

ELIZABETH GLASER  
PEDIATRIC AIDS FOUNDATION

# Enhancing and Expanding PMTCT Services in Russia 2002–2008



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Creating a generation free of HIV.

# Acknowledgments

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# Executive Summary

In the Russian Federation, despite the availability of free maternal and child health services, socially vulnerable women (many of whom are injecting drug users) frequently do not access antenatal care, which includes routine HIV testing. These women are at high risk for HIV infection and are also at risk of passing HIV on to their infants.

This report will review the efforts of the Elizabeth Glaser Pediatric AIDS Foundation (the Foundation) and its partners to provide technical assistance to St. Petersburg and other selected regions to create a high-quality, replicable model of prevention of mother-to-child transmission (PMTCT) services and to address the special needs of high-risk women.

The Foundation's program primarily targeted maternity hospitals that serve high-risk women to provide these women with voluntary counseling and testing and, for those who test HIV-positive, antiretroviral (ARV) prophylaxis and other HIV-related services. The program focused strategically on these maternity hospitals because many high-risk women fail to attend antenatal care (ANC), where HIV testing is routine. While health facility-based delivery in Russia is nearly universal, even among high-risk women, the availability of HIV-related services at labor and delivery was extremely limited.

Specific program objectives included:

- Implement rapid HIV testing for women presenting in labor with undocumented HIV status and provide ARV prophylaxis for HIV-positive women;
- Implement enhanced monitoring of perinatal HIV transmission, including antenatal care, testing, seroprevalence, maternal and infant therapies, infant feeding practices, and abandonment; and
- Provide comprehensive PMTCT training for health care professionals, including obstetricians, neonatologists, nurses, and laboratory technicians.

The Foundation initiated planning activities in the Russian Federation in 2002 and began support for program implementation in 2004. Qualitative achievements of the program included a) revising PMTCT policies, protocols, and procedures to be more effective; b) establishing effective data collection and monitoring systems; c) delivering high-quality PMTCT services in St. Petersburg and other selected areas; d) building local and national capacity; e) providing advocacy for PMTCT; and f) facilitating technical exchanges.

Quantitative achievements from 2004 to 2008 included providing comprehensive PMTCT services in 31 sites, including HIV counseling and testing to over 22,000 women eligible for testing in labor and delivery as well as ARV prophylaxis to 76% of identified HIV-positive women and 93% of their HIV-exposed infants.

Through the program, a deeper understanding of the profile of high-risk, HIV-positive women was achieved, including a) the special challenges encountered when serving and following up injecting drug users (IDUs), and b) the problems of infant abandonment and unwanted pregnancy. In terms of improving the operation of PMTCT services in the Russian Federation, important lessons were learned concerning the critical role of appropriate laboratory policies and support, and the value of local data and international experience to inform PMTCT policies and protocols. Finally, based on program experience, considerations for the future of PMTCT in the Russian Federation are proposed.

As the epidemic continues to spread in the Russian Federation and other former Soviet Union states, these lessons learned should be valuable for PMTCT efforts in those regions. They will also be applicable to other settings where a significant proportion of HIV-positive women are IDUs.

# Introduction

The Elizabeth Glaser Pediatric AIDS Foundation originated in 1988 with recognition of the urgent need to help children affected by HIV and AIDS. At that time, gaps in knowledge resulted in a lack of services and care for children.

The Foundation sought to fill these gaps in the management and care of HIV-infected children and their families, with early funding targeted to research on pediatric HIV and prevention of mother-to-child transmission. The highly successful research, advocacy, and prevention and treatment programs of the Foundation and its partners resulted in dramatic advances that have virtually eliminated pediatric AIDS in the United States. Now working in 18 countries worldwide, the Foundation's commitment to these priorities — and in creating a generation free of HIV — has stayed constant as its scope has broadened to a global stage.

The Foundation works with governments in host countries, and through existing facilities to the extent possible, to expand access to critical HIV/AIDS prevention, care, and treatment services. The Foundation also provides over-all guidance, technical leadership, and direct support to national agencies to enhance the care of women and children, partnering with community-based organizations to ensure that important decisions are made locally.

In 2002, the Foundation recognized that the Russian HIV epidemic was one of the fastest-growing epidemics in the world in a sub-population, and that PMTCT services were not sufficiently reaching high-risk, socially vulnerable women, many of whom were IDUs. In response, the Foundation funded a planning grant for St. Petersburg and Leningrad Oblast<sup>a</sup> to better understand existing PMTCT needs and services and to lay the groundwork for development of a PMTCT technical assistance and implementation model that would a) respond to the unique needs of the Russian epidemic, and b) coordinate all available services and resources.

At that time, the Russian Federation, unlike most countries that receive foreign assistance for HIV/AIDS, had a well-established health infrastructure and more specifically, a free and comprehensive ANC system. ANC services provided nearly universal HIV testing for pregnant women and a system for referral of HIV-positive women for ARV prophylaxis, treatment, and other HIV/AIDS-related services. However, despite the universal availability of HIV testing for pregnant women, PMTCT services were found to be inconsistent, ineffective,

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<sup>a</sup> The geographic/administrative region outside St. Petersburg city.

and inadequately coordinated. Furthermore, PMTCT services did not reach women who did not access ANC. Many women who did not access ANC were HIV-positive, and/or IDUs, with very special needs.

This program was targeted, therefore, at high-risk pregnant women who had received either no ANC or insufficient ANC, to provide them with voluntary counseling and rapid testing for HIV at the time of delivery, intrapartum ARV prophylaxis, and other related services. The program focused primarily on the maternity hospitals that served high-risk women rather than on ANC services, which are traditionally the entry point for PMTCT in other countries.

Improving PMTCT services was achieved through three complementary activities: comprehensive training of health care providers, direct support for program implementation at sites, and monitoring and surveillance.

Over time, the program expanded its areas of focus in response to ongoing analysis of comprehensive program data that revealed gaps in services and new opportunities to address HIV-related challenges such as follow-up for treatment, infant abandonment, family planning, etc. The program also expanded its services geographically to serve additional facilities in smaller towns outside St. Petersburg and Leningrad Oblast and to provide models of PMTCT care that could be replicated across the Russian Federation.

Between 2002 and 2008, the Foundation and its Russian and American partners provided technical assistance that resulted in improving the quality, comprehensiveness, and reach of PMTCT services; served large numbers of women in the target group; and reduced mother-to-child transmission (MTCT) of HIV. Given existing resources in Russia and a growing commitment by the national government, the Foundation's Russia program was originally designed to be a time-limited, demonstration project after which the Russian government would assume complete funding responsibility. As originally planned, all program sites successfully transitioned from Foundation-supported technical and financial assistance for PMTCT service delivery to national government support at the end of 2008. Throughout the life of the program, a strong U.S.-Russian bilateral partnership and the commitment of the Russian leadership to PMTCT was a critical factor in its success.

In terms of funding, financial resources for the program from 2004 to 2006 were provided through the United States Agency for International Development (USAID), and from 2004 to 2008 through Johnson & Johnson.

# I. Background

The Russian epidemic is unique, resembling neither the pattern experienced by most industrialized countries nor resource-poor countries. HIV continues to grow in the Russian Federation but at a slower pace than in the late 1990s.



