

**HIV INFECTION AND THE SITUATION AMONG PREGNANT WOMEN: 2024
REGIONAL STATISTICAL ANALYSIS**

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Abstract: This article analyzes the detection, prevention, and statistics of HIV infection among pregnant women in the region for the year 2024. Mother-to-child transmission of HIV can occur during pregnancy, childbirth, and breastfeeding. To reduce the risk of virus transmission, prenatal screening, antiretroviral therapy, and special measures during delivery are crucial. In the region, 100% of pregnant women underwent HIV testing, with the number of newly detected cases remaining stable. Infection spread is more prominent in certain areas, with migration and sexual partners playing significant roles. The regional healthcare system conducts systematic monitoring of pregnant women and their families, implementing measures to reduce vertical HIV transmission. The article emphasizes the importance of strengthening prevention efforts to ensure a healthy generation.

Keywords: HIV, pregnancy, mother-to-child transmission, antiretroviral therapy, prenatal screening, vertical transmission, HIV prevention, sexual partners, migration, regional statistics, healthcare, pregnant women, HIV infection, medical monitoring, viral load reduction

Relevance of the Topic: Detection and prevention of HIV infection during pregnancy is a crucial issue for public health and the well-being of future generations. Mother-to-child transmission of the virus can occur during pregnancy, childbirth, and breastfeeding. The effectiveness of treatment and preventive measures plays a key role in reducing the spread of the virus. The stability of HIV infection cases across the region and the increase in some areas demand strengthening prevention efforts. Therefore, comprehensive screening, timely treatment, and medical supervision of pregnant women are vital to ensure the birth of healthy offspring, making this topic both urgent and a priority.

HIV during pregnancy refers to the presence of HIV/AIDS infection in a pregnant woman. The risk of mother-to-child transmission exists primarily in three stages: pregnancy, delivery, and breastfeeding. This issue is significant because appropriate medical interventions can substantially reduce the risk of virus transmission, while untreated HIV/AIDS can lead to severe illness and death in both mother and child. For example, data from the Centers for Disease Control and Prevention (CDC) indicate that between 2014 and 2017, among 10,257 infants born in the United States and Puerto Rico, mother-to-child transmission was preventable with proper prenatal care.

The severity of the HIV/AIDS pandemic, including mother-to-child transmission, disproportionately affects low- and middle-income countries, particularly those in Southern Africa. The World Health Organization (WHO) estimates that annually, 1.3 million women and girls living with HIV become pregnant.

Appropriate prenatal screening, treatment of HIV infection with antiretroviral therapy (ART), and adherence to postpartum recommendations significantly reduce the risk of neonatal HIV infection and maternal complications. It is important to emphasize that without antiretroviral drugs, obstetric intervention, and breastfeeding guidelines, the risk of mother-to-child HIV transmission is approximately 30%. When the aforementioned measures are implemented, this risk decreases to less than 1%.

The American College of Obstetricians and Gynecologists (ACOG) recommends HIV testing as a routine part of pre-pregnancy and first-trimester prenatal care to ensure timely and appropriate interventions.

Women living with HIV may choose to become pregnant if they wish, but it is recommended that they consult with their healthcare providers beforehand. Notably, 20–34% of women living with HIV in the United States are unaware of their diagnosis until they become pregnant or undergo prenatal screening.

HIV can be transmitted from an infected mother to her newborn in three ways: during pregnancy (in utero) through the placenta, during childbirth through contact with infected maternal blood and genital secretions, or postpartum through breastfeeding. This type of viral transmission is also called vertical transmission.

Mother-to-child HIV transmission most often occurs during delivery when the infant comes into direct contact with infected maternal blood or genital secretions in the birth canal. Treating the mother with ART before delivery reduces the viral load in her blood and other bodily fluids, significantly lowering the likelihood of transmitting the virus to the infant during birth.

The clinical presentation of HIV in untreated infants is more severe and distinct compared to adults. It is important to note that if HIV is diagnosed early and appropriate treatment is provided, symptoms and complications in the infant occur less frequently. Without ART therapy, infants born with HIV have a poor prognosis.

If symptoms develop, the most common signs include persistent fever, generalized lymphadenopathy (swelling of lymph nodes), enlargement of the spleen and/or liver, growth retardation, and diarrhea. These children are also at risk of opportunistic infections such as recurrent oral thrush (candidiasis) and/or Candida diaper rash, pneumonia, or invasive bacterial, viral, parasitic, or fungal infections.

Neurological symptoms, particularly HIV encephalopathy, are common in untreated HIV-infected infants.

Research Objective: Based on the analysis of HIV/AIDS disease, the aim is to promote disease prevention and healthy lifestyles among pregnant women.

