

INFORMATION BRIEF

**on best practices and common bottlenecks
in eliminating mother-to-child transmission of HIV
in seven UNICEF priority countries
in Eastern Europe and Central Asia**



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ECARO's health and nutrition sections led the development of this document. The principal author is Justyna D. Kowalska, Professor of Medicine, the Medical University of Warsaw, and Senior Consultant, the Hospital for Infectious Diseases.

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ACRONYMS

AIDS	acquired immunodeficiency syndrome
ANC	antenatal care
EECA	Eastern Europe and Central Asia
EMRO	WHO Eastern Mediterranean Regional Office
EMTCT	elimination of mother-to-child transmission
GAM	global AIDS monitoring
GVAC	Global Validation Advisory Committee
HIV	human immunodeficiency virus
MTCT	mother-to-child transmission
NVC	national validation committee
NVS	national validation secretariat
PAHO	Pan American Health Organization
PMTCT	prevention of mother-to-child transmission
RVC	regional validation committee
RVS	regional validation secretariat
UNAIDS	Joint United Nations Programme on HIV/AIDS
UNICEF	United Nations Children's Fund
WHO	World Health Organization

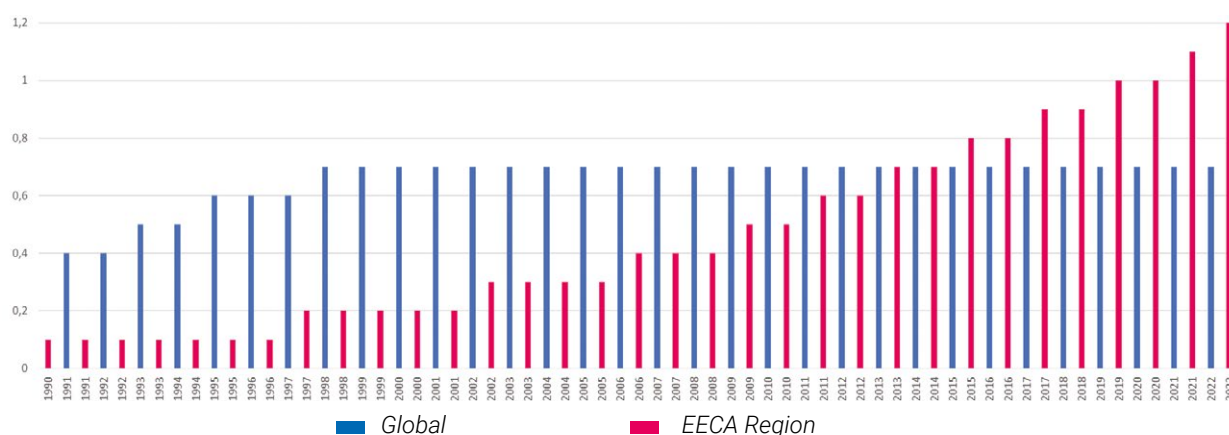
AIM

The aim of this information brief is to review existing resources and analyse potential bottlenecks for the processes in applying for EMTCT/Path to Elimination and to strengthen ongoing PMTCT programmes in such applications.

INTRODUCTION

According to Global AIDS Monitoring (GAM) 2021 and UNAIDS 2021 estimates, HIV prevalence among adults aged 15 to 49 years is systematically increasing in the Eastern Europe and Central Asia (EECA) region, while global estimates remain stable (Figure 1).¹ Almost all new HIV infections in younger children from EECA are diagnosed in the 0 to 4 years age group, indicating that they occur either through pregnancy, birth or breastfeeding.² In 2021, the estimated coverage of antiretroviral therapy among pregnant women in EECA was 65 per cent [59 to 75 per cent], which was lower than the global average.² However, these estimates are not always in agreement with country surveillance data, as indicated both by independent consultants, and reports of national validation committees (NVCs) and regional validation committees (RVCs).

Figure 1. HIV prevalence among adults aged 15 to 49 years, estimates for 1990-2022. Adapted from UNAIDS data¹



In general EECA is a region that has shown significant improvement in the cascade of HIV care in adults, from 21 per cent of diagnosed persons being on treatment at the beginning of the 90-90-90 initiative in 2015 to 51 per cent in 2022, and from 19 per cent of persons with viral suppression in 2015 to 48 per cent in 2022.^{3,4} The significant improvements both in general health care and in HIV care in the region does not, however, translate into progress towards certification of the elimination of mother to child transmission (EMTCT).

In 2014, WHO released the 'Global guidance on criteria and processes for validation: elimination of mother-to-child transmission of HIV and syphilis' (the 'Orange Book') and updates it regularly.⁵ The process of validation is the responsibility of ministries of health, and committees and secretariats at national, regional and global levels (Figure 3).⁶

In 2016, shortly after the Global Validation Advisory Committee (GVAC) for EMTCT was established, Belarus became the first country in the EECA region to obtain validation of achieving HIV

EMTCT, followed by Armenia in the same year. As EMTCT for single or dual validation is provided for 3 to 5 years, Armenia has re-applied and is currently undergoing assessment by WHO. Belarus requested re-assessment and in 2018 the GVAC endorsed its continued validation status for HIV and syphilis. Belarus requested re-assessment again in 2022, hosted the RVC in 2023 and awaits a decision from the GVAC. Moldova also obtained validation of the EMTCT of syphilis in 2016 and revalidation in 2018.⁷ Kazakhstan and the Republic of Moldova went through external validation by WHO for EMTCT of HIV and syphilis but did not meet all the required criteria. In addition, Kazakhstan and Uzbekistan invited external consultants to review their current status regarding country EMTCT and received advice on the process of preparing the request to the RVC (Table 1). These countries are close to meeting EMTCT indicators but could not yet obtain EMTCT approval. Other countries in the region, namely Georgia, Kyrgyzstan and Ukraine, went through the process of national evaluation, but have not yet requested external validation by the RVC.

