Scaling Up Prevention of Mother-to-Child Transmission of HIV

WHAT WILL IT TAKE?

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Introduction

Prevention of mother-to-child transmission of HIV (PMTCT) is an essential tool in the fight against HIV. A comprehensive PMTCT approach includes four components: primary prevention of HIV among women of childbearing age; preventing unintended pregnancies among women living with HIV; preventing HIV transmission from women living with HIV to their infants; and providing appropriate treatment, care, and support to women living with HIV and their children and families. It is estimated that PMTCT, when done exceptionally well, can reduce the rate of transmission of HIV in pregnancy, at birth, and while breastfeeding, from 25–45 percent to less than 2 percent.\(^2\) Mother-to-child transmission accounted for over 90 percent of the estimated 370,000 new HIV infections among children in 2009. Better PMTCT programs have the promise of significantly reducing this number.\(^3\)

Although PMTCT has long been on the global health agenda, progress has been slow and uneven. Implementation is complex, and sustaining progress can be a challenge. Comprehensive PMTCT includes numerous interventions delivered over an extended period of time, and there are many

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\(^1\) Margaret Reeves is a fellow with the CSIS Global Health Policy Center. The author would like to thank the following individuals for generously sharing their perspectives and experiences to inform this brief: Charles Holmes, chief medical officer, Office of the U.S. Global AIDS Coordinator; Jimmy Kolker, head of HIV/AIDS, UNICEF; Corrine Mazzeo, technical officer, Elizabeth Glaser Pediatric AIDS Foundation; Jennifer L. Peterson, deputy director of external relations, Office of the U.S. Global AIDS Coordinator; B. Ryan Phelps, senior technical adviser for pediatric HIV treatment and PMTCT, U.S. Agency for International Development (USAID); and R.J. Simonds, vice president for program innovation and policy, Elizabeth Glaser Pediatric AIDS Foundation. The author would also like to thank CSIS colleagues J. Stephen Morrison and Katherine Bliss for their insights and edits. Although the input of these experts was vital, the opinions and recommendations set forth are solely those of the author, as are all errors.

\(^2\) If an HIV-positive woman does not receive any preventative interventions to limit the risk of transmission, her infant has a 25–40 percent risk of acquiring HIV in pregnancy, around the time of birth and through breastfeeding.

points in the process at which mother-infant pairs may drop out of the system and be lost to follow-up care. Measuring PMTCT success is also complicated. The most useful indicator of success is reduction in the rates of HIV transmission from mother to child. However, the most frequently available data convey PMTCT program coverage, which does not necessarily correlate with reduced transmissions.\(^4\) Furthermore, PMTCT programming is significantly influenced by HIV-related stigma and gender inequity, which can seriously limit access to services. Financially, major new and additional resources will not be forthcoming: the United States, the Global Fund, traditional donors, and partner governments all face tightened budgets.\(^5\)

Despite these challenges, PMTCT remains a smart investment. The United States has prioritized and should continue to prioritize reductions in mother-to-child transmission. For almost a decade, the United States has invested bilaterally and multilaterally in creating platforms and partnerships to provide HIV-positive women and their children access to the full continuum of PMTCT care. While the budget for the President’s Emergency Plan for AIDS Relief (PEPFAR) and the U.S. contribution to the Global Fund may be flat, U.S. global health investments are still very substantial, at an estimated $8.8 billion in FY2011. PMTCT programs contribute directly to achieving gains on Millennium Development Goals 4 (women), 5 (children), and 6 (infectious diseases).

The United States has an opportunity to make rapid progress on PMTCT in the 14 countries where PEPFAR is already partnering with governments to implement PMTCT Acceleration Plans. To facilitate progress more broadly, the United States should use its leadership role and influence in global health to encourage other donors, partner organizations, and institutions such as the Global Fund to do more to lower the incidence of mother-to-child transmission. Through its own programming and diplomatic partnerships, the United States can do better by addressing more aggressively stigma and gender inequity, integrating programs, and strategically targeting investments to address persistent obstacles.

