive assessment of human resource capacity within specialized TB services at both inpatient and outpatient levels to inform strategic and operational planning.	Medium-term	MoH, CPH, Partners
2	Regularly update the national registry of TB human resources, taking into account system-level needs and territorial accessibility.	Short-term, continuous	MoH, CPH

[107] Krokva D, Mori H, Valenti S, Remez D, Hadano Y, Naito T. Analysis of the impact of crises tuberculosis incidence in Ukraine amid pandemics and war. Sci Rep. 2025 May 16;15(1):17045. doi: 10.1038/s41598-025-01723-7. PMID: 40379776; PMCID: PMC12084344.

[108] A Boiko, U Snidevych, V Odrynskyi, M Duda, P Pavlenko, B Hinchey, N Avaliani, E Polomoshnova, M Samko, A Tokar, TB Care in Ukraine: Understanding Access Barriers at the Primary Healthcare Level, *European Journal of Public Health*, Volume 34, Issue Supplement_3, November 2024, ckae144.1589, https://doi.org/10.1093/eurpub/ckae144.1589

3	Develop and strengthen incentive mechanisms to attract and retain young professionals in TB services, including career development pathways, burnout prevention measures, and targeted incentives for work in remote and high-risk areas. **[High priority]**	Medium-term	MoH, CPH, Oblast health administrations
4	Conduct regular assessments of workforce shortages at national and regional levels, including forecasting to anticipate future staffing needs. **[High priority]**	Medium-term, continuous	MoH, CPH, Oblast health administrations
5	Ensure continuity and institutionalization of capacity building programmes for PHC providers focused on early TB detection and diagnosis, with regular updates to training materials and adoption of modern standards of care.	Continuous	MoH, CPH, Partners
6	Engage medical students and residents from higher medical education institutions in research and evaluation activities under the NTP to increase interest in and attractiveness of careers in phthisiopulmonology.	Medium-term	MoH, CPH, Partners

* * *

Management of pharmaceuticals and other medical products

Policy and governance

In recent years, Ukraine has made significant progress in strengthening the institutional and regulatory framework of its Procurement and Supply Management (PSM) system for anti-tuberculosis medicines, despite severe challenges posed by the ongoing war and economic pressures. The *National Strategy to Fight HIV/AIDS, TB, and Viral Hepatitis until 2030*, together with the Operational Plan for 2024-2026, define national priorities for TB control, including ensuring uninterrupted medicine supply, promoting rational use of medicines, and expanding access to modern treatment and preventive regimens.

The Center of Public Health (CPH) of the Ministry of Health serves as the central management unit of the national TB programme and the lead body for PSM, responsible for forecasting drug needs, monitoring stock levels, preparing procurement requests, and coordinating with regional authorities and donors.

State procurement of anti-TB medicines and related commodities is conducted through the State Enterprise 'Medical Procurement of Ukraine' (MPU), which operates under MoH and uses the ProZorro electronic system. This model ensures a high level of transparency and competition in public procurement and, as government financing and national procurement gradually resume, will enable greater predictability of supply and reduce administrative delays between procurement cycles. MPU signs multi-year (up to three-year) framework contracts with suppliers, supporting the long-term sustainability of supply and improving budget planning.

Within MoH coordination mechanisms, a Working Group on the Procurement and Supply of Medicines for Socially Significant Diseases, including TB, operates to enhance communication between national stakeholders and international partners (TGF, WHO, Stop TB Partnership / GDF and others). This structure facilitates regular data exchange and joint decision-making to ensure continuity of supply and strengthen the sustainability of the PSM system.

Forecasting and quantification

The mission noted that the country's forecasting system for anti-TB medicines continues to evolve from static annual estimates toward a more analytical, data-driven model that incorporates real-time consumption, shelf-life monitoring, and projected case detection trends.

CPH plays a central coordinating role through its Pharmaceutical Management and Inventory Control Department, which collects and verifies data from regional phthisiopulmonology centers, analyses trends, and provides recommendations for procurement planning. CPH staff have been trained in the QuanTB tool, which is applied at both central and regional levels in line with WHO/GDF guidance.

The list of medicines included in the national forecast aligns with national TB treatment standards and clinical guidelines. Although the National Essential Medicines List remains outdated, this does not affect the availability of essential TB medicines procured for national programmes. All medicines required for the treatment of DS-TB, DR-TB and TB infection, for both adults and children, are included in national forecasting and procurement plans.

Demand forecasting uses QuanTB, which, since 2021, has replaced percentage-based methods with calculations based on the actual number of patients on treatment and projected new cases. The tool enables quantification of medicine needs by regimen (including BPaLM, all-oral short regimens, and pediatric formulations), patient category, and region, while modelling stock levels and identifying risks of shortages or over-stocking.

National QuanTB files are currently updated annually; however, quarterly updates are planned to better reflect changes in consumption, epidemiological trends, and supply volumes. CPH validates and consolidates regional data, ensuring uniform quantification standards and integrating stock and epidemiological information into national forecasts.

After validation, QuanTB data are exported to Excel for further analysis and merged with information on central warehouse stock levels, expected deliveries, and other relevant parameters. Based on these consolidated data, CPH prepares analytical reports for MoH and MPU to guide procurement planning and delivery schedules in line with budget allocations and donor-funded programmes.

Under wartime conditions, CPH adapts forecasts to account for changes in consumption patterns, restricted access to certain regions, and internal population displacement. Demand figures are aligned with available budget resources – predominantly donor-funded – which supports supply chain resilience and helps maintain timely distribution of medicines.

Forecasting results and analytical summaries are shared with the MoH, MPU, and donor partners for review and agreement on procurement volumes. Despite effective coordination, the current regulatory framework (MoH Order No. 1062 of 12 October 2016) remains outdated and does not reflect modern analytical tools. Nevertheless, CPH has introduced updated operational practices, including quarterly data monitoring and regular consultations with regional specialists and donor partners.

Data quality and timeliness from regional facilities remain key challenges, underscoring the need for regular forecast updates aligned with epidemiological trends and population movement. QuanTB is the core quantification and risk-analysis tool at national, regional, and penitentiary levels, and its use should be institutionalized in national regulatory documents.

Procurement

Before February 2022, most anti-TB medicines in Ukraine were procured using state budget funds, and all products were registered in the country. Procurement plans for 2026 have already been included in the national budget passport, and MPU remains the authorized procurer once the budget is approved, typically in January-February.

Since February 2022, procurement has been conducted primarily through donor funding – mainly from TGF and, to a lesser extent, USG – using international mechanisms such as the Stop TB Partnership's Global Drug Facility (GDF). Under this arrangement, medicines are not registered in Ukraine but are delivered under MoH humanitarian aid orders to ensure uninterrupted treatment during the ongoing crisis. Domestic procurement remains limited, though MoH continues to provide coordination and regulatory oversight. The national procurement system operates with clearly defined responsibilities shared between the MoH, CPH and MPU.

MPU serves as the authorized agency for state-funded procurement, conducting the procedures through the ProZorro electronic system to ensure transparency and competition. Following approval of the annual budget passport, MoH instructs MPU to initiate procurement procedures. MPU signs three-year framework contracts with suppliers to ensure predictable supply. These allow adjustments through supplementary agreements without initiating new tenders, increasing efficiency and flexibility.