## The HIV/AIDS Epidemic

The Russian epidemic is unique, resembling neither the pattern experienced by most industrialized countries nor that seen in resource-poor countries. HIV continues to grow in the Russian Federation but at a slower pace than in the late 1990s<sup>1</sup>. It is estimated that 940,000 people were living with HIV in the Russian Federation at the end of 2005<sup>2</sup>.

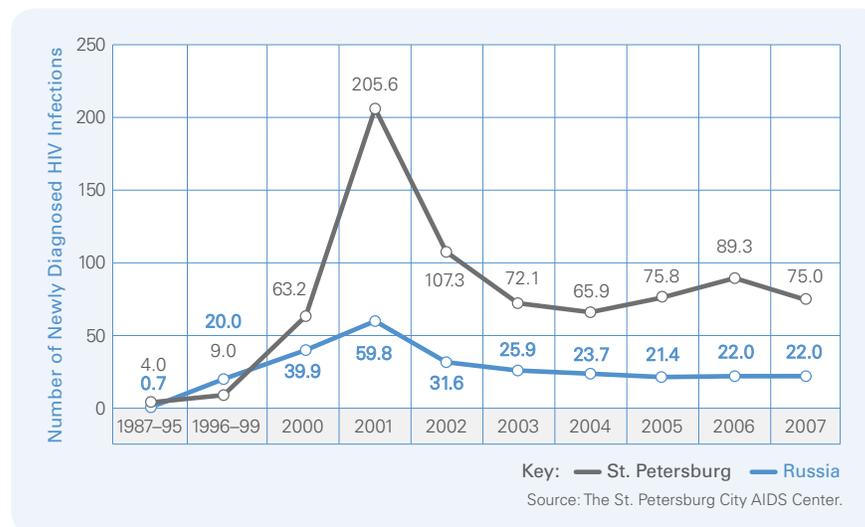
In 2006–2007, 44% of persons living with HIV/AIDS in the Russian Federation were women<sup>3</sup>. About two-thirds of these infections in women are attributed directly or indirectly to injection drug use<sup>4</sup>; however, federal data indicate that the proportion attributable to heterosexual transmission is increasing, reflecting a move from a concentrated to a more generalized epidemic<sup>5</sup>. In Russia, injection drug use and sex work are closely related<sup>6</sup>, exacerbating the social vulnerability of HIV-positive women of reproductive age.

A large proportion (59%) of Russians affected by HIV live in 10 major cities and regions, including St. Petersburg and Leningrad Oblast. The high burden of HIV in St. Petersburg compared to the national average (see Figure 1) was a major impetus for government authorities to request the Foundation to situate its PMTCT program there.

St. Petersburg has an estimated seroprevalence rate of about 1.5% in the general adult population aged 15–49, and about 30% in IDUs. According to the St. Petersburg City AIDS Center (CAC), seroprevalence rates among pregnant women in St. Petersburg are 0.79%<sup>7</sup>, higher than the national average of 0.4% (in 2006)<sup>8</sup>. The majority of HIV infections (57%) occur in persons under the age of 30<sup>9</sup>.

In 2006–2007, 44% of persons living with HIV/AIDS in the Russian Federation were women. About two-thirds of those infections in women are attributed directly or indirectly to injection drug use.

**Figure 1: Dynamic of HIV Infection in St. Petersburg Compared to the Dynamic in Russia in 1987–2007 (per 100,000 population)**



## The Organization of Women’s Health and HIV/AIDS Services

The Russian reproductive health care delivery system follows the former Soviet system. It is extensive and provides good coverage. The World Health Organization (WHO) estimates that 96% of pregnant women (in 1999) had at least one antenatal visit, and over 99% (in 2002) had their births attended by skilled health personnel<sup>10</sup>. An estimated 86% of HIV-positive pregnant women overall in Russia received ARV prophylaxis drugs for PMTCT in 2006<sup>11</sup>. These encouraging data from the general population do not, however, represent the status of high-risk, socially vulnerable pregnant women who were targeted in this program.

ANC services in the Russian Federation are offered free at Women’s Consultation Centers (WCCs), and women typically attend the WCC closest to their residence. These facilities also provide family planning, termination of pregnancy, sexually transmitted infection (STI) care, and a range of related services.

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For many years, WCCs have been required to provide pregnant women with HIV tests, although these tests were not always voluntary, nor were they systematically accompanied by appropriate pre- or post-test counseling or related HIV services.

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For many years, WCCs have been required to provide pregnant women with HIV tests, although these tests were not always voluntary, nor were they systematically accompanied by appropriate pre- or post-test counseling or related HIV services. Women usually receive their first required HIV test during pregnancy before 34 weeks of gestation, and the second test after 34 weeks. With the required Russian Ministry of Health (MOH) testing algorithm (see section III. The Importance of Appropriate Laboratory Policies and Support), there can be a significant time lag between blood draw and diagnosis. If a test is not performed after 34 weeks, the woman is required to be tested in labor and delivery. The program learned that this testing policy resulted in more than 50% of women delivering at program hospitals being eligible for rapid testing at labor and delivery, far more than initially anticipated. This likely indicates that some women may come for initial but not later/follow-up visits or WCC personnel may conduct the second required test before 34 weeks gestation, causing women to require a third test at the maternity hospital.

Pregnant women in St. Petersburg who have no serious infectious diseases (including HIV) deliver in one of 14 government maternity hospitals. Women with known serious infections (including HIV) are referred to the Botkin Infectious Diseases Hospital for delivery. HIV-positive women are eligible to receive state-subsidized confirmation of the initial HIV-positive test result, HIV care and treatment, and HIV-related testing and care for their infants at the St. Petersburg CAC. HIV-positive women (who intend to carry their pregnancy to term) receive ARV prophylaxis or treatment, depending on their CD4 count. Outside of St. Petersburg and Leningrad Oblast, AIDS treatment services are available at local AIDS centers throughout the Russian Federation and are also subsidized by the state.

In St. Petersburg, women in early labor who have not received ANC and do not have appropriate documentation of negative HIV status in their prenatal care record are required by MOH policy to be taken (by ambulance) to one of two high-risk referral hospitals, Maternity Hospital 16 (MH16) or Maternity Hospital 17 (MH17)<sup>b</sup>. Women in advanced labor can be admitted to any maternity hospital. Very few women deliver without medical care.

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<sup>b</sup> Formerly named Maternity Hospital 15.

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Maria, a pregnant woman who received no ANC, was identified as HIV-positive through rapid testing in labor and delivery at Tosno MH. As a result of the program's interventions, Maria gave birth to an HIV-negative baby boy, Kolya.

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If women coming to MH16 or MH17 for delivery are determined to be HIV-positive but have not received any ARV prophylaxis during the pregnancy, ARV prophylaxis can still be administered during labor and delivery to reduce the risk of MTCT. Before this program was initiated, HIV test results for women tested in labor and delivery were not routinely provided until after discharge from the maternity hospital due to the long turnaround time for processing test results. Recognizing that many of these high-risk women were IDUs, in 2003 the MOH mandated that all known or suspected IDUs who presented in maternity hospitals receive nevirapine (NVP) prophylaxis without needing to have a positive HIV test. This approach proved insufficient, and many women were missed. The Foundation found that fewer than half of HIV-positive women actually received prophylaxis<sup>12</sup>.

The recommended length of stay in a maternity hospital in the Russian Federation is five days, although many women who are IDUs leave the hospital early, against medical advice. Women who test HIV-positive by rapid test in these high-risk hospitals are referred to the CAC for follow-up services after delivery.