In comparison with other regions, as of 2021 eight countries from Latin America and the Caribbean region (Anguilla, Antigua and Barbuda, Bermuda, Cayman Islands, Cuba, Dominica, Montserrat, and Saint Kitts and Nevis), were validated by WHO for the EMTCT of HIV and syphilis and four additional countries are on track for the dual validation of HIV and syphilis in 2023-2024 (PAHO communication) (Figure 2).⁸

Recognizing high prevalence countries' struggle in meeting the criteria and to enable the application for triple elimination, in 2017 WHO introduced the Path to Elimination in order to recognize countries with high prevalence of maternal HIV, syphilis or hepatitis B virus in their efforts to reduce MTCT.⁹ It was fully incorporated into the global guidance in 2021. According to this strategy there are three levels (tiers) of impact and programme indicators (bronze, silver and gold) and countries are expected to gradually advance from one tier to the next, ultimately reaching the goal of elimination (Prevalence requirements, indicators and targets for certification on the path to elimination of MTCT of HIV, syphilis, and/or hepatitis B virus).⁵ In addition, the process was supplemented by the acknowledgement of the role of engaging civil societies, protecting human rights and gender equality, ensuring that these key elements have been addressed.

Figure 2. Countries that have received WHO validation ⁷

Where we are with EMCTCT of HIV, Hepatitis B and syphilis validation

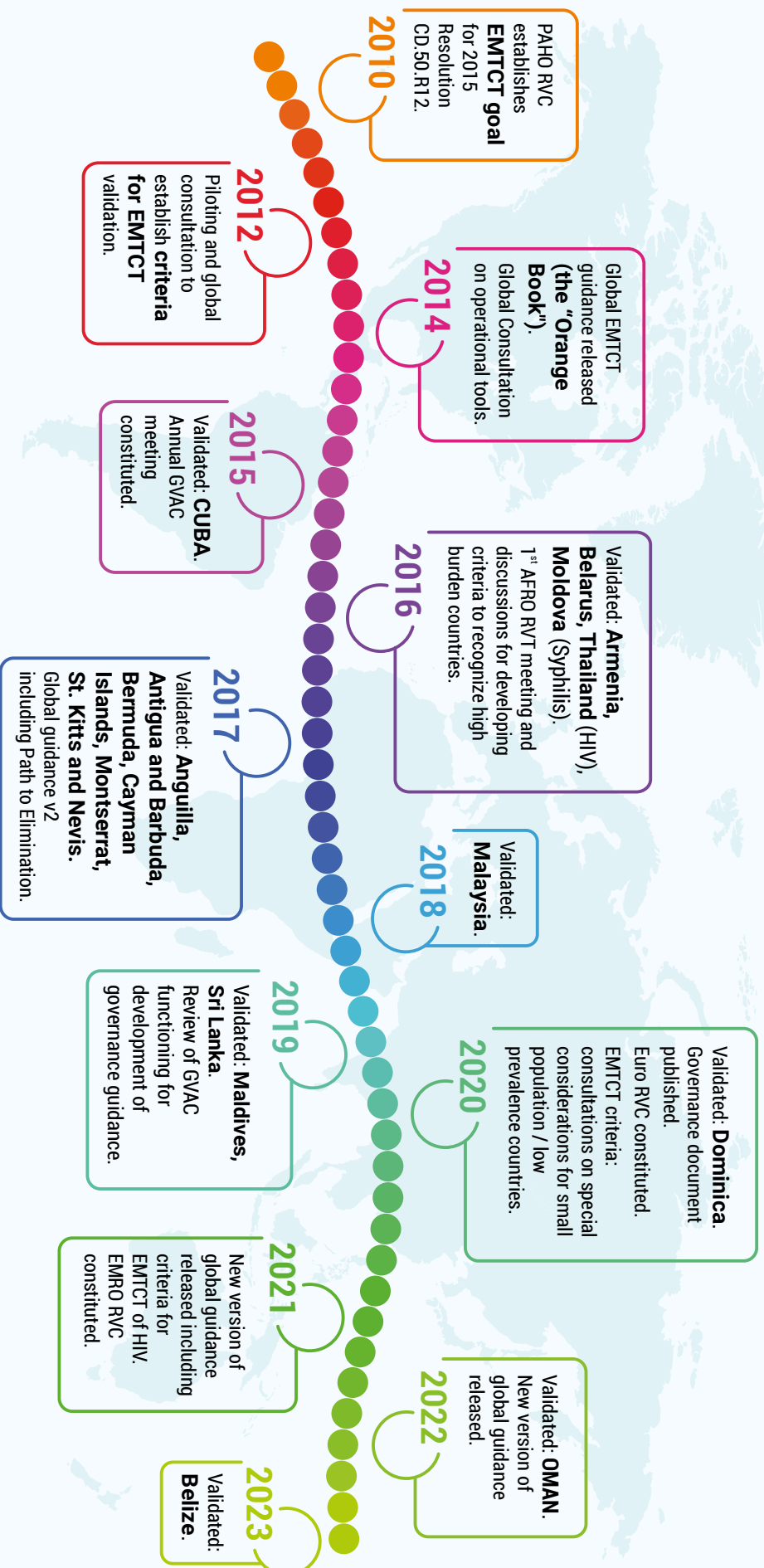


Figure 3. Processes of validation for EMTCT and Path to Elimination, WHO 2021⁶

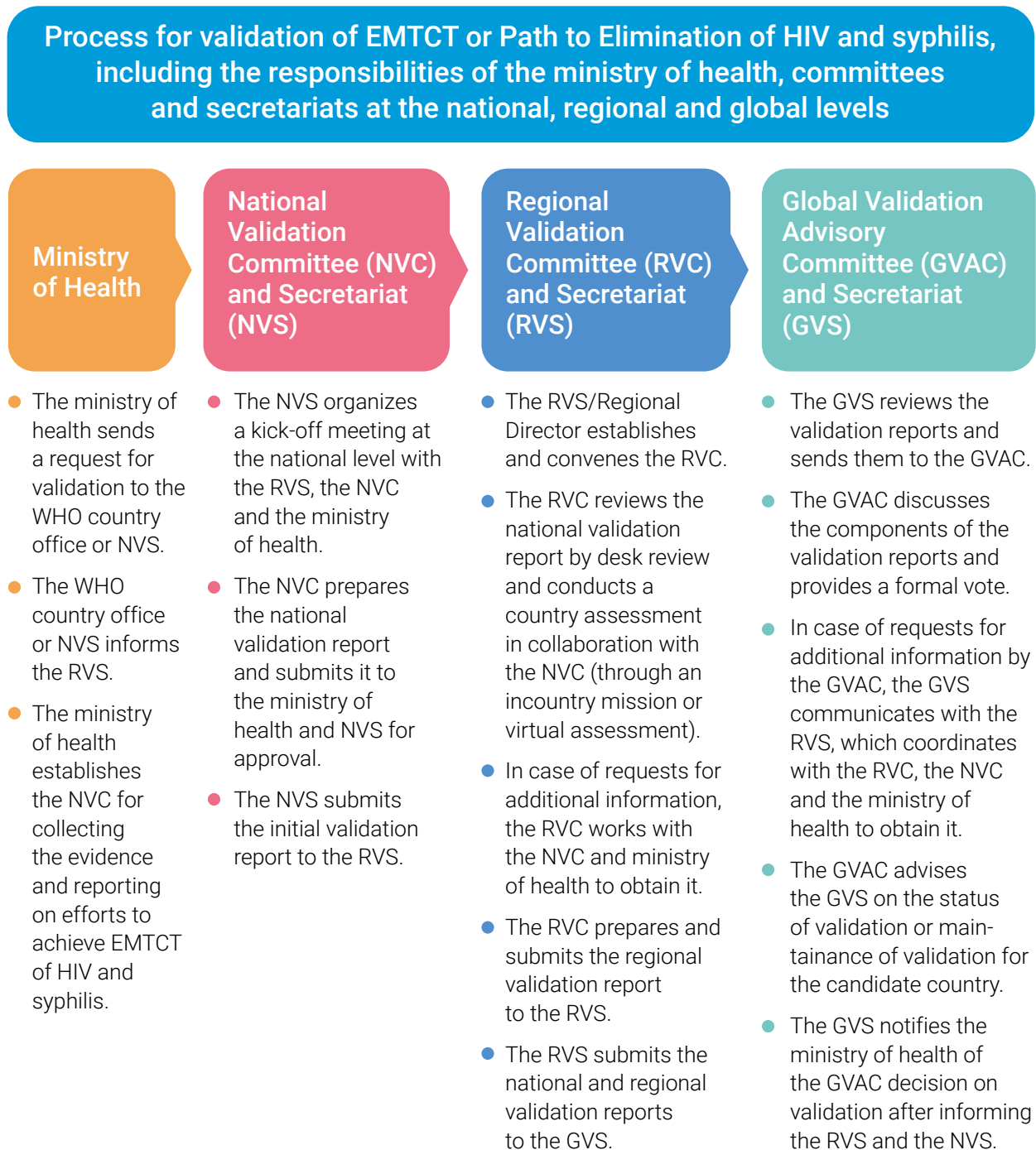


Table 1. Stages of EMTCT evaluation at the time of this review

Ministry of Health	NVC and NVS	RVC and RVS	GVAC and GVS
Armenia	Armenia	2016 and 2019	2016 *
Belarus	2015	2016 and 2022 *	2015, 2023 *
Georgia	2022		
Kazakhstan	2022	2022	
Kyrgyzstan	2021 UNICEF consultant 2021		
Moldova	2021 UNICEF consultant 2021	2016 **	