Disposal of expired or unfit humanitarian medicines is regulated by MoH Order No. 242 of 24 April 2015 'On approval of Rules of utilization and destruction of medicines' (amended by MoH Order No. 1602 of 06 September 2022), and Cabinet of Ministers Resolution No. 728 (2000), which define procedures for safe destruction and reporting, and complement warehouse and inventory management controls.

The procurement and delivery schedule for anti-TB medicines is based on QuanTB outputs; however, lengthy validation and approval procedures may occasionally delay tenders or deliveries. During shortages of rifampicin-containing medicines in 2024–2025, which occurred due to a global shortage of active pharmaceutical ingredients (APIs) for rifampicin-containing products, temporary stock-outs occurred. These were mitigated through emergency donations from charitable organizations until new deliveries arrived.

Overall, the PSM framework is well-established and has demonstrated resilience under wartime conditions, maintaining functionality despite logistical disruptions. Clear role delineation among the MoH, CPH and MPU, combined with transparent procurement through ProZorro, ensures accountability and effective coordination.

Distribution and storage

Ukraine employs a centralized distribution model with some decentralization elements. Upon arrival in the country, all anti-TB medicines procured under TGF project budget are delivered to a central warehouse. Afterwards, CPH maintains oversight of inventory data and coordinates with MPU and logistics partners to ensure national stock visibility.

Importation of anti-TB medicines proceeds without delay under simplified humanitarian aid procedures. Consignments are cleared through customs and sanitary control using an expedited process that exempts humanitarian shipments from standard registration and import licensing requirements. Customs clearance is jointly managed by MoH, State Customs Service, CPH, GDF, and the logistics agent.

Upon arrival at the national warehouse, CPH determines regional distribution volumes, while MPU sets delivery schedules based on CPH recommendations taking account of stock levels, consumption, and stock-out risks across regions. Medicines are distributed primarily to regional phthisiopulmonology centers, with occasional delivery to other facilities when needed. Quality control procedures at regional facilities follow the MoH Order No. 584 (2003), which requires designated persons in each facility to perform visual inspections and monitor storage conditions. The State Service on Medicines conducts periodic inspections to verify compliance.

Before 2025, distribution often occurred immediately upon delivery to the country. This practice was revised based on partner recommendations, and since 2025 most stock is maintained centrally, while regions hold a six-month buffer. CPH reviews regional data monthly and prepares distribution or redistribution plans. Urgent redistributions occur when regions face stock-out risks or approaching expiries.

Six storage warehouses have been damaged or destroyed since 2022. Current humanitarian stocks are centralized at the Farmasoft warehouse in Kyiv, which serves as the central-level storage facility. As the mission was conducted virtually, direct verification of storage conditions was not possible, and follow-up field assessment is recommended.

Overall, centralized distribution is coordinated by CPH and MPU and functions effectively, supported by regional participation and redistribution mechanisms.

LMIS and Early Warning System

The Pharmaceutical Management and Stock Control Department of CPH serves as the national coordinating body for TB medicine management. Its key functions include:

- Consolidation of data from regional TB facilities;
- Analysis of stock levels and calculation of months of stock (MoS);
- Identification of risks of shortage, expiry, or over-stocking; and
- Preparation of recommendations for distribution, redistribution, or procurement adjustments.

CPH effectively performs the role of the national Early Warning System (EWS) for anti-TB medicines through monthly monitoring of data submitted by all regions, in accordance with internal regulations. Information is submitted electronically by regional coordinators and health facilities using Excel templates via email. Received files are stored in internal folders, consolidated, and used to prepare analytical summaries and reports.

The results of these analyses are presented in the monthly analytical briefs of the PSM Working Group, which include stock coverage indicators, consumption forecasts, expected deliveries, expiry

information, and identified risks. These briefs are shared with CPH management, donors and partners and form the basis for recommendations on stock redistribution among regions. Final materials are also uploaded to the CPH document management system for approval and dissemination to management and partners.

Internal procedures are defined in two key Standard Operating Procedures (SOPs) — *"Preparation of Proposals for Risk Mitigation"* and *"Participation in the Coordination of Medicine and Supply Distribution Across Regions of Ukraine"*.

Internal procedures are defined in two key Standard Operating Procedures (SOPs) – *'Preparation of proposals for risk mitigation'* and *'Participation in the coordination of medicine and supply distribution across regions of Ukraine'*. These SOPs describe the full risk-response cycle, including:

- Analysis of stock and expiry data;
- Preparation of redistribution proposals;
- Coordination with TB and HIV departments and donor partners;
- Organization of interregional deliveries and distribution; and
- Verification of quality certificates and supporting documentation.

In agreement with the Global Fund, CPH also updates data in the Programme PSM Tracking Tool, which enables comparison of planned and actual deliveries by funding source (state budget, TGF, etc.), as well as monitoring of stock levels, expiries, and shortages. Through these activities, CPH performs the national EWS function, covering the entire risk-management cycle from stock monitoring and expiry data to initiating redistributions and preventing losses.

However, most processes are still conducted using paper-based or semi-electronic tools, without a centralized electronic platform. Data compilation and analysis are performed manually in Excel, which slows response times and increases the likelihood of discrepancies across regional reports.

To address these limitations, CPH has initiated the development of an automated stock management and reporting process under the Information System for Monitoring of Socially Significant Diseases. This system is gradually being expanded and will include new reporting and analytical modules.

The new electronic reporting module will enable centralized collection and validation of stock, expiry, and movement data, as well as automated calculation of months of stock, expiry risks, and related indicators. Additional proposed functionalities – including integration of data from QuanTB and the PSM Tracking Tool, and the establishment of foundational elements for a national Logistics Management Information System (LMIS) – are recognized as important enhancements. However, their implementation may present technical challenges within existing medical information systems and may therefore require further technical assessment and discussion.

As automation progresses, data accuracy and timeliness will become increasingly important. For effective LMIS operation, clear timelines must be established for regional data submission and validation prior to national analysis, supported by regular data quality audits.

Despite existing limitations, CPH has already established a systematic and structured approach to stock management, combining:

- Documented procedures for risk management and redistribution;
- Regular analyses of stock availability and expiry data;
- Close coordination with regional authorities and donors; and
- Initial steps toward digital transformation through the transition from Excel-based tools to an automated LMIS platform.

The establishment of an automated LMIS will mark a significant step toward full digital integration and real-time visibility of TB medicine supply chain in the country.

Financing and sustainability

Since February 2022, financing of the TB programme in Ukraine has been primarily supported by donor funding. The majority of anti-TB medicines and related commodities are fully covered by external sources, mainly through the Global Fund and, to a lesser extent, USG, using international procurement mechanisms such as GDF.

Domestic financing remains limited. Procurement using state budget funds in 2026 will be possible only after approval of the annual budget passport; however, the allocated resources are expected to cover only a portion of the programme overall needs. A limited amount of additional support is provided from local budgets and humanitarian organizations, mainly for transportation, utility costs, or targeted assistance to specific facilities.

Overall, the financial sustainability of TB activities in Ukraine remains highly dependent on donor support, and there is a continuing risk of programme disruption should external funding decrease in the absence of stable domestic financing.