## II. Foundation-Supported PMTCT Program

The Foundation's program was initiated with the goal of increasing coverage of PMTCT services to 90% of HIV-positive women delivering in St. Petersburg, focusing especially on women who had not accessed ANC during pregnancy.



## Rationale and Objectives

The Foundation-supported PMTCT program in Russia was originally designed for St. Petersburg and Leningrad Oblast, where rates of HIV seroprevalence were known to be rising, where injection drug use continued to be the major mode of HIV transmission, and where PMTCT was an issue of significant concern. It was intended that the model developed in St. Petersburg would then be replicated in a limited number of other higher seroprevalence regions of Russia, and that the program experience and expertise of St. Petersburg leadership would be shared by the federal government with additional regions of the country. A Foundation planning grant supported the initial collection and analysis of data, which confirmed the following situation in St. Petersburg and Leningrad Oblast at the beginning of this program<sup>13</sup>:

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From 1998 to 2002,  
HIV seroprevalence  
among all pregnant  
women increased  
**100-fold**,  
from 0.013% to 1.3%.

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- From 1998 to 2002, HIV seroprevalence among all pregnant women increased 100-fold, from 0.013% to 1.3%.
- In 2002, HIV seroprevalence in pregnant women with no prenatal care was 7.7%, compared to 1.0% for women with prenatal care.
- Whereas 100% of HIV-positive women with ANC received intrapartum ART, only 41% of HIV-positive women with no ANC received intrapartum ART—prophylaxis was driven by IDU status rather than HIV test results<sup>c</sup>.
- Point-of-care rapid HIV tests were not used systematically for pregnant women.
- While HIV testing in ANC was nearly universal, ANC counseling concerning HIV was not adequate. Among women who did receive ANC and an HIV test, only 61% reported that they had been informed that they had been tested for HIV.
- There was no standard, core training curriculum on PMTCT for health workers, and health workers remained largely uninformed about the basic mechanisms of perinatal transmission or about PMTCT interventions.

High rates of unwanted pregnancy and infant abandonment were also documented, leading the program to expand its focus to consider those two problems as well:

- Infant abandonment was especially common among HIV-positive women with no ANC—26% of them abandoned their infants at birth, compared to 4% of HIV-positive mothers with prenatal care, and 1% for HIV-negative mothers<sup>14</sup>.
- Socially vulnerable women who did not access ANC missed the opportunity to receive family planning counseling and contraceptive methods.

Pregnant women were largely left out of the system of HIV testing and services if they did not avail themselves of ANC. Pregnant women at high risk include women who inject drugs, non-IDU sex partners of drug users, and migrant women who lack the necessary documentation to receive state-subsidized ANC services. While high-risk women who delivered in a maternity hospital generally had blood drawn for HIV tests during labor, Enzyme-Linked ImmunoSorbent Assay (ELISA) and Western Blot technologies were used, and test results were often received too late to provide intrapartum ARV prophylaxis for those women who tested positive.

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<sup>c</sup> Those 41% received NVP prophylaxis due to a policy of prophylactic treatment for known or suspected IDUs.

## II. Foundation-Supported PMTCT Program (Continued)

The program was initiated with the goal of increasing the coverage of PMTCT services to 90% of HIV-positive pregnant women delivering in St. Petersburg, focusing especially on pregnant women who had not accessed ANC during pregnancy and who presented in labor at one of the designated high-risk maternity hospitals.

### Objectives of the program:

- Implement rapid HIV testing for women presenting in labor with undocumented HIV status and provide ARV prophylaxis for HIV-positive women;
- Implement enhanced monitoring of perinatal HIV transmission, including ANC, testing, seroprevalence, maternal and infant therapies, infant feeding practices, and abandonment; and
- Provide comprehensive PMTCT training for health care professionals, including obstetricians, neonatologists, nurses, and laboratory technicians.

In year two, additional goals included strengthening family planning counseling and referral to prevent future unintended pregnancies in HIV-positive women, and strengthening social services to prevent infant abandonment.

### Development and Expansion

In addition to providing funding, the Foundation's role in Russia included provision of technical assistance, advocacy, and program management. The Foundation helped guide the strategic direction of the program, leveraged and coordinated technical inputs from partner organizations, and raised visibility of the special needs of this particular cadre of HIV-positive women in Russia while advocating for necessary policy reform to address these needs. The Foundation also provided technical leadership by sharing lessons learned and innovative approaches from other country programs, based on its extensive global implementation experience in PMTCT.

In 2004, an in-country team was put in place to lead and coordinate the program. Throughout the program period, a number of other partners played a key role in engaging local leadership and providing technical, managerial, and administrative support:

- Russian Federation Ministry of Health;
- St. Petersburg City Health Committee;
- St. Petersburg City AIDS Center;
- Federal AIDS Center;
- University of North Carolina, Chapel Hill, Department of Epidemiology (for technical support and implementation);
- Centers for Disease Control and Prevention (CDC) U.S. (for technical support, especially the establishment and management of a comprehensive perinatal HIV monitoring system);
- Civilian Research Defense Foundation (CRDF) (for local administrative support); and
- View of the Future (for fiscal management and local procurement).

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The Foundation helped guide the strategic direction of the program, leveraged and coordinated technical inputs from partner organizations, and raised visibility of the special needs of this particular cadre of HIV-positive women in Russia while advocating for necessary policy reform.

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The program also collaborated at a later stage with local NGOs, Assistance to Russian Orphans (ARO), Doctors of the World (DOW), John Snow, Inc. (JSI), the American International Health Alliance (AIHA), and the United Nations Children's Fund (UNICEF).

To coordinate the evolving PMTCT activities, a St. Petersburg/Leningrad Oblast MTCT Steering Committee composed of key local and federal HIV/AIDS leadership was established to guide the program, and it remained active until the end of the program. It was anticipated that the Steering Committee would ensure the commitment of local leadership after the eventual withdrawal of support from the Foundation and other international partners.

The initial program sites were MH16, MH17, and Botkin Hospital in St. Petersburg city. Gatchina Maternity Hospital in Leningrad Oblast, outside St. Petersburg, was also included based on its high maternity caseload, high rate of HIV seroprevalence, and lack of provision of rapid HIV tests or ARV prophylaxis.

The initial program focus concentrated on providing comprehensive PMTCT training for key HIV/AIDS leaders and health care professionals, including gynecologists, obstetricians, infectious disease specialists, pediatricians, and nurses. In addition, a comprehensive data collection and monitoring system was established by CDC experts.

In April 2004, the following package of services was initiated at MH16 and MH17: voluntary counseling, point-of-care rapid testing for eligible women, intrapartum ARV prophylaxis for HIV-positive women, and free replacement feeding for their infants.

The program expanded its geographical coverage significantly over the four-year period (see Table 1). In 2005, three additional maternity hospitals in rural areas of Leningrad Oblast were added: Tosno MH, Lomonosov MH, and Vsevolgsk MH. Site assessments were conducted, training was held, and PMTCT services were initiated in September 2005. In 2006, three additional hospitals in high-seroprevalence areas were added: MH10, Pushkin MH, and Priozersk MH.

From 2004 to 2006 (the phased full program implementation period described above), the Foundation provided financial support to sites for commodity and equipment purchases and health care personnel salary as well as training and technical assistance in order to demonstrate the importance of PMTCT for this cohort of high-risk women and to show that a special model could be created to reach them.