Concentrated Engagement

In June 2011, the United States and UNAIDS brought the unfinished PMTCT agenda to the forefront at the UN High-Level Meeting on HIV, where they led more than 30 countries and 50 community groups, nongovernmental and international organizations in launching the Global Plan Towards Elimination of New Infections among Children by 2015 and Keeping Their Mothers Alive

\(^4\) “PMTCT coverage” refers to the percentage of HIV-positive women who have received at least some antiretrovirals to prevent mother-to-child transmission. Some countries with high PMTCT coverage rates maintain high vertical transmission rates.

(also known as the Global Plan to Eliminate Pediatric HIV). The plan aims to reduce pediatric infections by 90 percent and bring vertical transmission (mother-to-child) rates to below 5 percent at a global scale by 2015. Scaling up PMTCT and ultimately aiming for virtual elimination will bring tangible benefits well beyond the reduction of new infections in children. If successful, maternal-child health systems will be strengthened in ways that will directly improve the delivery of other health services to women and children and serve as a platform for other primary care services. The accompanying social and policy changes necessary to achieve the goals will also bring broader societal benefits. The United States will have new opportunities to influence progress as the cochair of the Global Steering Committee for this ambitious plan, while at the same time achieving accelerated gains by concentrating its efforts in the 14 countries where PEPFAR has already made significant PMTCT investments.

Much of the progress made in PMTCT over the last decade is due to large U.S. bilateral programs and significant U.S. contributions through multilateral partnerships including the Global Fund that have funded training, facilities, drug procurement systems, and other forms of health infrastructure strengthening. In total, PEPFAR has invested $956 million in PMTCT from FY2004–2009. Through these investments, PEPFAR directly supported antiretroviral prophylaxis for PMTCT for more than 600,000 HIV-positive pregnant women in FY2010, allowing more than 114,000 infants to be born HIV free. These are in addition to the almost 340,000 pediatric HIV cases that have been averted through PEPFAR-supported programs since 2004.

PEPFAR’s five-year strategy (2009–2014) calls for achieving 85 percent PMTCT coverage by 2014 in focal countries. To that end, PEPFAR solicited “PMTCT Acceleration Plans” in 2010 from six high-burden countries: Malawi, Mozambique, Nigeria, South Africa, Tanzania, and Zambia. In addition to the $200 million already committed to PMTCT for FY2010, PEPFAR added another $100 million to the 2010 funding to address bottlenecks to PMTCT scale-up in these countries. A second additional $100 million was introduced in FY2011. Supplemental funds were used to scale

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6 This plan covers all low- and middle-income countries, but focuses on 22 countries with the highest estimate of HIV-positive pregnant women: Angola, Botswana, Burundi, Cameroon, Chad, Côte d’Ivoire, Democratic Republic of the Congo, Ethiopia, Ghana, India, Kenya, Lesotho, Malawi, Mozambique, Namibia, Nigeria, South Africa, Uganda, United Republic of Tanzania, Swaziland, Zambia, and Zimbabwe.

7 The Global Plan to Eliminate Pediatric HIV defines virtual elimination as achieving transmission rates below 5 percent.


11 PEPFAR, “PEPFAR: Addressing Gender and HIV/AIDS (March 2011).”
up core PMTCT interventions; support activities to estimate the true costs of implementing PMTCT strategies; strengthen monitoring and evaluation practices; improve data quality; promote collaboration, communication, and outreach; accelerate integration (especially with maternal, neonatal, and child health [MNCH], family planning [FP], and other HIV programs); and conduct operations research. PEPFAR also provided assistance to countries in implementing the latest World Health Organization (WHO) guidelines on use of antiretroviral drugs for treating pregnant women and PMTCT (2010) and guidance on HIV and infant feeding released in 2009.

Based on progress in the first six countries, eight additional Acceleration Plans in Burundi, Cameroon, Democratic Republic of the Congo, Ethiopia, Lesotho, Swaziland, Uganda, and Zimbabwe will begin implementation in 2012. An additional $75 million will be allocated in 2012 to support these eight countries. Between the additional $100 million in funding for 13 of the 14 Acceleration Plan countries and PEPFAR’s general PMTCT activities, PEPFAR funding for PMTCT will increase to a total of $375 million in 2012. In each country, PEPFAR has worked with the government and UN partners to develop an accelerated strategy, individualized PMTCT targets, and monitoring matrices through which to measure progress.