In summary, several aspects of procurement and supply management system for TB medicines have been strengthened. Coordination mechanisms under MoH have improved communication and alignment among government institutions, donors, and partners. The CPH Pharmaceutical Department provides methodological support to regional facilities, helping ensure consistent approaches to quantification, forecasting, stock monitoring, reporting, and redistribution.

QuanTB is now used across all regions as the standardized tool for forecasting medicine demand and informing procurement planning, contributing to greater uniformity and transparency in supply chain management.

At the same time, the normative document regulating the quantification process (MoH Order No. 1062) is outdated and requires revision to reflect current practices and incorporate QuanTB. The EWS relies on multiple unintegrated data sources – including Excel files, QuanTB, and the PSM Tracking Tool – which increases workload and complicates timely, accurate analysis for stock management.

Discrepancies persist between planned and actual medicine consumption, affecting the accuracy of forecasting, as the prolonged war continues to limit the reliability of demand projections. As described in the TB Epidemiological Review 2025, the annual percentage change in TB notifications was +16.1% in 2022-2023 and −8.3% in 2023-2024. Although an increase in TB incidence had been anticipated in 2025, a decrease of 18% was observed during the first nine months of the year. This has resulted in some overstocking of medicines and an increased risk of expiry. Notwithstanding these uncertainties, the projected distribution of treatment regimens broadly corresponds to the distribution observed in practice.

Continued financial constraints under martial law also limit progress toward full state-funded procurement, leaving the programme highly dependent on donor support to maintain uninterrupted supply of TB medicines and other commodities.

Recommendations

No.	*Recommendation*	*Timeline*	*Implementer(s)*
1	Accelerate development and rollout of the LMIS under the Information System for Monitoring of Socially Significant Diseases to enable timely electronic tracking of medicine movement. **[High priority]**	Medium- to long-term	MoH, CPH
2	Develop a minimum set of PSM indicators and a data visualization module within LMIS to automate stock analysis, logistics monitoring, and procurement planning.	Medium-term TA to be included in the	MoH, CPH, TGF, GDF

	[High priority]	new TGF application	
3	Update the national quantification methodology by adopting QuanTB as the standard forecasting approach. **[High priority]**	Short-term	CPH, GDF
4	Institutionalize quarterly updates of regional QuanTB files, including case and stock data, to support the early warning system. **[High priority]**	Short-term	MoH, CPH
5	Strengthen regional consumption planning and improve the quality of QuanTB files through training, standardized templates, and regular feedback from the central level. **[High priority]**	Continuous	MoH, CPH, GDF
6	Enhance analysis of alignment between planned and actual medicine use at regional level and coordinate findings with regions to improve consumption planning, procurement, and resource utilization. **[High priority]**	Short-term	MoH, CPH, PSM WG
7	Conduct TB medicine procurement and supply planning twice per year, covering an 18-month forecasting period, and divide each order into two deliveries to mitigate epidemiological, forecasting, and delivery risks. **[High priority]**	Short-term	MoH, CPH, TGF, GDF
8	Maintain and expand transparent public procurement practices and ensure coordination with donor procurement cycles. **[High priority]**	Continuous	MoH, MPU, other partners
9	Strengthen procurement sustainability through multi-year supplier contracts and multi-year budget allocations for medicines and diagnostics, aligned with consumption needs and minimizing the risk of expiry. **[High priority]**	Medium- to long-term	MoH, MPU, other partners
10	Plan a comprehensive in-person assessment of quality control and pharmacovigilance systems during a future mission, including field visits to warehouses, laboratories, and regional facilities.	Medium-term	WHO, TGF, GDF, partners

* * *

Data systems for TB

TB surveillance system

In Ukraine, TB surveillance is centrally coordinated by the Ministry of Health (MoH) through the Center of Public Health, which oversees planning, implementation and monitoring of TB control activities. The system is vertically structured, with services delivered at national, regional (oblast), district and PHC levels. Specialized TB facilities are responsible for diagnosis and treatment initiation, while PHC providers play a key role in identifying people with presumptive TB through active and passive screening, referring them to specialized services and supporting treatment adherence in the community.

According to national legislation, detection of people with TB is carried out by health workers in line with the national standard of medical care. [109] When a person presents with symptoms suggestive of TB, health care providers are obliged to register and notify the suspected case in accordance with the Procedure for TB epidemiological surveillance.[110]

TB surveillance is organized through a standardized case-based recording and reporting system operating at district, oblast and national levels. At the central level, the MoH Center of Medical Statistics and CPH jointly manage surveillance activities. At regional level, TB services are coordinated by phthisiopulmonology centers, which also host expert commissions for clinical management, particularly of DR-TB. Diagnosis of TB is confirmed in specialized institutions and must be registered and notified in line with national procedures. TB cases are classified according to case definitions set out in the national Criteria for determining cases of infectious and parasitic diseases subject to registration.[111]

The surveillance system still relies on both paper-based and electronic tools. Paper forms include referral slips, laboratory registers, individual treatment cards and notification forms. Once a case is confirmed, it is registered in paper and electronic formats and notifications are sent to relevant public health institutions within defined timelines. This dual system supports comprehensive data collection and integration of TB surveillance into wider public health monitoring but also adds complexity and workload.

The primary national digital platform is the Information System for Socially Significant Diseases (ISSSD), which replaced e-TB Manager in 2022. ISSSD is a web-based, real-time system that consolidates data across four modules (Case, Laboratory, Analytics/Reporting and Administration) and serves as a unified repository for TB, HIV and hepatitis C surveillance. It supports monitoring and evaluation, procurement planning and stock management.

Data entry into ISSSD is based on information collected through standardized paper forms at district, hospital, regional and national levels. The Case module captures detailed information on all confirmed TB cases, including drug-resistant forms. The Laboratory module records diagnostic results (smear microscopy, Xpert, culture and DST). The TB01 treatment card, which tracks daily drug intake, is integrated into the system. Access is role-based, with differentiated permissions for users, read-only viewers and administrators.

Despite digitalization, reporting remains partially manual. Aggregated data are still compiled in Word and Excel, and calculations for notification rates, treatment outcomes and cohort analyses are done

[109] Law of Ukraine "On Combating Tuberculosis", Article 9, Part 1; https://xn--80aagahqwyibe8an.com/ukrajiny-zakony/zakon-ukrajini-pro-vnesennya-zmin-zakonu-2012-18976.html [accessed on 16 October 2025]

[110] Order of the Ministry of Health dated 03/09/2021 No. 406, registered in the Ministry of Justice on n May 11, 2021 under No. 622/36244 On approval of the Procedure for epidemiological surveillance of tuberculosis and changes to the criteria for determining cases of infectious and parasitic diseases that are subject to registration https://zakononline.com.ua/documents/show/496953___675109 [accessed on 01 November 2022]

[111] Order of the Ministry of Health dated December 28, 2015 No. 905, registered in the Ministry of Justice on March 12, 2016 year under No. 379/28509 https://zakononline.com.ua/documents/show/364759___664783#n13 [accessed on 01 November 2022]

manually. Data quality assurance relies on built-in validation rules (mandatory fields, format controls, cross-checks) and unique patient identifiers that prevent duplicate entries.

M&E specialists at regional and national levels regularly export ISSSD data to Excel and verify them against paper records. Discrepancies are resolved through cross-checking and, when needed, review of original documents. However, advanced TB-specific data validation and standardized data quality procedures are not yet fully developed.