Finally, in 2007–2008, in response to a government request, the Foundation added sites in four additional high-seroprevalence regions of the country outside Leningrad Oblast through introduction of a technical assistance/training model. The program provided only short-term training and support in data collection, but no financial support for implementation (such as site personnel salary, test kit, and ARV supply or provision of medical equipment). The new regions were Ekaterinburg, Chelyabinsk, Orenburg, and Magnitogorsk. The established program in St. Petersburg and Leningrad Oblast served as a training center for these four expansion regions, and mature sites served as examples for demonstrating successful implementation. The program's technical team conducted routine visits to the new sites to provide training, mentorship, and ongoing technical assistance.

II. Foundation-Supported  
PMTCT Program  
(Continued)

**Table 1: Geographic Location and Expansion of the Program**

GEOGRAPHIC AREA	2004–2005	2005–2006	2006–2007	2007–2008
<b>ST. PETERSBURG</b>				
Maternity Hospital 16	X	X	X	X
Maternity Hospital 17	X	X	X	X
Botkin Hospital	X	X	X	X
Maternity Hospital 10			X	X
Pushkin Hospital			X	X
<b>LENINGRAD OBLAST</b>				
Gatchina Hospital	X	X	X	X
Lomonosov Hospital		X	X	X
Vsevolgsk Hospital		X	X	X
Tosno Hospital		X	X	X
Priozersk Hospital			X	X
<b>OTHER REGIONS*</b>				
Ekaterinburg				X
Chelyabinsk				X
Orenburg				X
Magnitogorsk				X

\*For the four other geographic areas, multiple (21) sites were served.

Throughout the period of program development and implementation, program staff and partners participated in national working groups and forums to contribute their unique experience in targeting PMTCT services for high-risk women, to engage in national policy dialogue, and to inform national guidelines for wide dissemination.

From 2007 to 2008, the Foundation initiated the planned transition of its Russia PMTCT program. In December 2007, four of the 10 original program sites graduated from reliance on Foundation support, and, as planned, the government assumed responsibility for providing test kits, drugs, ongoing training, and program monitoring. At this time, these sites stopped reporting data to the Foundation. The six remaining sites in St. Petersburg and Leningrad Oblast transitioned to local support in June 2008 and stopped reporting to the Foundation as of July 1, 2008. All remaining sites in the four regions outside of St. Petersburg graduated from Foundation support in December 2008 and stopped reporting data as of December 31, 2008.

While the original focus of the program was limited to the intrapartum phase of the PMTCT cascade, it became clear that success in reducing MTCT was inextricably related to improving the antenatal component of PMTCT services and also the postpartum follow-up phase.

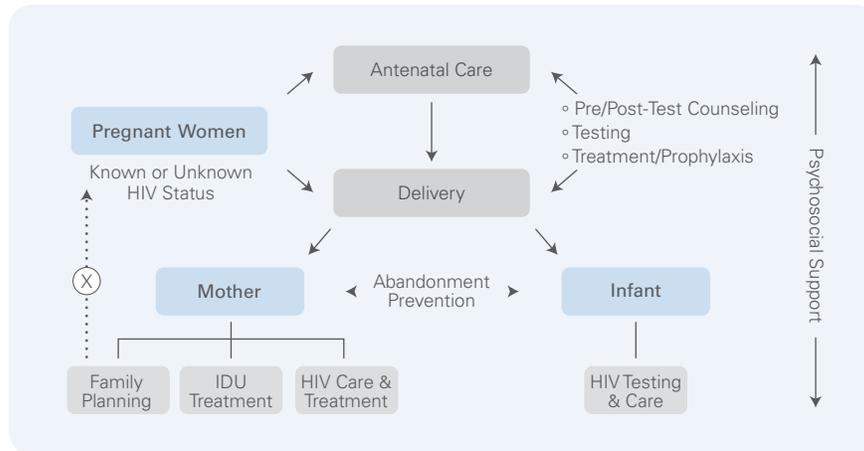
As a result, the Foundation added additional program components, including:

- Special PMTCT training for all ANC clinics in St. Petersburg to improve the quality of PMTCT services at that level;
- A home visit component to follow up women identified as HIV-positive and their infants; and
- Collaboration with a Doctors of the World project to provide social support to HIV-positive women while they were in the maternity hospitals.

Program staff and partners developed a comprehensive model of PMTCT care appropriate for the Russian context (see Figure 2). The model emphasizes the need for interdisciplinary collaboration and a systems approach to PMTCT. The model also highlights the importance of preventing unwanted pregnancy as a primary means of preventing vertical transmission of HIV.

Following this model, pregnant women with known or unknown HIV status enter the system for ANC or delivery. Emphasis is placed on encouraging at-risk women to receive routine ANC. During ANC, high-quality pre-test counseling, testing, and post-test counseling are provided as well as appropriate treatment and prophylaxis for women who test HIV-positive. For women who do not come for ANC, these same services are provided in the maternity hospital. After delivery, efforts are undertaken to limit abandonment of the infant. The infant is referred for appropriate HIV testing and care, if necessary. Care of the mother couples HIV care with treatment for injection drug use. Furthermore, family planning is emphasized to limit future unwanted pregnancies. Throughout this sequence, psychosocial support is critical for the mothers and their families.

**Figure 2: Model of PMTCT Care for the Russian Context**



## Program Accomplishments

### A. Qualitative Achievements

The Foundation-supported program in Russia succeeded in improving the coverage and quality of PMTCT services for high-risk women in St. Petersburg and Leningrad Oblast and beyond, and established a PMTCT model that could be replicated throughout the country. Detailed qualitative program accomplishments include:

#### Revising PMTCT policies, protocols, and procedures:

- Informing national rapid HIV testing guidelines;
- Strengthening linkages to care and treatment programs;
- Developing more sustainable and cost-effective methods for PMTCT implementation; and
- Improving the follow-up of HIV-positive women and their infants by introducing postpartum home visits.

#### Establishing complex data collection and monitoring systems to track performance and inform adjustments in PMTCT policies, protocols, and procedures:

- Strengthening local capacity for data collection and analysis to improve quality of service delivery and to position regions to use program data to monitor and evaluate their own progress.

#### Delivering high-quality PMTCT services in St. Petersburg and Leningrad Oblast:

- Reaching more women of unknown serostatus with HIV testing at labor and delivery;
- Increasing provision of ARV prophylaxis for women with positive rapid HIV test results;
- Rolling out complex ARV regimens for PMTCT in program sites;
- Improving the quality of HIV-related counseling for pregnant women in ANC clinics and in maternity;
- Ensuring a regular supply of ARV prophylaxis drugs and test kits to Foundation-assisted maternity hospitals; and
- Strengthening the family planning component of overall services.

#### Local and national capacity-building:

- Training all relevant health workers in PMTCT in St. Petersburg and Leningrad Oblast, and four additional regions.

**Advocating for the importance of PMTCT services and linking all responsible governmental agencies involved in maternal and newborn child care and HIV services, for integrated PMTCT.**

**Providing technical leadership in the Russian Federation and internationally through facilitating high-level Russian MOH and USAID/Moscow staff technical exchange in the United States, making PMTCT presentations at conferences, and publishing PMTCT program articles in peer-reviewed journals.**

## B. Quantitative Achievements

Prior to program implementation, little baseline data were available to illustrate progress along the program's PMTCT data cascade, although anecdotal evidence suggests coverage of PMTCT services in labor and delivery before Foundation support was very low. The program succeeded in providing services in 31 sites overall, and provided counseling, testing, and test results to over 22,000 women deemed eligible for testing in labor and delivery at program-assisted maternity hospitals. Of the 24,365 eligible women served through June 2008, 97% received counseling; 94% of those counseled received testing; and of those tested, 100% received (preliminary) HIV test results before discharge from the maternity hospital (see Table 2).