Ukraine	2021		
Uzbekistan	2021 ***		

* EMTCT status is valid for a maximum of five years, and Armenia and Belarus re-applied in 2019 and 2022 respectively.

** The Republic of Moldova received validation for EMTCT of syphilis.

*** The assessment was conducted with support of international consultants hired by UNICEF.

METHODOLOGY

This information brief on best practices and common bottlenecks in EMTCT was requested by UNICEF ECARO with the purpose of reviewing and analysing the progress in PMTCT programmes in the EECA region. Eight UNICEF priority countries were selected for the review: Armenia, Belarus, Georgia, Kazakhstan, Kyrgyzstan, the Republic of Moldova, Ukraine and Uzbekistan.

The following methods were used in the development of this report:

1. A desk review of documents from past assessments of PMTCT services, both at the national (NVC) and regional (RVC) level and available from 2015 onwards.
2. Use of the GAM database and UNICEF and UNAIDS resources to review trends related to the impact and process/programme indicators.
3. Interviews with UNICEF country office staff, conducted on Zoom.
4. A search of publicly available reports and resources on UNAIDS, UNICEF and WHO websites.

All document requests were performed through either UNICEF regional or country offices. No direct communication was attempted with country administrations, ministries of health or care/service providers. UNICEF ECARO approached country offices in order to collect all documents requested for review.

DATA AVAILABILITY

Reports were made available by seven out of eight countries, while only two reports were indicated as being final and only one was approved by the minister of health. Armenia invited the NVC in 2019 with a report of the visit provided to the ministry of health for approval. A request to share RVC reports from Armenia was also issued, but the document was not shared as it did not have approval from the ministry of health (Table 2).