In addition to ISSSD, laboratories use customized Excel-based registers and laboratory modules within hospital information systems, which differ across oblasts and are not integrated with the national platform. Although GxAlert is used to automatically capture results from GeneXpert machines, overall laboratory reporting remains fragmented. There is still no unified Laboratory Information Management System (LIMS) to ensure timely, standardized, and consistent data exchange between laboratories and healthcare providers.

Additional digital tools have been introduced to support treatment adherence and community engagement. These include the Video Support Treatment (VST) application, which enables patients to record medication intake for review by health care providers; evriMed electronic pillboxes and SMS reminders for monitoring DR-TB patients; and the OneImpact mobile application for community-led monitoring of TB services. The QuanTB[112] desktop tool is used for forecasting drug needs and managing stock levels, drawing on data from ISSSD as well as paper-based consumption reports.

Beyond the NTP systems, several other digital platforms are used for TB-related data collection. Regional Centers for Control and Prevention of Diseases (CCPDs) operate a case-based surveillance application that captures emergency notifications (Form 058) and facilitates electronic transmission to regional institutions for response and analysis. Some centers also use Google Drive to compile contact tracing data. Hospital-based information systems at the oblast level maintain records for all inpatients; however, these systems are not integrated with ISSSD and vary widely in structure and functionality, limiting interoperability. NGOs also maintain databases to track TB patients, key populations, and beneficiaries of community-based services, complementing the national registry and supporting local interventions.

Monitoring and evaluation (M&E)

Implementation and coordination of the TB programme are led by the Center of Public Health, where the monitoring and evaluation (M&E) unit plays a central role in tracking performance, assessing progress against national targets, and ensuring alignment with strategic priorities. The M&E unit works closely with other CPH departments – including finance, research, pharmaceutical management, and IT – to ensure effective cross-sectoral coordination. In practice, the M&E function is delivered by a medical statistician, responsible for compiling quarterly Form 33-short and annual Form 33 reports, and an analytics specialist, who works with ISSSD, collects eight quarterly reporting forms, maintains quality assurance documentation and indicators, conducts monitoring visits, and performs related analytical tasks.

At the central level, the MoH's Center of Medical Statistics has one full-time staff member dedicated to TB reporting, responsible for compiling Forms No. 8 and No. 33. At the oblast level, M&E functions are typically performed by two to three specialists within the organizational and methodological units of regional TB centers.

At the district level, M&E functions are defined by current regulatory and legal acts and methodological guidelines, and are implemented within the established organizational structures of health-care institutions. Variations in workload and task distribution among specialists are influenced by staffing levels and specific organizational arrangements. However, there is no standardized or formalized

[112] https://msh.org/resources/quantb/

structure for M&E teams at the oblast level, and responsibilities vary considerably depending on local resources, institutional capacity, and operational priorities.

M&E visits from the national to oblast and district levels are generally conducted at least once per year per oblast. Due to security and logistical constraints, some visits have shifted to virtual formats. Within oblasts, M&E visits to districts and PHC facilities also occur, but frequency and organization vary widely, and supervision is often conducted remotely (e.g. by phone).

In some regions, collaboration agreements between PHC structures, oblast hospitals and epidemiological services support TB programme implementation and improve operational efficiency. Overall, however, M&E at regional level remains fragmented, with no uniform structure and significant variation across oblasts.

Vital registration system

Death registration is governed by the *Law 'On state registration of civil status acts'*[113] and related regulations.[114] The process begins with the issuance of a medical death certificate (Form No. 106/o), completed by the attending physician based on clinical observations and medical records. If a death occurs outside a health facility, the certificate may be issued by a pathologist or emergency doctor; in cases of violent or unexplained death, a forensic medical expert is involved.

The existing registration system involves the transfer of paper documents along a sequential chain: a medical certificate of death from a health care facility to the state civil registration bodies, issuance of the official death certificate by these bodies to the relatives or representatives of the deceased, and subsequent transfer of paper documentation from the civil registration bodies to the state statistical authorities.

When a person dies, a medical certificate of death (Form 106/o) is issued by the treating physician based on clinical observations and entries in the medical records. If the death occurs outside a medical facility (at home, in a public place, etc.), the certificate may be issued by a pathologist or emergency physician based on a review of medical records and autopsy findings.

The medical certificate of death is issued in two copies: the first is given to the relatives or other persons responsible for burial, while the second remains at the health care facility, where it is stored for one year before being destroyed. In rural areas without a physician, a paramedic may issue a death certificate. In cases of violent or suspected violent death, sudden or unexplained death, inability to establish identity, or the sudden death of infants under one year of age, a forensic medical expert is required.

Information on civil status acts (including deaths) is entered into the State Register of Civil Status Acts of Citizens, an electronic information system maintained by the civil status registration departments. The Ministry of Justice is the holder of the register, while the state enterprise 'National Information Systems' serves as the administrator. Bodies responsible for civil status registration include dedicated civil registration departments, village executive bodies, city councils, and Ukrainian diplomatic and consular missions abroad. An application for death registration must be submitted no later than three days from the date of death. Following registration, the applicant receives an official death certificate.

For administrative purposes, data are exchanged with the National Health Service, the Unified State Demographic Register, the State Register of Individual Taxpayers, the State Voter Register, and the Pension Fund.

Mortality data are published by the State Statistics Service, which serves as the sole authority responsible for official demographic indicators. Detailed mortality statistics are published annually in

[113]Закон України Про державну реєстрацію актів цивільного стану https://zakon.rada.gov.ua/laws/show/2398-17 [accessed on 01 November 2022]

[114] MoJ order 'On the approval of the Rules for state registration of acts of civil status in Ukraine'; http://zakon2.rada.gov.ua/laws/show/z0719-00 [accessed on 01 November 2022]

open-access collections available on the websites of the State Statistics Service and its regional offices. In addition, annual and monthly mortality data dating back to 1989 are available through the State Statistics Service website.

Ukraine has made notable progress in strengthening its TB data systems. The transition to the ISSSD platform has enabled real-time, case-based surveillance. Automated capture of GeneXpert results through GxAlert, together with the expansion of digital adherence and community-monitoring tools, has further enhanced surveillance and patient support. A dedicated M&E unit within the CPH provides essential oversight of the TB programme. The vital registration system ensures standardized documentation and timely registration of mortality data, including TB-related deaths.

Several important gaps still need to be addressed to improve the efficiency, completeness, and integration of TB surveillance. The ISSSD platform lacks automated data quality controls, and many key indicators continue to be calculated manually. Digital systems remain only partially interoperable, resulting in parallel data flows and fragmented reporting. Laboratory reporting is often disjointed, relying on paper forms and non-integrated tools in the absence of a national LIMS. M&E structures differ significantly across oblasts, and the lack of a national M&E manual limits standardization. Mortality reporting depends on paper-based documentation, delaying the availability of TB-related death statistics.