**Table 2: Counseling, Testing, and Providing Test Results to Women (Eligible for Testing) in Program-Assisted Maternity Hospitals, 2004–2008**

YEAR	# SITES	ELIGIBLE WOMEN	COUNSELED		TESTED		RESULTS RECD	
			#	%	#	%	#	%
2004*	3	3,509	3,053	87%	2,818	92%	2,815	100%
2005	7	4,550	4,386	96%	4,169	95%	4,169	100%
2006	10	4,427	4,303	97%	4,046	94%	4,046	100%
2007	31	8,049	7,988	99%	7,389	93%	7,385	100%
2008**	27	3,830	3,830	100%	3,710	97%	3,710	100%
<b>TOTAL</b>		<b>24,365</b>	<b>23,560</b>	<b>97%</b>	<b>22,132</b>	<b>94%</b>	<b>22,125</b>	<b>100%</b>

\*April–December only. \*\*January–June only. Source: GLASER database. EGPAF Interval Comparison Report — Country Summary Russia. Washington, DC: Elizabeth Glaser Pediatric AIDS Foundation; 2008.

The program also enabled the majority of HIV-positive mothers (and their infants) who delivered at program-assisted hospitals to receive ARV prophylaxis (see Table 3). In most PMTCT programs in resource-poor settings in Sub-Saharan Africa, uptake of maternal ARV prophylaxis exceeds uptake of infant prophylaxis due to a number of factors. The Russia program context was unique, as a greater proportion of infants (93%) received prophylaxis than did their mothers (76%). Reasons for this discordance include: the Russia program served a special cohort of women who did not access ANC services and hence did not receive testing and ARV prophylaxis during ANC; many high-risk mothers arrived too late in labor to complete the process of HIV testing and administration of maternal prophylaxis before delivery, yet there was still opportunity to provide infant prophylaxis postpartum; and the rate of facility-based deliveries in Russia is very high, presenting opportunities to provide prophylaxis to infants in the maternity setting.

**Table 3: Provision of ARV Prophylaxis to HIV-Positive Women at Program-Assisted Maternity Hospitals, 2004–2008**

YEAR	WOMEN TESTING HIV POSITIVE	WOMEN RECEIVING ARV PROPHYLAXIS		INFANTS RECEIVING ARV PROPHYLAXIS	
		#	%	#	%
2004*	91	67	74%	84	92%
2005	141	108	77%	127	90%
2006	134	98	73%	119	89%
2007	229	176	77%	220	96%
2008**	154	121	79%	144	94%
<b>TOTAL</b>	<b>749</b>	<b>570</b>	<b>76%</b>	<b>694</b>	<b>93%</b>

\*April–December only. \*\*January–June only. Source: GLASER database. EGPAF Interval Comparison Report — Country Summary Russia. Washington, DC: Elizabeth Glaser Pediatric AIDS Foundation; 2008.

### III. Lessons Learned for PMTCT in Russia

Through the Foundation's support offered to the Russian Federation, a number of valuable lessons have been learned related to the development of a PMTCT model appropriate to the unique Russian situation.



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### Understanding the Profile of High-Risk, HIV-Positive Women

Data collected from women who gave birth at program-assisted maternity hospitals reveal that between 2004 and 2008, an average of 3.4% of these women were HIV-positive. This sample, however, includes:

- Women who delivered in a program-supported maternity hospital because they lived nearby rather than because they were necessarily high risk; and
- Women who did receive ANC but whose HIV testing was incomplete during pregnancy according to Russian policy.

In contrast, between 2004 and 2008, seroprevalence among women who delivered in program-assisted hospitals who had received no ANC was about 7.0%. Both rates are considerably higher than the St. Petersburg CAC's estimated 0.79% seroprevalence among the general population of pregnant women in St. Petersburg. See Table 4 for a breakdown of seroprevalence rates by year of program operation.

Understanding the special socio-demographic concerns of high-risk women is essential for developing appropriate and effective PMTCT services to meet their special needs.

**Table 4: Seroprevalence among all Women Tested at Program-Assisted Maternity Hospitals, April 2004–June 2008**

YEAR	TOTAL WOMEN TESTED	WOMEN TESTING HIV POSITIVE	
		#	%
2004*	2,818	91	3.2%
2005	4,169	141	3.4%
2006	4,046	134	3.3%
2007	7,389	229	3.1%
2008**	3,710	154	4.2%
<b>TOTAL</b>	<b>22,132</b>	<b>749</b>	<b>3.4%</b>

\*April–December only. \*\*January–June only.

Source: GLASER database. EGPAF Interval Comparison Report—Country Summary Russia. Washington, DC: Elizabeth Glaser Pediatric AIDS Foundation; 2008.

### Intravenous Drug Users: Special Challenges

An estimated 1.5 million to 3 million (1%–2%) of the Russian Federation's population (141.4 million) are estimated to be IDUs<sup>15</sup>, and about a third of Russian IDUs are women. As mentioned in section I, federal data show that injection drug use is a major driver of the Russia-wide HIV/AIDS epidemic, and program data confirm this pattern.

Program experience also indicates that there is a pattern of social vulnerability and marginalization among HIV-positive women and especially among those who inject drugs. It appears difficult to achieve the same health-seeking behavior and health results from HIV-positive women with a history of injection drug use compared with those with no history of injection drug use. IDUs prove to be difficult to reach with services during pregnancy and difficult to engage or retain in follow-up.

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CDC conducted a cohort study among HIV-positive women giving birth at program sites in St. Petersburg (including those who accessed ANC and were of known HIV-positive status at time of delivery as well as those who tested HIV-positive through the Foundation's maternity-based PMTCT program). Among 1,553 HIV-positive women giving birth in St. Petersburg during the first three years of the program, 62.7% reported injection drug use in year one (2004–2005), 56.6% in year two (2005–2006), and 46.4% in year three (2006–2007). Among non-IDUs, initiation of antiretroviral prophylaxis before 28 weeks gestation increased for years one, two, and three, respectively (44.0%, 55.4%, and 66.4%). However, among IDUs, the proportion of women who received prenatal antiretroviral prophylaxis actually decreased (63.4%, 52.6%, and 51.2%) during the same three-year period. In addition, infant abandonment increased among IDUs from 18.1% to 26.1% to 28.9%<sup>16</sup>.

Creative, innovative, and affordable ways to address the needs of IDUs must continue to be developed and evaluated.

### Addressing Infant Abandonment

One of the unanticipated findings of the initial data collected by this program was the high incidence of infant abandonment among infants born to HIV-positive mothers. Early program data showed that in women who were HIV-positive, 26% (30/114) of those without prenatal care and 4% (13/371) of those with prenatal care relinquished their infants to the custody of the state, compared with 1% (354/37,621) of HIV-negative women<sup>17</sup>.

Babies who are formally relinquished by their mothers to the custody of the state are transferred to a pediatric hospital first, and later to an orphanage for HIV-exposed babies. Babies who are abandoned without being formally relinquished face an even more insecure future.