Table 2. Availability of documents from evaluations of PMTCT programmes

Country	Level of evaluation	Language	Reviewed period	Dated	Available in public domain
Armenia	N/A	-	-	-	-
Belarus ¹⁰	NVC	English	2014-2015	No	No
Belarus ¹¹	RVC (draft)	English	2014-2015	May 2016	No
Georgia ¹²	NVC	English	2019-2021	December 2022	No
Kazakhstan ¹³	RVC	English		4-27 July 2022	No
Kyrgyzstan ¹⁴	UNICEF consultant	English and Russian	2017-2020	2021	Yes (UNICEF website)
Kyrgyzstan ¹⁵	Internal expert report to Republican AIDS Centre	Russian	overall	December 2021	No
Kyrgyzstan ¹⁶	Republican AIDS Centre	Russian	2018-2022	September 2023	No
Moldova ¹⁷	UNICEF consultant	English	2019-2021	October 2022 – January 2023	No
Ukraine ¹⁸	NVC	English		2021	No
Uzbekistan ¹⁹	NVC*	English	2020-2021	No	No

* The assessment was conducted with support of international consultants hired by UNICEF.

In addition to the above documents, the GAM database and UNICEF and UNAIDS resources were used. Uzbekistan is not reporting to GAM on most of the indicators.

COUNTRY CONTEXT

The unique features that most EECA countries share (and all of them are included in this review) is the strong influence of the pre-existing unified model of healthcare of the Soviet Union. After the break-up of the former Soviet Union in 1991, Armenia, Belarus, Georgia, Kazakhstan, Kyrgyzstan, the Republic of Moldova, Ukraine and Uzbekistan had to restructure the organization, financing and provision of health services. These countries, however, often decided on markedly different paths of change, which resulted in substantially differing progress.²⁰ Most post-Soviet countries still struggle with a low number of medical staff per capita, underfinanced healthcare facilities and outdated equipment. According to the Global Health Expenditure Database, in 2020 the share of health expenditure expressed as a percentage of GDP was 7 per cent in the Republic of Moldova, 6.4 per cent in Uzbekistan, 6.2 per cent in Kyrgyzstan, 8.4 per cent in Georgia, 5.9 per cent in Belarus and 3.1 per cent in Kazakhstan (<https://apps.who.int/nha/database>). In all reviewed countries the highest proportion of funding for the implementation of national AIDS programmes (provision of healthcare services, procurement of antiretroviral therapy) comes from the state budget. However some PMTCT components are covered by external funds.²¹

Although most countries adopted universal healthcare insurance, in reality timely access to medical care is poor, resulting in the growth of private medical services. While the share of private healthcare remains incidental and insignificant in the Republic of Moldova, it is much higher in Kazakhstan and Ukraine. Public and non-public data should be reported jointly for validation purposes, yet differentiated from each other. This can cause additional challenges in the process of preparation for evaluation. Nevertheless all EECA countries achieved impressive coverage of at least one antenatal care (ANC) visit during pregnancy and keep on track to achieve the ambitious goal of at least four ANC visits.²²

The EECA region is characterized by low HIV prevalence among the general population (except for Ukraine) and the epidemic is concentrated in key populations with onward transmission to their sexual partners. The predominant mode of HIV transmission is heterosexual and women constitute 25 to 46 per cent of the HIV population (Table 3). People who inject drugs still contribute significantly to modes of HIV transmission. It is also notable that in all countries HIV transmission through sexual contact between men is officially very low, but most likely underreported and thus underestimated.

Table 3. Country characteristics overview by NVC or RVC reports.

	Belarus ¹¹	Georgia ¹²	Kazakhstan ¹³	Kyrgyzstan ¹⁶	Moldova ¹⁷	Ukraine ¹⁸	Uzbekistan ¹⁹
Country population in millions	9.5	3.7	19	6.2	3.1	41.2	34.6
Total number of registered HIV cases*	24 328	9 349	22 141	12 231	16 106	144 089	45 296
% of women among people with HIV	40%	25.3%	34.5%	37%	42.2%	46%	45%
Heterosexual	67.5%	50.7%	57.2%	60%	88.5%	61.2%*	70%
Person who injects drugs	-	34.4%	32.6%	-	-	38.1%	20%**
Antenatal care coverage (at least 1 visit)	99.7%	95.3%	99.9%	92.5%	95.7%	99.8%	99.3%
HIV testing of pregnant women	99.2%	88.7%	97.5%	98.2%	99.6%	99%***	99.9%
Positivity rate of testing in pregnancy	0.1%	0.1%	0.03%	0.03%	0.2%	0.2%	Not available
Antiretroviral therapy coverage among pregnant women	97.8%	96.3%	97.9%	96.2%	94.5%	95.9%	98.0%

Data in the table are provided based on NVC or RVC reports and for the most recent available year.

* Reported as "sexual".

** Reported as the prevalence of parenteral HIV transmission.

*** 97.9% in private care.

Early diagnosis and prompt HIV treatment for all HIV positive women of childbearing age is essential to achieving EMTCT, and EECA countries present impressive achievements in this area. The Republic of Moldova experiences fast progress and a modern approach to HIV testing, which is available at the primary healthcare level free of charge and in the form of rapid testing. At the same time, in most ANC and family medicine centres, HIV testing is performed as a co-test with a rapid syphilis test. Repeated testing during pregnancy is performed only in approximately 10 per cent of pregnancies, as an order of the ministry of health requires testing pregnant women only on entering ANC. The Western-blot test is no longer used for the confirmation of HIV diagnosis, which is now performed by point-of-care GenXpert HIV-1 viral load technology.

Countries with the largest number of pregnant women tested were Kazakhstan, Ukraine and Uzbekistan. In Ukraine, women are tested up to three times during pregnancy: at the first ANC visit and before 12 weeks of pregnancy, between 20 to 24 or 32 to 36 weeks of pregnancy and at 32 weeks or during delivery for pregnant women from risk populations or a serodiscordant couple.