Recommendations

No.	*Recommendation*	*Timeline*	*Implementer(s)*
1	Strengthen automated data quality assurance mechanisms within the ISSSD platform. **[High priority]**	Short-term	CPH, MoH
2	Enhance interoperability and streamline data flows across TB-related digital systems by automating integration of external data into ISSSD using personal identifiers, thereby establishing ISSSD as the single authoritative source of TB data. **[High priority]**	Short-term	CPH, MoH
3	Develop automated dashboards and reporting tools within ISSSD to calculate key TB indicators directly from case-based data, reducing manual processing, minimizing errors, and ensuring timely and standardized reporting. **[High priority]**	Short-term	CPH, MoH
4	Develop and implement a national LIMS integrated with ISSSD to ensure standardized, timely, and complete reporting of TB laboratory data, replacing fragmented Excel-based registers and facility databases. **[High priority]**	Short-term	CPH, MoH
5	Standardize and strengthen M&E practices at all levels by establishing formal M&E team structures at oblast and district levels to ensure consistent implementation and supervision. **[High priority]**	Short-term	CPH, MoH

6	Develop a national M&E manual defining indicators, validation procedures, and reporting standards to improve data quality, harmonize practices, and support evidence-based decision making. **[High priority]**	Short-term	CPH
7	Ensure timely and complete reporting of TB-related deaths. **[High priority]**	Short-term	CPH, MoH

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TB research

Pillar 3 of the WHO European Regional TB Action Plan 2023-2030 focuses on intensified research and innovation, in line with the WHO Global Strategy for TB Research and Innovation. Member States are expected to ensure infrastructure, capacity and sustainable funding for TB research – including operational and implementation research – to accelerate uptake of new tools and approaches towards the End TB targets. Priority actions include:

- Revising legislation to facilitate research implementation;
- Developing costed national TB research plans;
- Establishing national TB research units with clear mandates to define, coordinate and monitor the research agenda;
- Creating a national research ethics review network to support TB research.

National TB research framework

Ukraine has made tangible progress in building an enabling environment and positioning TB research as a core pillar of the national TB response. The National Strategy for Combating HIV/AIDS, Tuberculosis and Viral Hepatitis in Ukraine until 2030 explicitly identifies research as a driver of innovation, evidence-based policy, and improved public health outcomes. The strategy is operationalized through three-year implementation plans, the most recent being the 2024-2026 Action Plan, which defines specific TB research priorities, including improving diagnostic algorithms, optimizing treatment regimens for drug-resistant TB, and evaluating integrated models of care in war-affected areas. The plan also includes epidemiological and behavioral studies to better understand transmission dynamics among displaced populations and vulnerable groups, as well as health systems research to assess the resilience and adaptability of TB services under wartime conditions.

Initiated in December 2023, Ukraine finalized the National TB Research Agenda 2023-2027 following a multi-stakeholder consultation process led by the Ministry of Health with WHO support. The agenda was developed using a WHO-endorsed methodology, including a review of key documents, thematic consultations, and two rounds of Delphi surveys involving public health practitioners, researchers, clinicians, civil society and community representatives, and external experts. The final agenda includes 52 research topics grouped into thematic domains. In 2025, the agenda was reviewed with scientific stakeholders, and an implementation framework under the leadership of the Center of Public Health was established, with contributions from academic institutions and other partners.

In addition, in 2025 a Concept of collaboration was developed and jointly endorsed, defining the core principles of cooperation, priority areas of engagement, and mechanisms for supporting joint efforts in TB research. The Concept envisages:

- Consolidation of efforts among research institutions, educational establishments, governmental bodies, health-care institutions, civil society organizations, and international partners to effectively address TB;
- Establishment of a unified research platform to coordinate scientific initiatives and facilitate information exchange;
- Prioritization of research areas and mobilization of additional resources for their implementation; and
- Expansion of partnerships, integration of new stakeholders, and strengthening of international collaboration.

The collaboration framework brings together regional phthisiopulmonology centers, research institutions, and academic departments involved in specialist training and research, as well as partner organizations supporting the introduction of innovative approaches and people-centered care. This structure aims to ensure coordinated scientific initiatives, facilitate information exchange, and strengthen partnerships among governmental bodies, civil society, and international stakeholders.

The TB research ecosystem in Ukraine comprises diverse institutions contributing to policy development, scientific advancement, and programme implementation:

Academic sector:

- *State Institution 'National Institute of Phthisiology and Pulmonology named after F.G. Yanovskiy'* (NIPhP) – the country's leading center for TB scientific research and clinical expertise, implementing multi-year studies on drug-resistant TB, comorbidities, mental health, and treatment innovations;
- *National Academy of Medical Sciences of Ukraine (NAMSU)* – responsible for planning, approving, and funding scientific research projects;
- *Universities and academic institutions* – contribute to epidemiological, laboratory, and health systems research through specialized faculties and departments.
- *Universities and academic institutions* – contribute to epidemiological, laboratory, and health systems research through specialized faculties and departments, including departments of phthisiology and pulmonology at national medical universities (particularly, National Health Care University of Ukraine named after P. L. Shupyk, and National Medical University named after O. O. Bogomolets), as well as relevant departments of medical universities in the regions.

Non-academic sector:

- *Ministry of Health (MoH)* – provides strategic direction and oversight of TB research;
- *Center of Public Health (CPH)* – coordinates and conducts TB research activities nationwide; since 2018, it has operated a dedicated Research Department supporting public health programmes;
- *Regional TB centers* – serve as sites for clinical trials, scientific research, and data collection;
- *International partners* (WHO, Global Fund and others) – support capacity strengthening, operational research, and collaborative studies;
- *Civil society and community organizations* – contribute to research on stigma, adherence, social support, and community engagement.

TB research funding

TB research in Ukraine is financed through a combination of public and external funding streams. At the institutional level, the National Academy of Medical Sciences of Ukraine (NAMSU) provides core funding, primarily covering staff costs. Additional public resources are available through public health programmes and competitive mechanisms, such as the National Research Fund of Ukraine (NRFU), the National Academy of Sciences of Ukraine, and targeted government programmes.

In practice, however, public financing remains limited, and the majority of TB research is supported by external donors, including the Global Fund, USAID (formerly), WHO, UNDP, Médecins Sans Frontières (MSF), and others. This support includes both dedicated research grants and research components embedded within larger programme grants. Together, these funding streams underpin Ukraine's capacity to conduct strategic, operational, and implementation research in TB. Since mid-2025, the suspension of Global Fund financed research activities, combined with broader reductions in external funding, has introduced a material risk of contraction in the scale and intensity of TB research, with potential implications for the implementation of the National TB Research Agenda.

Legal and ethical framework related to TB research

TB research in Ukraine is governed by national laws, ethical standards, and institutional mechanisms ensuring scientific integrity, participant protection, and alignment with international standards.

Key instruments of the legislative framework include:

- *Law on Scientific and Technical Activities* (No. 848-VIII, 2016)[115] – defines principles of state support for research, roles of scientific institutions, and mechanisms for funding and evaluation.
- *Law on Protection of Personal Data* (No. 2297-VI, 2010)[116] – ensures confidentiality and security of personal data used in research, including sensitive health information.
- *Law on Public Health* (No. 2573-IX, 2022)[117] – identifies TB control as a national priority and mandates evidence-based approaches, including research.
- Additional sectoral laws and MoH decrees regulate TB-specific interventions, laboratory standards, and infection control[118].