This additional support comes at a critical point when governments are struggling to implement the new WHO guidelines and shift to more efficacious drug regimens for HIV-positive mothers and their infants. Previously, many countries were providing single-dose Neveripine (NVP) for PMTCT, a regimen that can reduce the rate of transmission to 8–12 percent, but also puts patients at risk for NVP resistance. The new standard to which countries are shifting is a combined regimen of NVP and Zidovudine (AZT), which can reduce transmissions to 5 percent or less if administered rigorously as part of a comprehensive PMTCT program. Moving to this more efficacious dual therapy can facilitate dramatic results, but it is more complicated to administer and places additional demands on already stretched health care providers and logistics systems. PEPFAR has an important role to play in providing technical support as countries introduce dual therapy at a national level.

Realistically, many of the 14 countries that are the priority in U.S. PMTCT efforts will not achieve 85 percent coverage by 2014, but PEPFAR’s concentrated efforts can help move some countries closer to 85 percent, accelerate progress overall, and generate new insights of broader value for future future PMTCT efforts.

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12 According to the PEPFAR PMTCT/Pediatric HIV Technical Work Group Workplan (2009), core PMTCT interventions include: Provider initiated testing and counseling, male partner involvement, CD4 testing, treatment for all eligible women, more efficacious regimen for nontreatment eligible women (dual therapy), infant feeding counseling and support, early infant diagnosis, linkages to care and treatment for women and exposed/infected infants, Cotrimoxazole for exposed infants, integration with family planning (FP)/reproductive health (RH) and maternal, neonatal, and child health (MNCH).

13 South Africa benefitted from the additional $100-million investment for the first two years of the Acceleration Plan process but will not receive any of the additional $100 million in year three.
future PMTCT efforts. The 14 countries are at very different points in the quality and scope of their PMTCT programs, and they provide important laboratories for understanding how to sustain PMTCT gains, best expand coverage, and relate coverage gains to reductions in transmission rates. Among the 14 countries, South Africa and Swaziland have already achieved over 85 percent coverage. (See table 1.) Limited, ongoing U.S. technical support to these countries can sustain progress there. Countries such as Mozambique, Tanzania, and Zambia have relatively high coverage rates, but because of weaknesses in PMTCT implementation, these countries are still experiencing significant mother-to-child transmission rates. The key to increasing coverage in these countries will be targeting U.S. investments and technical support to improve the quality and consistency of implementation.

Facilitating progress in several other key countries will present more complex challenges. Malawi and Ethiopia have made some advances in PMTCT, but progress is stalled by larger sociological and systematic issues. In Ethiopia for example, PMTCT programs are functioning and services are available in many health centers, but attendance at antenatal care (ANC) is exceptionally low (only 12 percent attend at least four ANC sessions14) and facility-based delivery is the exception (9.9 percent 15). Consequently, PMTCT interventions reach very few women. In countries like these, the United States should closely align its support with government efforts to increase community demand for services and address the stigma and discrimination, as well as gender-based inequities, that limit access to services.

The biggest challenges will come in countries like Nigeria and the Democratic Republic of the Congo, where progress is severely limited by political instability and extremely low-functioning health systems. Significant quick increases in coverage by 2014 here are not realistic, but modest

<table>
<thead>
<tr>
<th>Country</th>
<th>Estimated % of women living with HIV who received antiretrovirals for PMTCT (low-high estimate)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Burundi</td>
<td>12% (9% – 22%)</td>
</tr>
<tr>
<td>Cameroon</td>
<td>27% (18% – 50%)</td>
</tr>
<tr>
<td>Democratic Republic of Congo</td>
<td>-- (4% – 11%)</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>-- (13% – 40%)</td>
</tr>
<tr>
<td>Lesotho</td>
<td>64% (48% – &gt;95%)</td>
</tr>
<tr>
<td>Malawi</td>
<td>58% (40% – &gt;95%)</td>
</tr>
<tr>
<td>Mozambique</td>
<td>70% (51% – &gt;95%)</td>
</tr>
<tr>
<td>Nigeria</td>
<td>22% (15% – 42%)</td>
</tr>
<tr>
<td>South Africa</td>
<td>88% (66% – &gt;95%)</td>
</tr>
<tr>
<td>Swaziland</td>
<td>88% (68% – &gt;95%)</td>
</tr>
<tr>
<td>Tanzania</td>
<td>70% (48% – 95%)</td>
</tr>
<tr>
<td>Uganda</td>
<td>53% (37% – &gt;95%)</td>
</tr>
<tr>
<td>Zambia</td>
<td>69% (50% – &gt;95%)</td>
</tr>
<tr>
<td>Zimbabwe</td>
<td>56% (41% – &gt;95%)</td>
</tr>
</tbody>
</table>