In 2020, HIV testing was performed in 282,539 pregnant women in Ukraine, while in the same year an overall 1.9 million tests were performed in the country (with a positivity rate of 1.08 per cent in the general population and 0.2 per cent among pregnant women).¹⁸ In Kazakhstan in 2021, 461,753 pregnant women were tested for HIV, with 264,338 repeat tests at 30 weeks of gestation.¹³ Repeated testing seems especially important as the HIV incidence among men is twice as high as among women. Uzbekistan performs the highest number of tests with 909,276 pregnant women tested for HIV in 2021, though information on the positivity rate is not available.¹⁹ According to an order of the Ministry of Health of Kyrgyzstan women attending ANC are tested twice, and in 2022 the total number of pregnant women tested for HIV was 181,640 (with a positivity rate of 0.03 per cent).¹⁶ In Georgia 40,366 pregnant women were tested for HIV in 2021 with a positivity rate of 0.1 per cent. The last available data for Belarus are for 2015 when 741,133 women of reproductive age and 211,634 pregnant women were tested for HIV, with a positivity rate of 0.1 per cent.¹⁰

However, in all the reviewed countries, testing of pregnant women's partners remains underutilized and outreach with HIV self-testing is not routinely available. In Ukraine, where partner testing is strongly encouraged, 30,671 tests were performed for partners of pregnant women in 2020 with a positivity rate of 0.63 per cent. In most countries partner testing is not separately recorded.

While coverage of testing pregnant women with HIV is impressive, the rates of late presentation remain very high in the countries studied, indicating insufficient HIV testing both in general and among key populations (Table 4). One of the most significant challenges in the EECA region remains HIV testing. Late presentation is an important indicator of multiple barriers to HIV testing on the social, legal and implementation levels.²³

Stigmatization of people living with HIV and criminalization of HIV transmission remain high globally and this also applies to the EECA region.²⁴ According to the 'HIV Criminalisation Scan in the countries of Eastern Europe and Central Asia for 2018-2022' (Eurasian Women's Network on AIDS, 2023), in the vast majority of EECA countries criminal penalties for putting people at risk of HIV infection exist (Figure 4). However, these laws do not fulfil a protective function but rather are used to intimidate people living with HIV, fuelling discriminatory behaviours that have a strong stigmatizing effect.^{25, 26} Women are disproportionately affected by HIV criminalization: for example, in Belarus women made up 65 of 106 (61 per cent) of HIV-related criminal cases between 2019 and 2022, and globally women comprise 84 per cent of such verdicts. Uzbekistan is the country with the most HIV transmission-related prosecutions.

Table 4. Late presentation by country in 2019-2022 (GAM reports).

	CD4+ < 200 cells/mm ³			CD4+ < 350 cells/mm ³	
	All	Women	Children*	All	Women
Belarus					
2022	233/2110 (11%)	Not reported	Not reported	357/2110 (16.9%)	Not reported
2021	208/1496 (13.9%)	Not reported	Not reported	Not reported	Not reported
2020	169/1479 (11.4%)	53/544 (9.7%)	0/5 (0%)	Not reported	Not reported
2019	Not reported	Not reported	Not reported	Not reported	Not reported
Georgia					
2022	156/517 (30.2%)	32/133 (24.1%)	1/3 (33.3%)	268 (52.1%)	65/133 (48.9%)
2021	151/458 (33%)	42/103 (40.8%)	0/3 (0%)	247/455 (54.3%)	69/103 (67%)
2020	129/445 (29%)	35/101 (34.7%)	1/3 (33.3%)	224/445 (50.3%)	35/101 (34.7%)
2019	200/598 (33.4%)	48/137 (35%)	0/3 (0%)	338/598 (56.5%)	74/137 (54%)
Kyrgyzstan					
2022	Not reported	Not reported	Not reported	Not reported	Not reported
2021	217/715 (30.3%)	99/282 (35.1%)	5/25 (20%)	393/690 (57%)	162/282 (57.4%)
2020	204/629 (32.4%)	86/255 (33.7%)	8/18 (44.4%)	348/611 (57%)	147/255 (57.6%)
2019	204/696 (29.3%)	75/280 (26.8%)	8/25 (32%)	372/696 (53.4%)	143/280 (51.1%)
Kazakhstan					
2022	867/3592 (24.1%)	286/1188 (24.1%)	3/23 (13%)	1834/3592 (51.1%)	603/1188 (50.8)
2021	715/3162 (22.6%)	241/1075 (22.4%)	9/33 (27.3%)	1567/3161 (49.6)	531/1075 (49.4%)
2020	600/2908 (20.6%)	209/1003 (20.8%)	7/21 (33.3%)	1279/2908 (44%)	433/1003 (43.2%)
2019	589/2751 (21.4%)	202/931 (21.7%)	4/27 (14.8%)	1288/2751 (46.8%)	440/931 (47.3%)
Moldova					
2022	296/836 (35.4%)	115/339 (33.9%)	12/33 (36.4%)	447/836 (53.5%)	189/339 (55.8%)
2021	221/700 (31.6%)	82/294 (27.9%)	1/12 (8.3%)	359/700 (51.3%)	142/294 (48.3%)
2020	202/602 (33.6%)	70/251 (27.9%)	0/7 (0.0%)	302/602 (50.2%)	114/251 (45.4%)
2019	229/808 (28.3%)	81/329 (24.6%)	1/22 (4.5%)	381/808 (47.2%)	150/329 (45.6%)
Ukraine					
2022	3384/9083 (37.3%)	Not reported	Not reported	5432/9083 (59.8%)	Not reported
2021	4680/13245 (35.3%)	Not reported	Not reported	7588/13245 (57.3%)	Not reported
2020	4479/13791 (32.5%)	Not reported	Not reported	7513/13791 (54.5%)	Not reported
2019	5251/14941(35.1%)	Not reported	Not reported	8817/14941 (59%)	Not reported

	CD4+ < 200 cells/mm ³			CD4+ < 350 cells/mm ³	
	All	Women	Children*	All	Women
Uzbekistan					
2022	No GAM report	No GAM report	No GAM report	No GAM report	No GAM report
2021	Not reported	Not reported	Not reported	Not reported	Not reported
2020	Not reported	Not reported	Not reported	Not reported	Not reported
2019	Not reported	Not reported	Not reported	Not reported	Not reported

* CD4+ < 200 cells/mm³ or <15%.