Ethical governance and oversight follow international standards, including the Declaration of Helsinki and the CIOMS *International Ethical Guidelines for Health-Related Research Involving Humans*. Within the current Ukrainian legal framework, a formal requirement for prior ethical approval applies to clinical trials; however, there is no national normative act mandating ethical approval for non-clinical studies (e.g. sociological, behavioral, bio-behavioral, or epidemiological research). The CPH's Ethics Committee does not review clinical trials; instead, it assesses non-clinical public health studies submitted within its remit. For such studies, the PHC Ethics Committee reviews a comprehensive documentation package, which typically includes the research protocol, all study instruments, informed consent forms for respondents, data confidentiality agreements for the research team, and accompanying materials (e.g. recruitment documents and data management and protection plans).

Ethical review is conducted by Institutional Review Boards (IRBs) under MoH (PHC Ethics Commission[119]) and NAMSU, which oversees research ethics at affiliated institutions including NIPhP.

Capacity building in TB research

Ukraine has developed a multi-layered system for strengthening TB research capacity

- NIPhP hosts a Specialized Academic Council, awarding 3-4 TB-related PhDs in TB-related fields annually, and operates a National Training Hub for Professional Growth of Medical Workers, which organized 45 educational events in 2024 and 20 in 2025 on clinical research, diagnostics, and public health topics.
- Postgraduate education is coordinated by NAMSU and medical universities and includes modules on clinical research methods, molecular diagnostics, implementation science, and ethics. Efforts continue to institutionalize research training in residency and doctoral programmes.
- Young professionals engage in research through mentorship and scientific conferences.
- Civil society organizations support access to vulnerable populations and co-lead research on stigma, treatment adherence, and social determinants.
- International partners contribute through training, technical assistance, and collaborative studies.

TB research projects

TB research has expanded significantly over the past decade. NIPhP has implemented multiple structured scientific projects[120], including:

- Assessment of the effectiveness of medical and psychosocial support elements for TB patients (2024);

[115] https://zakon.rada.gov.ua/laws/show/848-19#Text
[116] https://zakon.rada.gov.ua/laws/show/2297-17#Text
[117] https://zakon.rada.gov.ua/laws/show/2573-20#Text
[118] https://phc.org.ua/en/diseases-and-information/tuberculosis/guidelines
[119] https://phc.org.ua/naukova-diyalnist/komisiya-z-pitan-etiki
[120] https://phc.org.ua/naukova-diyalnist/doslidzhennya/doslidzhennya-z-tuberkulozu

- Evaluation of the impact of war and the COVID-19 pandemic on the mental health of TB patients and healthcare workers (2024);
- Assessment of the effectiveness of CAD software within the TB screening programme in Ukraine;
- Impact of COVID-19 on TB case detection (2022–2023);
- Independent review of Ukraine's Transition Plan 20-50-80 (2023);
- Operational study on adherence to TB care standards, including drug-resistant TB (2021–2023);
- Assessment of accessibility of TB services at the primary healthcare level (2022–2023)
- Study of patient costs related to TB and HIV diagnosis within the health system (2021–2022);
- Evaluation of the effectiveness and safety of modified short-course regimens for rifampicin-resistant TB in Ukraine (2020-2024);
- Assessment of fiscal, administrative, and political impacts of health reform on access to services for people with HIV, TB, viral hepatitis, and substance use disorders (2021)
- TB stigma assessment in Ukraine (2021);
- Development of differentiated algorithms for short-course therapy in drug-resistant TB (2019-2021);
- Investigating the impact of comorbidities (mental health, addictions, chronic diseases) on TB outcomes among civilian and military populations (2025-2027).

As part of its programme management role, CPH has coordinated operational research focused on barriers to TB detection, diagnosis and treatment, particularly in rural and penitentiary settings.

Additional studies have assessed adherence to national TB care standards, evaluated the effectiveness and safety of short-course regimens (including BPaL and mSTR), and examined integration of CAD software into TB screening workflows. Research has also examined impacts of COVID-19 and war on programme performance and mental health. In 2024, CPH commissioned a stigma assessment study implemented by NGO "100% Life" under TGF project.

Some planned studies for 2025 – such as catastrophic cost survey and analyses of service delivery completeness – were not implemented due to funding limitations. However, following consultations with the Research Department, approval was obtained from the Global Fund to conduct a study on catastrophic costs among TB patients, which is scheduled for 2026.

Peer-reviewed publications

Between 2018 and 2025, Ukraine contributed 55 peer-reviewed publications to the global TB research field. From 2018-2022, 27 studies addressed drug resistance surveillance, pediatric and adolescent TB, diagnostic performance, treatment outcomes, and war-related service disruptions. From 2023-2025, 28 studies focused on advanced cohort analyses, molecular epidemiology, digital adherence technologies, and innovations in pediatric diagnostics. This growing body of work reflects expanding research capacity and sustained engagement.

Integration of research into TB programme implementation

Ukraine has effectively integrated operational and applied research into its national TB programme. Evidence has informed updates to clinical protocols, diagnostic algorithms, and service delivery models. Research has contributed to the adoption of short-course DR-TB regimens, rollout of molecular diagnostics at PHC level, and implementation of digital adherence tools.

Differentiated care models have been developed for vulnerable populations, including children, PLHIV, and IDPs. Local studies have guided interventions in penitentiaries and rural areas, assessed transmission patterns during wartime, and evaluated community-based care approaches. These evidence-based insights have strengthened programme responsiveness, adaptability to local needs, and performance.

In summary, Ukraine has made notable progress in strengthening its TB research environment, supported by a solid legal and strategic framework and the development of the first National TB Research Agenda, which sets clear priorities and a coordinated implementation structure. Research capacity has gradually expanded through academic programmes, training, and international collaboration, while evidence from operational and scientific studies has informed updates to clinical protocols, diagnostics, and service delivery. This progress is reflected in an increased volume of peer-reviewed publications between 2018 and 2025.

At the same time, funding for TB research remains limited and unstable, collaboration across institutions is hindered by the absence of formal coordination mechanisms. These constraints reduce efficiency, slow evidence generation, and limit the broader impact of research on programme performance.

Recommendations

No.	*Recommendation*	*Timeline*	*Implementer(s)*
1	Continue institutional and cross-sectoral coordination for TB research through enhanced collaboration between national lead institutions (NIPhP and CPH) and joint planning mechanisms engaging academic institutions, public health authorities, and civil society. **[High priority]**	Short-term	CPH, MoH
2	Strengthen coordination and resource mobilization for TB research through a national mechanism engaging public budgets, international donors, the private sector, and academic institutions to align funding and advocate for increased public investment in the National TB Research Agenda. **[High priority]**	Medium-term	CPH, MoH
3	Ensure implementation of approved high-priority TB research, including the catastrophic cost survey planned for 2026 with Global Fund support, and explore additional funding opportunities for research on preventive treatment of MDR-TB contacts and other priority topics. **[High priority]**	Short-term	CPH, MoH, partners
4	Integrate TB research monitoring and evaluation into national programme frameworks by developing a standardized system to track progress, uptake of findings, and impact on TB programme performance.	Medium-term	CPH, MoH, partners
5	Expand community-based TB research by supporting and scaling up studies conducted in partnership with community organizations, focusing on stigma, treatment adherence, and social determinants of health. **[High priority]**	Medium-term	CPH, MoH, partners

6	Organize training on manuscript development and academic writing for staff of research-implementing organizations to strengthen good scientific practice and publication in peer-reviewed journals.	Medium-term	CPH, MoH, partners
7	Foster international collaboration by encouraging partnerships between Ukrainian TB research institutions and academic or clinical institutions abroad to facilitate exchange of knowledge, methodologies, and best practices.	Medium-term	CPH, MoH, partners

* * *

Annexes

Annex 1 TB epidemiological review

Provided in a separate file.