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Infants abandoned in hospital by HIV-positive mothers often end up as “boarder babies,” remaining for months or years in hospitals waiting for placement, or in special orphanages for perinatally exposed infants.

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The reasons for this relinquishment or abandonment are not clearly understood, but program collaborators postulate that the same factors that contribute to HIV infection, including stigma and inadequate counseling and support, may also contribute to abandonment<sup>18</sup>. It has been noted that this was the same pattern experienced in the early years of the New York City HIV epidemic in IDUs<sup>19</sup>.

The implications of being orphaned for both relinquished and abandoned infants are dramatic. Infants abandoned in hospital by HIV-positive mothers often end up as “boarder babies,” remaining for months or years in hospitals waiting for placement, or in special orphanages for perinatally exposed infants. In these health care facilities, they can be deprived of appropriate educational and social support, resulting in lifelong mental and physical disorders. Standard orphanages often refuse to accept them<sup>20</sup>. In 2000, over 80% of these HIV-exposed infants eventually tested HIV-negative, but the long-term developmental consequences of their prolonged hospitalization can be profound<sup>21,22</sup>. In 2002, Russian policy classified these babies as HIV-exposed and potentially HIV-infected until a negative antibody test was documented after age 18 months. This policy is currently under revision and proposes to classify infants with two negative polymerase chain reaction (PCR) tests at one and four months as HIV-negative.

Concerned about this situation, the Foundation closely followed the work of the ARO, which, with CDC support, studied determinants of child abandonment and unintended pregnancy among HIV-positive women in four highly affected cities. The study was used to identify steps that could most effectively lower the rate of unplanned pregnancy and to develop abandonment prevention efforts targeted at HIV-positive mothers and their families. HIV-positive women who delivered in MH16 and MH17 participated in the study.

Initial findings from the study showed that the reasons for abandonment are similar in HIV-positive and HIV-negative women, and that the primary reason for abandonment for both groups is unintended pregnancy. Other factors included lack of social support from immediate family and relatives, lack of support from the child’s father, the mother’s marginalized socio-economic status, and maternal drug and alcohol addiction. Fears of birth defects and mental disorders in HIV-exposed infants were additional concerns for HIV-positive women<sup>23</sup>.

These findings underscored the importance of:

- Thorough family planning counseling of HIV-positive women in maternity hospitals, before discharge, together with follow-up care (see section III. Reducing the Incidence of Unwanted Pregnancies and Ensuring Follow-Up of Socially Vulnerable Women);
- A revision of Russian policies and procedures for testing and for placing HIV-exposed, abandoned infants<sup>d</sup>; and
- Devising means for family planning for IDUs prior to pregnancy.

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<sup>d</sup> At the time of publication of this document, a review of Russian protocols for early infant diagnosis was being undertaken.

## Reducing the Incidence of Unwanted Pregnancies

Family planning is widely available in the Russian Federation, although there continues to be a high reliance on termination of pregnancy (which is legal in the Russian Federation) over modern methods of contraception<sup>e</sup>. The fact that most Russian women do successfully control their fertility is confirmed by the crude low birth rate (in 2006) of only 11 annual births per 1,000 population and a total fertility rate (in 2006) of only 1.3<sup>24</sup>.

The differences in accessing abortion between HIV-positive and HIV-negative women were highlighted in a 2007 study that showed that HIV-positive, pregnant women in St. Petersburg had one abortion for every 10 deliveries, whereas their HIV-negative, pregnant counterparts had one abortion for every 1.6 deliveries<sup>25</sup>.

Again, the comprehensive data collected by the program revealed the disturbing fact that half of all pregnancies to HIV-positive women were unintended. This is likely due to a combination of factors, including:

- Family planning counseling is offered by WCCs, especially during ANC, and many high-risk, HIV-positive women do not access ANC.  
.....
- Many family planning services formerly provided by the government have been discontinued.  
.....
- Drug use may interrupt menstrual cycles in IDUs, making early detection of pregnancies difficult. Accessing, complying with, and adhering to regular contraceptive methods may be challenging for IDUs. Nevertheless, efforts to reach them with family planning are critical, since 99% of IDUs are in reproductive ages.  
.....
- Access to legal termination of pregnancy requires proper legal documentation, which some high-risk women (especially migrant women) may not possess.  
.....
- Contraceptive counseling for HIV-positive women in women's health services in the Russian Federation is inadequate, which has also been noted by other studies<sup>26</sup>.  
.....

In seeking answers to the problem of unwanted pregnancies among HIV-positive women, the Foundation found that the quality and comprehensiveness of family planning advice and services offered in maternity hospitals was uneven. Women were often asked to seek postpartum family planning services at WCCs, but follow-up was poor, as discussed above.

The Foundation responded to this identified need by a) providing special training for antenatal clinic and maternity hospital personnel in family planning counseling and support, and b) collaborating with USAID's and CDC's new companion family planning study to assess safety, accessibility, and effectiveness of reliable, long-acting contraception among high-risk, HIV-positive women.

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<sup>e</sup> Several international organizations are currently assisting the Ministry of Health to improve the availability of modern contraceptive methods and reduce the incidence of termination of pregnancies.

## Ensuring Follow-Up of Socially Vulnerable Women

Poor patterns of health-seeking behavior affect socially vulnerable women throughout and after the pregnancy process. As mentioned above, these women often receive no, or inadequate, ANC. They often appear for admission to the maternity hospitals very late (often in active labor), making it difficult for site staff to provide timely rapid HIV testing and administer ARV prophylaxis prior to delivery. They often leave the maternity hospital early, against medical advice, making it less likely that they will receive a definitive HIV diagnosis. Finally, they often miss critical follow-up care.

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While provision of PMTCT services during the antenatal and intrapartum periods is critical, follow-up services after delivery are also essential to link HIV-positive mothers and their HIV-exposed infants to a range of essential services.

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While provision of PMTCT services during the antenatal and intrapartum periods is critical, follow-up services after delivery are also essential to link HIV-positive mothers and their HIV-exposed infants to a range of essential services. Women identified as HIV-positive at delivery in the program-assisted hospitals are encouraged to bring their infants and visit the CAC to receive a definitive confirmation of their HIV status. They are also eligible for health services and social assistance, including comprehensive post-test counseling, health evaluations, infant feeding education, in-depth family planning counseling, timely initiation of antiretroviral therapy (ART), and early HIV diagnosis of their infants.

However, program data revealed that during the first year of implementation, 40% of the HIV-positive women identified through the program did not, in fact, appear later at the CAC.

To respond to this failure of follow-up, in November 2005 the program created a home visit model in which a team composed of a social worker and/or psychologist, pediatrician, and nurse from the CAC visited HIV-positive women who did not appear for follow-up within one month after delivery. During the home visit, the team provided confirmatory test results, comprehensive post-test counseling, health evaluations by the pediatrician, infant feeding education, family planning counseling, and an appointment at the CAC. In addition, women received printed materials about local HIV services, transportation to the CAC, baby formula, and cotrimoxazole prophylaxis.