Figure 4. Laws and policies in EECA (from UNAIDS Laws and Policies Analytics database).²⁷

Regional summary report (Date: 19/11/2023)							
Country	Criminalization of transgender people	Criminalization of sex work	Criminalization of same-sex sexual acts in private	Criminalization of possession of small amounts of drugs	Laws criminalizing transmission of, non-disclosure of or exposure to HIV transmission	Laws requiring parental consent for adolescents to access HIV testing	Mandatory HIV testing for marriage, work or residence permits or for certain groups
Belarus	No	Yes	No	Yes	Yes	Yes	Yes
Georgia	No	Yes	No	No	Yes	Yes	No
Kazakhstan	No	Yes ***	No	Yes	Yes	Yes*	Yes
Kyrgyzstan	No	Yes	No	Yes	Yes	Yes	Yes
Moldova	No	Yes	No	No	Yes	Yes	No
Ukraine	No	Yes	No	Yes	Yes	Yes	Yes
Uzbekistan	No	Yes **	Yes, imprisonment (up to 14 years)	Yes	Yes	Yes	Yes

UNAIDS National Commitments and Policy Instrument 2021 and/or 2022

* Chapter 2, Articles 9.1 and 9.2, Order of the Minister of Health of the Republic of Kazakhstan, dated 20 December 2020.

** Criminal Code of Uzbekistan Article 131 (https://www.ilo.org/wcmsp5/groups/public/--ed_protect/--protrav/).

*** Kazakhstan. Criminal Code, Article 271 (https://adilet.zan.kz/eng/docs/K970000167_).

Undesired pregnancy remains a major risk for adverse pregnancy outcomes, including preterm delivery and low birth weight. Women living with HIV are more likely to deliver prematurely or to give birth to babies who are small for their gestational age. Access to effective birth control remains key to prevent adverse pregnancy outcomes.

In Kazakhstan, of 4,562,870 women of childbearing age, 27.9 per cent received free of charge contraception. This example demonstrates that effective contraceptive measures can be adopted on a national scale. The country's ambition is to provide effective contraception to 70 per cent of women from risk groups, which includes women living with HIV. In 2021, 86.3 per cent (7,370/8,543) of HIV positive women received at least one contraceptive method: 4,892 (57.3 per cent) received a condom, 1,705 (34.8 per cent) an intrauterine device, 470 (5.5 per cent) hormonal therapy, and 303 (3.5 per cent) surgical sterilization.¹³ The Republic of Moldova adopted the National Programme on Sexual and Reproductive Health and Rights for 2018–2022, which includes centralized procurement, free of charge consultations with family doctors and at primary health centres, and access to male condoms, injectable medroxyprogesterone, combined tablets, emergency contraceptive pills and intrauterine devices with copper.¹⁷ Belarus and Georgia have not adopted free of charge contraception.

However, even if it is publicly available in certain countries, reproductive health services are not incorporated in HIV care centres or services for sexually transmitted infections. In the majority of EECA countries fewer than half of surveyed adolescents and young people aged 15 to 24 years have the correct knowledge on HIV prevention.²

The choice regarding the mode of delivery and cessation of breastfeeding are essential decisions for PMTCT. At these stages women living with HIV remain vulnerable to multiple factors such as social and family expectations, internalized stigma, and gender inequality. Only in-depth analysis of each transmission case can provide insight into the chain of factors resulting in MTCT, thus suggesting potential solutions or planned targeted interventions. Learning from these analyses cannot be overrated. Information available from NVC, RVC and individual consultants' reports or from documents received on request (Belarus, Kyrgyzstan and the Republic of Moldova) allow for a better understanding of how significantly different the problems of countries can be, even between those countries that border each other.

Among EECA countries, levels of ANC coverage are high and routine testing for HIV and syphilis is common. As such, the majority of MTCT cases occur among women who did not attend ANC, or who were not retained in care during pregnancy and breastfeeding. Case by case analyses have shown that most of these women were not linked to risk behaviours or classified as key members of the population. Early routine testing and retesting in pregnancy for at-risk populations, partner testing and enhanced follow up for those not tested seem to be shared strategies to address these gaps. In addition, for women diagnosed at delivery or for those with high viral load at delivery, intravenous azidothymidine administered during labour may have added value to prevent transmission, together with high-risk post exposure prophylaxis for the infant.^{28, 29} Although in Belarus there is a high percentage of pregnant women who have detectable HIV before delivery, it is not reflected in the rates of MTCT. This may be attributable to several factors including the transient viraemia in some cases, the high proportion of pregnancies delivered through caesarean section (62.4 per cent in 2022) and the provision of intravenous azidothymidine to mothers with detectable viral load in labour.

Breastfeeding remains a key factor in defining the accepted level of impact indicators for EMTCT, namely an MTCT of HIV rate <2 per cent for non-breastfeeding populations and <5 per cent for breastfeeding populations.⁵ In countries in the EECA region this varies significantly according to breastfeeding practices. According to the GAM 2022 report (narrative part), 99.1 per cent of children born to mothers living with HIV in Ukraine were bottle fed. In comparison, the evaluation of 764 children of mothers living with HIV in Kyrgyzstan in 2018-2022 showed that 71.4 per cent (546) were artificially fed, 27.6 per cent (211) breastfed and 1 per cent⁷ received mixed feeding (review of the available medical documents).¹⁶ This warrants the need for further evaluation of breastfeeding predominance as well as a re-assessment of the accepted level of impact indicators.