Annex 2 Assessment of indicators related to Diagnostics area

19 September 2025

Indicator	*2024*
The number of people diagnosed with TB, stratified by type of TB	18,311
TB notification rate	48.9
Percentage of incident cases are not detected or notified	Estimated count of TB patients 33,000 (26,000-40,000) not detected or notified 44% (29%-54%)
Percentage of DR-TB cases are new patients, suggesting primary transmission	22.1% (RR-new)
Percentage of new and relapse TB patients are tested with rapid diagnostics as initial diagnosis	97.8% (Xpert)
Percentage of DR-TB patients that had 2nd line DST	94.2% (MDR/RR-TB tested for fluoroquinolones)
Percentage of notified incident MDR/RR-TB cases	19,1
Percentage of people with suspected TB tested using WHO recommended rapid diagnostics as initial diagnostic test	10,7% (10918/101722)
Percentage of clinically diagnosed cases without bacteriological confirmation	27,3% (5218/19122)
Percentage of bacteriologically confirmed cases vs. all notified TB cases	72,7 (13904/19122)
Percentage of bacteriologically confirmed cases vs. those tested with a WHO recommended rapid diagnostics as initial diagnostic test	67,4% (12593/18692) here MG+ + LAM+
Does national policy and the diagnostic algorithm in line with giving universal access to DST?	Yes
Percentage of diagnostic testing sites that monitor performance indicators and are enrolled in an EQA system for all diagnostic methods performed	93%
Percentage of DST sites that have demonstrated proficiency by EQA panel testing for all DST methods performed	100%
Percentage of laboratories conducting culture, genotypic or phenotypic DST, or a combination of these, in which a formal quality management system is being implemented that aims to achieve accreditation according to international standards	79%
Is the National Reference Laboratory accredited according to the ISO15189:2012 standard?	Yes
Percentage of testing sites using a mWRD at which a data connectivity system has been established that transmits results electronically to clinicians and to an information management system.	100%
Number and proportion of mWRD test results reported to clinicians using electronic systems.	100% All positive results are transmitted in real time to the email of the regional TB hospital doctor (GX Alert/Aspect)
Proportion of specimens collected for mWRD testing for which a result was received within the specified target time (i.e. time from collection of a specimen to receipt of results).	100%
Percentage of health care facilities that have access to WRDs (onsite or through sample referral)	100%

Indicator	*2024*
Percentage of WRD testing needs that are covered by existing testing capacity	100%
Percentage of notified bacteriologically confirmed TB cases with DST results at least for rifampicin	98% (13266/13547)
Percentage of notified MDR/ RR-TB cases with DST results for fluoroquinolones	82% All cases (pulmonary and extrapulmonary)
Percentage of notified pre-XDR-TB cases with DST results for Group A drugs other than fluoroquinolones	71.3%
TAT for testing from sample collection to results reported from laboratory (stratified for each method): ► WRD = 48 hours ► Low complexity aNAAT (fluoroquinolones) (XDR-TB) = 48 hours ► LPA/high complexity rNAAT (pyrazinamide) = 7 days ► Culture = max. 44 days (liquid) / max. 58 days (solid)	(Number of tests below standard TAT (stratified for each method) / Total number of tests performed) 90%
Percentage of WRD laboratories meeting the minimum quality indicator	(Total number of laboratories with WRD error rates ≤4% / Number of laboratories performing WRD testing) 100%
Percentage of diagnostic testing sites that monitor performance indicators and are enrolled in an EQA system for all diagnostic methods performed	100%
Percentage of diagnostic testing sites (stratified by type of diagnostic testing) that demonstrated proficiency (>90%) through EQA testing	100%
Percentage of diagnostic testing sites (stratified by type of diagnostic testing) that are accredited or are in the process of establishing a formal quality management system towards achieving accreditation	92%
Contamination rate for solid culture (analyzed by batch)	4,5%
Contamination rate for liquid automated culture (analyzed by batch)	9,2%
Percentage of testing sites using a WRD at which a data connectivity system has been established that transmits results electronically to clinicians and to an information management system	29 laboratories of level 2 (MoH, penitentiary) – 100% IS SSI and 100% GX Alert/Aspect 186 laboratories of level 1 (MoH, penitentiary) – 96% only GX Alert/Aspect

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Annex 3 Regulatory Framework for Quantification of Anti-Tuberculosis Medicines (MoH Order No. 1062 of 12 October 2016)

Document

Order of the Ministry of Health of Ukraine No. 1062 of 12 October 2016 *"On Approval of the Methodology for Calculating the Demand for Anti-Tuberculosis Medicines"* (registered with the Ministry of Justice of Ukraine on 3 November 2016, No. 1431/29561)

Purpose of the document

To establish a unified standard for calculating the demand for first- and second-line anti-tuberculosis medicines, ensuring rational procurement planning and equitable distribution of medicines across all regions of Ukraine.

Key provisions of the methodology

Mandatory application

The methodology is mandatory for all state and municipal health institutions involved in the diagnosis, treatment, and prevention of tuberculosis.

Data sources

Quantification is based on official statistical and epidemiological reporting forms, including:

- Form No. 4 (TB-07) – new and recurrent TB cases;
- Forms No. 8-1 (TB-08), 8-2 (TB-10), 8-3 (TB-11) – treatment outcomes and drug resistance data;
- Form No. 33-здоров – annual TB report;
- Forms No. 4-2 and 8-4 – data for MDR/RR-TB (drug-resistant) case quantification.

Core calculation principles

- A standardized approach is applied by patient category (Categories 1–4, including children and people living with HIV).
- Course-based dosing is calculated according to treatment duration (6, 12, 18, or 20 months, depending on category).
- A 100% reserve of the annual requirement is included.
- Calculations take into account existing stock levels and guaranteed deliveries, including donor-supported procurement (Global Fund, GDF, humanitarian programmes).

Calculation algorithms

Separate algorithms are applied for:

- Adults and children with drug-susceptible TB;
- Patients with mono- or poly-drug-resistant TB;
- MDR/RR-TB patients (including current, previous, and two preceding years of registration);
- Preventive treatment (TPT) for people living with HIV, TB contacts, and children.

Form and structure of quantification

Quantification is performed using a standardized template (Annex 1 to the Methodology), which includes:

- Codes for patient categories;
- Dosage and standard course doses for each medicine;
- Cost accounting mechanism;
- Adjustment fields for stock levels and delivery timelines.

The algorithms cover:

- First-line medicines: H, R, Z, E, S, and fixed-dose combinations;
- Second-line medicines: Km, Am, Cm, Lfx, Mfx, Pt, Cs, Trz, PAS, Lzd, Cfz, and others;
- Special patient groups: children (0–14 years), people living with HIV, patients on opioid substitution therapy (methadone), and preventive regimens (6H, 3HP, etc.).