Of the 291 HIV-positive women who failed to obtain follow-up care one month after discharge from maternity wards from 2005 to 2007, complete contact information was available for 95. Although results may not be representative of an entire population, at least one home visit was conducted for 91 of these 95 women (96%). Among those visited at home, 78 (86%) of the women knew their HIV status, 13 (14%) reported using injection drugs, and 19 (21%) reported alcohol abuse. The reasons women gave for not seeking care after delivery included lack of understanding or inadequate information about available services (41%); maternal/infant illness (23%); financial challenges (12%); stigmatization or fear of loss of confidentiality (10%); drug and alcohol problems (8%); and document problems (3%)<sup>27</sup>.

### III. Lessons Learned for PMTCT in the Russian Federation (Continued)

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It is hoped that studies on the quality of rapid testing in Russia will influence a change in testing algorithm in ANC as well as in maternity hospitals.

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As a result of the home visits, by November 2007 75% (68/91) of women who were reached in their homes did subsequently return for follow-up appointments. Follow-up and testing of infants increased from 60% to 80%<sup>28</sup>.

While postpartum support is helpful, it was also recognized that counseling and information for HIV-positive mothers must be strengthened before discharge from maternities to ensure that women understand the importance of follow-up care and the services for which they are eligible. To this end, the program also collaborated with the NGO Doctors of the World, which provided psychosocial, financial, and medical support to program beneficiaries at some Foundation-supported sites before women were discharged.

### The Importance of Appropriate Laboratory Policies and Support

Two of the major contributions of this program were the provision of rapid HIV test kits for maternity hospitals and training of hospital staff in all aspects of HIV counseling and testing in maternity. As mentioned above, in the first 12 months of the program (April 2004–April 2005), this significantly increased the proportion of women appearing in labor eligible for testing<sup>f</sup> who actually received testing. Among those women tested after the program began, 90% received results before delivery, enabling 76% of women to receive intrapartum ARV prophylaxis for PMTCT<sup>29</sup>. The Chief Infectionist of St. Petersburg used these early program data to help the Foundation's Russian counterparts to convince the MOH to approve the rapid HIV test kit purchase from the government budget for maternity hospitals.

However, according to the official Russian HIV diagnostic algorithm, the rapid test only provides a preliminary HIV diagnosis, and requires confirmation by ELISA and Western Blot. ELISA and Western Blot are not performed in maternity hospitals, but only in the St. Petersburg Reference Laboratory in another part of the city. In contrast, WHO recommends confirming a positive rapid test result by performing another (type of) rapid test<sup>30</sup>.

This Russian requirement for ELISA and Western Blot confirmatory laboratory tests to confirm an HIV diagnosis was time consuming and resulted in over 90% of women leaving the maternity hospital without a final, definitive diagnosis<sup>31</sup>. The program learned that without a definitive diagnosis, the counseling provided in the maternity hospitals was incomplete. In addition, women with only a preliminary HIV diagnosis tended not to follow up, as recommended, with a postpartum visit to the CAC for confirmation. Without that confirmation, she and her infant were likely to have missed important opportunities to access HIV-related services.

As an interim measure to help accelerate the provision of confirmatory test results to women in maternity hospitals, program collaborators agreed to implement a new system for transmittal of standard confirmatory HIV test results from the CAC to maternity hospitals by facsimile within three days. This improved the situation somewhat by enabling results to arrive back at maternity hospitals after three days, but this was still inadequate for many IDUs who often left the hospital early.

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<sup>f</sup> This includes women who had no HIV test during pregnancy, or incomplete testing, meaning not having had the requisite test after 34 weeks of pregnancy.

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Newborn and nurse  
from the children's  
department at program-  
supported site MH16.

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Russian authorities lacked confidence in using rapid tests for confirmation, in part as a result of earlier experience that showed an unacceptable number of false positive results, and they were reluctant to change their algorithm. Program partners recognized the need to prove the sensitivity and specificity of rapid tests (for confirmatory purposes) in the Russian context in order to advocate for a change in the testing policy. To this end, CDC partners undertook a study to compare the performance of the conventional Russian diagnostic algorithm (which uses a rapid test, ELISA, and Western Blot) with that of a rapid testing algorithm that used a rapid test for screening, and allowed confirmation with two different rapid tests within minutes<sup>32</sup>.

The study found that while both the Russian algorithm and the proposed algorithm (relying on rapid tests alone) had excellent specificity, the sensitivity of the proposed algorithm was somewhat lower. Nevertheless, CDC concluded that the poor experience with receipt of confirmatory test results with the conventional Russian algorithm warranted a prospective assessment of both algorithms to compare receipt of test results and the net effect on linkage to care<sup>33</sup>.

At present, rapid HIV tests are not used for HIV screening at the ANC level. Russian authorities still require that blood be drawn at ANC clinics and sent to another laboratory where an ELISA test is performed (and a Western Blot test for confirmation if the ELISA is positive). As a result, there is an inevitable delay between the blood draw, diagnosis, and initiation of ARV prophylaxis, and some women are lost to follow-up before the test results are available. Adoption of a simpler, rapid-test-based algorithm for late presenters at ANC could also help with earlier initiation of ARV prophylaxis or treatment. It is hoped that the studies on the quality of rapid testing in Russia, described above, will influence a change in testing algorithm in ANC as well as in maternity hospitals.

III. Lessons Learned for PMTCT  
in the Russian Federation  
(Continued)

## Using Local Data and International Experience to Inform Policy

Russian health policy dictates that protocols, procedures, and other related guidance be based on Prikaz, which are policies or orders established by the MOH. These Prikaz govern health worker practice in most aspects of PMTCT, from testing algorithms (for pregnant women and their infants) to ARV prophylaxis and treatment regimens. Unfortunately, these Prikaz are not always based on international standards, scientific evidence, guidance, or research, nor on evidence assembled from local or national research. Guidelines established in the United States are sometimes viewed as the “gold standard” by Russian authorities, but they are often neither appropriate nor feasible in the Russian context. As mentioned earlier, neither U.S. nor European policies and guidelines, nor resource-limited countries’ policies and guidelines, are always relevant for the Russian Federation, which is unique in terms of its health care structure and its current HIV epidemic.

Several PMTCT-related Prikaz limit the ability to change service delivery in such a way that it can effectively lower MTCT rates or link women and infant pairs to treatment, care, and support.

Russian Prikaz are generally considered to be inflexible and difficult to change. In the health sector, there are often inconsistencies between local (in this case, St. Petersburg and Leningrad Oblast) and federal (Ministry of Health) Prikaz and related guidelines, causing confusion among health workers. The consequences for health providers of not strictly following Prikaz are regarded as serious, and few health providers will use their own professional judgment to override certain Prikaz in the interest of a patient or patients.

One of the lessons learned from this program is that an effective tool for influencing Russian health policy is the collection of data in the Russian Federation, by Russian researchers. In addition to collecting data to support a change in the HIV testing algorithms as described above, the program has also used local data to promote changes in policies governing ARV prophylaxis regimens.

One example of successful policy change related to ARV prophylaxis regimens concerned the infant ARV prophylaxis dose. It came to the attention of program staff that the MOH Prikaz for PMTCT (Prikaz #606) and St. Petersburg city policy mandated a regimen of three doses of NVP for the HIV-exposed infant (one dose per day following birth). There was no evidence that this three-dose regimen increased efficacy for PMTCT in comparison to the WHO-recommended one-dose regimen, and there were serious concerns about the three-dose regimen increasing NVP resistance. The Foundation and its partners presented their concerns with this three-dose regimen to local leaders and the program Steering Committee. In response, St. Petersburg and Leningrad Oblast changed the NVP regimen to one dose. In addition, seven days of zidovudine (AZT) for infants was added to the former NVP-only regimen to prevent emergence of resistance, in keeping with WHO guidelines. Federal authorities have expressed their intention to update their guidance on infant prophylaxis as well.