According to WHO recommendations it is the responsibility of national or sub-national health authorities to decide whether services will principally counsel mothers known to be living with HIV to either breastfeed and take antiretroviral therapy or avoid breastfeeding.³⁰

According to the national programmes of all countries evaluated, children born to mothers living with HIV are provided with milk formula; however, it remains uncertain as to how many are formula fed. The quality of artificial milk formulas procured/refunded by national programmes is not routinely reported, nor is its utilization by programme recipients. Interviews with women living with HIV in Kazakhstan indicated that the quality of formulas that are available free of charge is unsatisfactory and mothers have to buy it themselves.

While breastfeeding remains a viable option for women living with HIV who are receiving regular follow-ups and on fully effective combined antiretroviral therapy, it requires a systematic approach that includes education and a multidisciplinary team to care for mother and infant pairs. This seems to remain outside the focus of national programmes, and countries are lacking information on breastfeeding preferences and the demands of women living with HIV.

QUALITY OF DATA

Comparative analyses remain difficult from a methodological perspective as reports shared are not made available publicly, and the version, date and author is not always provided. It is often not indicated whether it was approved or accepted by the ministry of health or other relevant governmental representatives. In addition, reports are available for different time periods and data sources referred to in these documents are also not publicly available. The most commonly given reason for this is existing legislation, as even aggregated data are subject to confidentiality in some countries, for example in Uzbekistan.

Primary data sources reviewed by consultants or validation committees are available mainly in the form of paper documents (except for Kazakhstan and Ukraine) and can only be accessed in person and on site. Electronic data collection and digitalization in healthcare remains an ongoing process and systems that collect specific components for indicators are fragmented. While ANC and primary health care are gradually being digitalized, data on HIV-related indicators are still collected in separate databases where data are input manually. Triangulation and cross checks are rarely used for corroborating data consistency.

Another barrier is the different interpretations of how indicators are calculated. Loss to follow-up of children exposed to HIV and infected during pregnancy and/or delivery may result in HIV diagnosis only later in childhood and under/delayed reporting of these children as MTCT cases. The same refers to migration, which still remains significant in the EECA region, both due to the economic situation and to conflicts. Populations at risk of acquiring HIV are especially mobile and difficult to track.

SUMMARY

EMTCT is a critical goal in the fight against the HIV/AIDS epidemic. While significant progress has been made globally in reducing new HIV infections among children, EECA countries face unique challenges in achieving EMTCT goals and achieving impact and process/programme indicators. At the same time this region has shown significant progress and unique successes worth detailing and sharing.

It is important to note that the information in this brief is accurate up to the last available reports and GAM update until 2022. It should be noted that the situation may have evolved since then.

Below are key successes and bottlenecks in EMTCT that have been identified based on a review of NVC and RVC reports performed in seven countries.

SUCCESSSES

- 1. Access to antenatal care.** All reviewed EECA countries show sustainable progress regarding coverage of pregnant women with antenatal care services.
- 2. Improvements in HIV testing.** All EECA countries have improved access to HIV testing during pregnancy, ensuring that more pregnant women are aware of their HIV status. Early detection is crucial for timely intervention.
- 3. Increased access to antiretroviral therapy.** All reviewed countries have expanded access to antiretroviral therapy for pregnant women living with HIV. According to the overview by NVCs or RVCs, between 94.7 and 98 per cent of women were on lifelong therapy during their current pregnancy.
- 4. Early infant diagnosis.** Most countries in EECA implemented nucleic acid amplification tests for HIV-exposed newborns and infants (first testing within 48 hours and second within 4 to 6 weeks after birth).
- 5. In depth analyses of all MTCT reported cases.** Many countries provide detailed analyses of each HIV transmission case. This work often includes in person visits to a reporting centre and discussion with staff. In addition to precise surveillance, such analyses provide an in-depth understanding of individual scenarios and allow the provision of adequate solutions.
- 6. Improved access to contraception.** Most EECA countries have introduced legislation that ensures free of charge access to contraception methods for women living with HIV and women from certain risk groups, e.g., sex workers or those abusing substances.
- 7. Programmatic approach to PMTCT.** All EECA countries in the region have established or strengthened PMTCT through the supervision of ministries of health providing national programmes, introducing the necessary legislation, and establishing national or regional coordination centres. These programmes ensure access to antiretrovirals and their formulations necessary for PMTCT.

8. **Strengthened healthcare systems.** Significant efforts have been made to strengthen healthcare systems and increase the capacity to provide coverage of antenatal services. As a result, high ANC coverage and the sustainable financial allocation for ANC from governments has been achieved.
9. **Decentralization of healthcare.** All reviewed countries are well on the path to decentralizing healthcare. Primary health care, ANC and family planning have been significantly strengthened. In all countries regular training for medical staff in the area of PMTCT is organized.
10. **Willingness by governments to provide a financial contribution to build comprehensive HIV/AIDS programmes.** Many EECA countries are now increasing financing for HIV/AIDS prevention and treatment programmes.

BOTTLENECKS

1. Human rights.

- ◆ **Stigma and discrimination.** Stigma surrounding HIV/AIDS remains a significant challenge in EECA. Pregnancy and early motherhood is an especially vulnerable time in a woman's life. Many women living with HIV are hesitant to seek testing and treatment due to the fear of discrimination and social exclusion. Practices of rejection and exclusion from family or social groups after disclosing a person's HIV status are still observed in many EECA countries.
- ◆ **Criminalization of HIV.** Several EECA countries continue to have laws that criminalize HIV transmission or non-disclosure and restrict the choice of profession for people living with HIV. In addition, laws criminalize possession of small amounts of drugs for personal use and transactional sex or sex work. These laws have never been shown to decrease the number of newly diagnosed HIV cases or decrease criminal behaviour. On the contrary, it has been documented that they discourage people at risk from getting tested for HIV and engaging in health care services due to the fear of legal consequences.³¹ This includes women during their pregnancy and post-partum.
- ◆ **HIV as an indication for abortion.** In some countries, national protocols include a step in the HIV testing protocol offering an abortion if the HIV test result during pregnancy is positive. While offering a choice, and access to the termination of a pregnancy is a basic human right, HIV should not be listed as a potential indicator for it. Decisions should be based on the same indicators as for non-HIV infected women, taking into account social, medical and psychological factors.
- ◆ **Criminalization of sexual orientation.** Some EECA countries still continue to have laws that penalize sexual contact between men.
- ◆ **Gender inequality.** Gender-based violence and inequality contributes significantly to the vulnerability of women and girls with HIV in EECA. Access to contraception and family planning services may be jeopardized.