Materials and Methods: The following methods were used in conducting the research:

1. Statistical method
2. Questionnaire (survey) method
3. Laboratory IFA (Immunofluorescence Assay) method

The issue of HIV (Human Immunodeficiency Virus) infection in Uzbekistan remains one of the priority directions of the public health system today. In particular, detecting and preventing HIV infection among pregnant women is of great importance for protecting public health. In 2024, statistics on HIV infection and testing among pregnant women in the region show changes compared to the previous year. This article analyzes the detection of

HIV infection among pregnant women in the region, as well as the effectiveness of prevention and control measures.

1. HIV Testing and Overall Status of Pregnant Women. In 2024, the number of pregnant women registered in the region increased significantly. While 104,639 pregnant women were tested in 2023, this figure rose to 111,282 in 2024, an increase of 7,051. This growth also led to an increase in the number of HIV tests conducted among pregnant women. In 2024, all pregnant women (100%) were subjected to laboratory testing using the Immunofluorescence Assay (IFA) method under code 109. This indicates comprehensive monitoring of HIV infection among pregnant women across the region. Additionally, while HIV was detected in 13 pregnant women in 2023, this number reached 14 in 2024. Although this change is not statistically significant, it shows that new HIV cases continue to be identified. However, statistical analysis indicates that the number of pregnant women tested in 2024 increased by 7,051 compared to 2023.

2. Geographic Distribution and Newly Identified HIV Cases. Among the 14 newly diagnosed pregnant women, a higher prevalence of the virus was observed in certain areas. Specifically, in the central regions — Margilan city and Dangara district each reported 3 cases; Quva district reported 2 cases; and one case each was recorded in Fergana, Kokand cities, as well as in Oltiariq, Toshloq, Uzbekistan, and Qo'shtepa districts. This indicates an increase or ongoing transmission of infection in some parts of the region, highlighting the need for focused attention from healthcare authorities.

3. Pregnant Women Previously Diagnosed with HIV and Their Medical Supervision. In the region, 108 pregnant women living with HIV and already under dispensary supervision were registered. Most of them were in their first or second pregnancy, with the main groups residing in Fergana (9), Kokand (10), Margilan (20), Dangara (11), and other districts. This situation highlights the necessity of monitoring HIV infection among pregnant women and organizing specialized healthcare services for them. In particular, it is crucial that these women receive quality medical care during pregnancy and that measures are taken to prevent mother-to-child transmission of the virus.

4. HIV Testing of Pregnant Women by Codes. In 2024, 108 pregnant women under dispensary supervision underwent HIV testing based on various codes. Among them, 18 were tested under code 109, 13 under code 101, 6 under code 105, 4 under code 106, 39 under code 113, 12 under code 115, 10 under code 116, and 6 under code 117.

The distribution of these codes indicates that testing is targeted at different risk groups, and HIV prevention measures are being implemented comprehensively. For example, code 113 corresponds to testing of family members or sexual partners, code 115 to testing of individuals about to marry, code 116 to testing of migrants, and code 117 covers youth and children.

5. Sexual Partners and Migration Factor. A high prevalence of HIV infection was detected among the sexual partners of pregnant women. According to the test results, 64 sexual partners tested positive for the virus. Among them, 43 were linked to migration, while 65 were not involved in migration. This indicates that migration plays a significant role in the spread of HIV infection and highlights the need to strengthen prevention and

detection efforts both among local populations and migrant groups. It is also noted that the majority of pregnant women were under dispensary supervision together with their spouses, many of whom later entered into official marriages.

6. Cases of Vertical Transmission. In 2024, three cases of vertical HIV transmission were recorded in the region - where the virus was transmitted from mother to child during pregnancy or childbirth. These cases were identified in Beshariq, Qo'shtepa, and Bo'g'dod districts, with epidemiological investigations confirming them. To prevent vertical transmission, timely HIV testing of pregnant women, antiretroviral therapy, and special measures during delivery are crucial. Strengthening targeted programs is required to reduce new infection cases among children.

Conclusion Although the detection rate of HIV infection among pregnant women in the region remained unchanged in 2024 compared to the previous year, the overall increase in the number of pregnant women and newly identified cases demands serious attention to HIV prevention within the healthcare system. A systematic approach is being implemented, including 100% testing coverage for all pregnant women, dispensary monitoring of women living with HIV, monitoring of sexual partners, and measures to reduce vertical transmission. Through enhanced cooperation between regional health authorities and social institutions, improvement of epidemiological investigations, and strengthening of educational activities, it is possible to reduce the spread of HIV infection and contribute to raising a healthy generation.

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