Practical application

Between 2016 and 2020, this Methodology served as the main regulatory document for:

- Annual and quarterly quantification of anti-TB medicine requirements;
- Preparation of budget requests and programme passports;
- Planning of procurements through the State Enterprise “Medical Procurement of Ukraine” (MPU);
- Coordination with donors (Global Fund, GDF, USAID, and others) to prevent medicine shortages.

Comment on current status

Since 2021, with technical support from the Global Drug Facility (GDF) and WHO, Ukraine has transitioned to the use of the QuanTB tool as the primary mechanism for quantification and forecasting of anti-TB medicine needs.

QuanTB provides automated calculations that account for stock levels, expiry dates, planned deliveries, and consumption trends, generating early warning signals for potential shortages or surpluses.

Comments and Recommendation - 2016 Methodology, terminology, medicines, reporting forms, volume of buffer allocation, etc. have become outdated and require revision to align with current treatment practices implemented by the Public Health Center.

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Annex 4 Main components of a national stockpile management and early warning system *(for sub-section 'LMIS and EWS')*

Describe the current main components of a national stockpile management and early warning system (EWS): what data is used, in what format, how often it is updated and who is responsible for processing it.

№	*Component / Process*	*Key Data and Indicators*	*Format / Tool*	*Update Frequency*	*Responsible Party*	*Comment*
1	Stock Monitoring (MoS)	Medicine balances, months of stock availability, expiry dates	Excel tables (CPH template)	Quarterly + ad hoc when risks are identified	Regional phthisio-pulmonology centers → CPH	Primary data source for all analytical blocks
2	Risk Analysis	MoS deviations (understock / overstock), share of stock expiring in <6 months	Excel reports, CPH consolidation	Quarterly	CPH Pharmaceutical Management Department	Used for developing risk management proposals
3	Early Warning System (EWS)	List of medicines at risk of shortage, overstock, or expiry	CPH Excel model + email alerts	Each data update / as needed	CPH (National EWS Coordinator)	Currently manual; automation planned
4	Preparation of Management Proposals	Consolidated MoS analysis, stock data, and recommendations	CPH Word/Excel memos → MoH and MPU	Quarterly and during emergencies	CPH	Basis for redistribution or additional procurement decisions
5	Documented Procedures (Risk Map)	Sequence of actions, responsible parties, timelines	PDF/Word – "Risk Management Process Map"	Updated annually	CPH jointly with MoH	Defines the unified EWS workflow
6	LMIS Development	Data collection module, automated MoS calculation, dashboards	Web platform (under development)	Planned real-time updates	CPH (IT Department + Pharmaceutical Management)	In pilot stage; integration with QuanTB planned
7	Data Quality and Timeliness	Report submission dates, data entry errors	Excel-based reporting control register	Quarterly	CPH + regional facilities	Critical element for successful LMIS automation
8	Communication and Alerts	EWS notifications and response recommendations	Email / official CPH letters	As risks arise	CPH → regions and donors	Key mechanism for maintaining supply continuity

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Annex 5 Results of regional stock observation analysis (as of 1 August 2025) *(for sub-section 'LMIS and EWS')*

A review of aggregated national and regional TB medicine stock data was conducted as of 1 August 2025. The analysis covered both DS-TB and DR-TB medicines.

1. DS-TB medicines

Several medicines were selected as proxies for detailed analysis: 4-FDC RHZE (150/75/400/275), 2-FDC RH (150/75), Rifampicin 150 mg, and 3-FDC RHZ (75/50/150) dispersible tablets for children.

Medicine	***Months of stock in the regions (average national consumption*)***	***Months of stock in the regions (based on QuanTB files)***	***Regional variation (months)***	
			Minimum	*Maximum*
4-FDC RHZE (150/75/400/275)	6.9	5.4	2.6 Kirovohrad	24.4 Cherkasy
2-FDC RH (150/75)	38.9	5.0	5.1 Kharkiv	>100 9 regions
3-FDC RHZ (75/50/150)	5.5	5.9	0.5 Lviv	>10 7 regions
Rifampicin 150	2.3	3.6	0.5 Kirovohrad	6.8 Ternopil

* Average monthly consumption January–July 2025 (seven months of use).

It should be noted that average regional stock levels vary considerably across products and are generally below the standard procurement cycle. However, taking into account the central-level national warehouse stocks and expected deliveries, no medicine shortages were observed.

Key observations

- Discrepancies exist between planned (QuanTB) and actual consumption, minor in some cases and substantial in others.
- Regional stock variation remains high for all formulations.

Interpretation

The differences in months of stock per medicine indicate a mismatch between quantities expected for consumption in the previous procurement cycle (QuanTB files) and actual consumption, possibly due to changes in registered TB cases in the country and internal, external migration.

Variance in consumption between QuanTB projections and actual data may be influenced by adjustments in the proportion of use of different treatment regimens (e.g., substitution of FDCs with single-component medicines and vice versa in cases of product expiry), as well as by factors such as migration, human resource turnover, and post-COVID effects.

2. DR-TB medicines

Proxy medicines: Bedaquiline 100 mg, Moxifloxacin 400 mg, Pretomanid 100 mg, Linezolid 600 mg, Delamanid 50 mg.

Medicine	***Months of stock in the regions (average national consumption*)***	***Months of stock in the regions (based on QuanTB files)***	***Regional variation (months)***	
			Minimum	*Maximum*
Bedaquiline 100 mg	11.9	16.1	5.4 Zaporizhzhia	33.1 Rivne
Moxifloxacin 400 mg	9.1	11.6	1.0 Vinnytsia	>10 9 regions

Pretomanid 100 mg	1.7	3.0	0.6 Ivano-Frankivsk	>6 3 regions
Linezolid 600 mg	3.2	6.1	0.5 Chernivtsi	>5 12 regions
Delamanid 50 mg	29.8	20.5	3.2 Chernihiv	>30 9 regions

* Average monthly consumption January–July 2025 (seven months of use).

It should be noted that average regional stock levels vary considerably across products and for some products are below the standard procurement cycle. However, taking into account the central-level national warehouse stocks and expected deliveries, no medicine shortages were observed.

Patterns observed for DR-TB medicines mirror those for DS-TB - imbalances in stock duration, divergence between planned and actual consumption, and wide regional disparities.

Further analysis is needed to correlate these differences with epidemiological trends, population movement, and staff turnover.

Preliminary conclusions and operational recommendations

1. Procurement and supply planning for TB medicines should be conducted twice a year, covered 18 months of the forecasting period, and each order divided into two deliveries to minimize risks associated with forecasting errors, changes in the epidemiological situation, or delivery delays.
2. Regional distribution should cover six months of demand, as calculated in the QuanTB file, with an additional three-month buffer stock. The remaining quantities should be stored at the central warehouse to enhance flexibility within the national supply system.
3. Quarterly submission of regional QuanTB files should be institutionalized to improve the quality of distribution and redistribution planning and to ensure timely preparation for new procurements.
4. The Treatment monitoring and Pharmaceutical Management Departments of CPH should use QuanTB files to conduct quarterly analytical reviews, comparing planned and actual medicine consumption, as well as projected versus actual TB cases enrolment by treatment regimen. This will allow prompt identification of discrepancies and corrective action.
5. To address root causes of stock imbalances, quarterly coordination meetings should be held between the Center (Departments of Treatment and Pharmaceutical Management) and regional representatives, based on the findings of the quarterly analytical reports.

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