- ◆ **Limited access to awareness and education.** Education, especially related to sexual and reproductive health, is strictly related to cultural and religious beliefs and therefore does not empower people to avoid risks and/or seek help.
- 2. **Cultural practices, beliefs and traditions.** In many EECA countries the family hierarchy, cultural beliefs and religion overrule woman's needs and can influence healthcare-seeking behaviours. In countries/communities with strong dominating religious traditions and/or social structures based on patriarchy, women often cannot freely seek adequate medical help or decide on medical check-ups, testing, or a child's vaccination and feeding patterns.
- 3. **Breastfeeding.** While the national protocols of the reviewed countries do not recommend breastfeeding for HIV positive mothers, practices around breastfeeding differ significantly between countries in the EECA region. Poverty, socio-cultural and geographical constraints remain significant in making decisions related to breastfeeding practices. Not breastfeeding might result in social disclosure or stigmatization in certain countries or social/ethnic groups. A better understanding of this is needed, as it might significantly influence EMTCT impact indicators.
- 4. **Migration.** EECA has a significant population of migrants and refugees. Internal migration of populations at risk, with higher poverty and substance abuse, is an important obstacle in providing the follow-up of children born to mothers living with HIV or at risk of acquiring HIV.
- 5. **Late diagnosis.** Late diagnosis of HIV, both in the general population and among pregnant women, is a common problem in EECA. This delays the initiation of antiretroviral treatment and increases the risk of mother-to-child transmission of HIV.
- 6. **Access to HIV testing outside ANC.** Access to HIV testing for women who are not pregnant is very low in EECA. Women who are not sex workers or who do not inject drugs are often not considered to be a key population or at risk of HIV, and are therefore omitted from interventions such as testing or pre-exposure prophylaxis.
- 7. **Healthcare infrastructure.** The healthcare infrastructure in some EECA countries is inadequate in providing comprehensive PMTCT services. Specialized medical care still relies on a historically built vertical model with poor cross-incorporation between services (e.g., sexually transmitted infections, HIV and ANC). Due to a country's geographical features and economic imbalances, there remain significant disparities in the access to care. Most post-Soviet countries still struggle with a low number of medical staff per capita.
- 8. **Access to healthcare services.** Barriers to accessing healthcare services, including transportation costs and geographic isolation, can make it challenging for pregnant women to receive adequate antenatal and postnatal care.
- 9. **Lack of awareness and political will.** In some regions of EECA, mostly those with a low prevalence of HIV and thus a low absolute number of PMTCT cases, there is a lack of interest from the government, leading to missed opportunities for prevention and treatment.
- 10. **Economic and social factors.** Economic and social factors such as poverty and drug use contribute to the spread of HIV in EECA and make it more difficult for pregnant women to access PMTCT services. The provision of social care services and social benefits are often not sufficient to meet the needs of vulnerable populations both for the general population and people living with HIV.

- 11. Data collection and reporting.** Accurate data collection and reporting on PMTCT outcomes is inconsistent in some countries, making it difficult to track progress and identify areas that need improvement. EECA countries are lacking integrated electronic systems, and digitalization in the medical field is poor. The exceptions are Kazakhstan and Ukraine.
- 12. Internal validation.** Information on the internal assessment and validation processes at the national level is not available and it is therefore not possible to conclude on its performance and regularity.
- 13. Requests for external consultancy and validation.** Based on the fact that the RVC has performed only in four countries, and only three countries requested a consultancy, it can be concluded that most countries seem to be reluctant to seek support from external partners such as UNAIDS, UNICEF and WHO. Technical assistance, although available and financed by external partners, is also rarely requested (in only three countries). Factors responsible for it were not in the scope of this review and should be evaluated by engaging international agencies in direct dialogue with stakeholders, such as national AIDS centres and ministries of health.
- 14. Training of medical staff.** Programmes targeting EMTCT can only be successful with the involvement of medical staff in patient-centred and integrated care for people living with HIV. Engagement and empowerment of medical staff should also be included in the EMTCT agenda and should be supported with both governmental and external funding.
- 15. Individualized medical interventions in HIV diagnosis during delivery.** Access to intravenous azidothymidine is not available in the reviewed countries except for Belarus. When diagnosing HIV in an obstetrics ward during delivery, national protocols recommend providing oral prophylaxis to the mother and oral post-exposure prophylaxis to the newborn. Only in Belarus is intravenous azidothymidine available and incorporated into the national protocol.
- 16. Public availability of evaluation outcomes.** Most reports, both performed internally by NVC/S and externally by RVC/S are not made publicly available. In order to strengthen the cross-national exchange of experiences and provide transparency for international efforts to assist countries on the path to EMTCT, such activity should be regarded as a standard component of missions that are undertaken.

Addressing barriers to achieving EMTCT in EECA requires a comprehensive approach that includes reducing stigma, improving the healthcare infrastructure, increasing awareness, and strengthening data collection and reporting systems. However, numerous successful programmes have already been implemented by countries, and exchange of these experiences and mutual education about HIV/AIDS programmes in the eight priority countries should be encouraged.

International organizations, governments, and civil society groups play crucial roles in supporting EMTCT efforts in the region. Pragmatic and technical barriers to applications for EMTCT validation need further investigation, as countries might require additional financial or technical support in such processes. It is essential to continuously assess the evolving situation and adapt strategies to meet the specific challenges faced in EECA on the way to EMTCT and to fight the HIV epidemic.

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