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One of the lessons learned from this program is that an effective tool for influencing Russian health policy is the collection of data in the Russian Federation, by Russian researchers.

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A second example of policy change was the program successfully advocating for a complex intrapartum ARV prophylaxis regimen that includes both NVP and AZT, consistent, again, with WHO guidelines.

The program, in collaboration with its Russian partners, has advocated for improvements in the Russian antenatal ARV prophylaxis regimen as well, based on United States Public Health Service (USPHS) PMTCT guidelines<sup>34</sup>, to ensure optimal impact on MTCT rates.

Finally, Russian Prikaz restrictions limited the ability of the ANC system to perform rapid HIV tests (as mentioned in section III. The Importance of Appropriate Laboratory Policies and Support) and to deliver early ARV prophylaxis or combination prophylaxis regimens. In an effort to promote a more informed ARV prophylaxis policy in Russia, CDC analyzed data on a) the type of maternal ARV prophylaxis that was administered to HIV-positive pregnant women, and b) the timing of initiation of prophylaxis. Both were compared to the MTCT rate achieved in the program-assisted facilities<sup>35</sup>.

CDC's analysis of program data from St. Petersburg collected between April 2004 and April 2006 showed that international findings concerning efficacy of prophylaxis were also relevant for Russian women, that is, that regimens administered earlier in pregnancy, and combination regimens, resulted in lower MTCT rates. Of 1,331 HIV-positive women, 824 (62%) had known infant HIV status, and 51 (6.2%) of these women transmitted HIV to their infants. Detailed findings were as follows<sup>36</sup>:

- Regarding type of ARV regimen, 11.3% received dual/triple three-component; 52.6%, zidovudine three-component; 15.5%, single-dose two-component (mother and infant); and 20.6%, one-component (mother or infant). Perinatal transmission occurred among 2.2%, 3.9%, 8.6%, and 12.4% of these women, respectively.  
.....
- Concerning timing, 50.5% received any ARVs at 28 weeks; 15.8% at 29 to 42 weeks; and 33.7% at labor and delivery. Of these women, perinatal transmission occurred among 2.9%, 7.7%, and 10.4%, respectively.  
.....

These data argued for measures to be taken to ensure that both a) HIV-positive women in the Russian Federation get ARV prophylaxis earlier in pregnancy, and b) women are offered combination regimens. At the time of this publication, the entire Russian Prikaz related to PMTCT was being adapted to follow USPHS<sup>37</sup> guidelines as appropriate, as a result of advocacy by the program's Russian counterparts.

## IV. Considerations for the Future

The program's experience in Russia supports WHO's expanded, four-pronged approach to PMTCT including primary prevention, prevention of unintended pregnancies, and provision of care and support.



## **Conclusions and Recommendations for Quality Sustained PMTCT and a Continuum of Care**

The program's experience in Russia supports the importance of WHO's expanded, four-pronged approach to PMTCT. In addition to specific PMTCT interventions during and after pregnancy, the WHO approach also includes primary prevention of HIV infection, prevention of unintended pregnancies among HIV-positive women, and provision of care and support for HIV-positive mothers and their infants, partners, and families.

Improving the quality of PMTCT will demand ongoing review of Russian PMTCT-related policies and more expeditious mechanisms for updating/revising policies as needed. Policies need to respond appropriately to the evolving epidemic in Russia, to international best practices, and to new research. The most critical policies are likely to continue to be those related to testing algorithms and ARV prophylaxis regimens.

It is likely that the special challenges encountered in serving IDUs will persist and continue to demand special approaches and new ways to deliver cost-effective, intensive social services geared to the needs of socially vulnerable and marginalized women.

There will continue to be a need for a seamless continuum of clinical and social services for HIV-positive women from pregnancy through the extended postpartum period.

The Foundation's program has tried, as far as possible, to ensure sustainability of the high-quality PMTCT services that have been established, after Foundation funding and technical assistance terminates. Measures include: establishing a local Steering Committee; providing support for existing staff at sites versus placement of program-specific personnel; incorporating curricula into existing training sessions for health care personnel; collaboration with local authorities to ensure a routine supply of test kits and ARVs; and transitioning sites through a phased approach. Sustainability will be needed in terms of financial contributions from the government, assurance of government-provided supplies and commodities, collection and analysis of program data, supervision of PMTCT staff, and ongoing assessment of changes that are needed in the PMTCT program. Given the program transition to government ownership was a relatively recent occurrence, additional time will be required to assess whether challenges are encountered in terms of sustained quality of service delivery, ongoing monitoring and evaluation, or potential stock outs of commodities.

IV. Considerations  
for the Future  
(Continued)

Success in PMTCT will be dependent upon putting into place optimal PMTCT services at antenatal, labor and delivery, and postpartum phases. There are still unmet needs for PMTCT in other parts of Russia outside St. Petersburg and Leningrad Oblast. While most maternity hospitals in Russia now offer access to HIV counseling and testing at labor and delivery, the quality is frequently not ideal. For example:

- HIV testing may be available only for limited hours of the day and/or performed only in the laboratory versus in the delivery ward;  
.....
- Some pregnant women are tested for HIV without their knowledge or consent, and quality of counseling is suboptimal;  
.....
- Some health care providers do not know what to do for women who do test HIV-positive in terms of infection control, ARV prophylaxis, etc.; and  
.....
- Subtle stigma against women who are HIV-positive may reduce physicians' motivation to offer them timely services.  
.....

When expanding PMTCT to other areas of Russia, local systems will need to be carefully assessed to identify improvements that are needed, and to create and monitor sustainable interventions. New interventions should be introduced gradually and systematically. Government engagement and commitment to PMTCT in other parts of Russia will be essential, as demonstrated by this program in St. Petersburg and Leningrad Oblast.

Finally, in the future, many of the HIV-positive infants born in Russia will be older, raising even more difficult issues of disclosure, safe sexual behavior, reproductive choice, etc. The needs of older HIV-positive children for social support and medical care will be significant and will require careful planning at the national level by relevant government authorities and NGOs.

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# Abbreviations

AIHA	American International Health Alliance
ANC	antenatal care
ARO	Assistance to Russian Orphans
ART	antiretroviral therapy
ARV	antiretroviral
AZT	azidothymidine/zidovudine
CAC	City AIDS Center
CDC	Centers for Disease Control and Prevention (U.S.)
CRDF	Civilian Research Defense Foundation
CTA	Call to Action
DOW	Doctors of the World
EGPAF	Elizabeth Glaser Pediatric AIDS Foundation
ELISA	Enzyme-Linked ImmunoSorbent Assay
IDU	injecting drug user
JSI	John Snow, Inc.
MH	maternity hospital
MOH	Ministry of Health
MTCT	mother-to-child transmission
NVP	nevirapine
PCR	polymerase chain reaction
PMTCT	prevention of mother-to-child transmission
STI	sexually transmitted infection
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
USPHS	United States Public Health Service
WCC	Women's Consultation Center
WHO	World Health Organization

## Our Mission

The Elizabeth Glaser Pediatric AIDS Foundation seeks to prevent pediatric HIV infection and to eradicate pediatric AIDS through research, advocacy, and prevention and treatment programs.