Table 1: Coverage in PEPFAR PMTCT Acceleration Plan


early gains can still be achieved through the Acceleration Plan’s costing, target setting, and joint planning exercises.

The United States is best advised to concentrate its efforts in those focal countries where it has made a substantial commitment over the last several years. More broadly, PMTCT outcomes can be improved in a larger range of countries with U.S. investments if the United States and others use their influence to elevate PMTCT as a priority and address the most complex challenges. There are a few specific priority actions that the United States should advance. It can mobilize resources from new and existing global health partners; practice smart diplomacy to spur greater partner country commitments; and strategically target its own resources on the most persistent hurdles to PMTCT.

**Resource Mobilization**

In the current constrained budget environment in Washington, U.S. development programs will have to do more with less and better leverage investments made by partner governments and other donors as much as possible.

In the coming months, the United States will have a few choice opportunities to make the case to other donors and governments that in tough economic times PMTCT is a smart target for limited development dollars. PMTCT can significantly reduce maternal and child morbidity and mortality, move countries closer to Millennium Development Goals 4, 5, and 6 and bring substantial long-term cost savings due to averted HIV infections and fewer orphaned children. There is the December 2011 High Level Forum on Aid Effectiveness in South Korea, the May 2012 G8 meeting hosted by the United States in Chicago, and the AIDS2012 conference in Washington, D.C., in July 2012. At the U.S.-hosted events, the United States will have the stage to make the case for global burden sharing and press governments to increase or realign global health investments to support PMTCT. Although the Global Fund has had its share of controversy lately, it is actively looking to address management problems and remains an important multilateral mechanism to combat HIV. The United States can encourage old and new donors to finance this mechanism to advance progress next summer at the 2012 Global Fund midterm replenishment meeting.

Reducing the cost of HIV treatment and making regimens safer and more effective will help limited development dollars go further. The United States can work with private-sector pharmaceutical companies to further reduce drug costs, develop lower toxicity drugs, and push for stepped-up development and testing on pediatric and adolescent formulations. Additionally, the United States can bolster partner governments’ leverage to negotiate with pharmaceutical companies. In 2010, the United States supported South Africa’s mass testing campaign by making a one-time $120-million bulk purchase of antiretroviral drugs (ARVs), predicated on the condition that South Africa renegotiate its drug tender in favor of generic pricing. This U.S. policy decision helped South Africa realize a 50 percent decrease in the cost of ARVs, greatly increasing the South African government’s ability to support its own treatment response.
Diplomacy

PEPFAR Partnership Frameworks and accompanying implementation strategies developed under the Global Health Initiative (GHI) can potentially be very useful diplomatic tools, if backed by sustained U.S. political will. At present, 21 countries have signed Partnership Frameworks— including 10 of the 14 countries implementing PMTCT Acceleration Plans. Forty-three countries have completed or are in the process of developing GHI strategies. In countries where commitment to PMTCT is lagging, PEPFAR Partnership Frameworks and GHI strategies can be crafted in ways that seek to increase partner governments’ accountability for supporting MNCH and define in concrete terms how the United States can reciprocally support these changes in alignment with partner countries’ priorities and principles. This entails working assiduously with recipient government ministries of health and finance on strategies to increase domestic contributions to health financing and including concrete timelines and targets in Partnership Frameworks and GHI strategies.

PMTCT coverage remains low in many countries due to social inequities and conflicting policies. The United States can use PEPFAR Partnership Frameworks to negotiate country-level policy changes to address stigma and discrimination, early marriage, violence, and gender inequality. Partnership Frameworks can also catalyze policies such as task shifting, which can increase access to health care by allowing lower-level health care providers to deliver services and medications previously available only from doctors and professional nurses.

Strategic Programming

The United States should target in its programs the key hurdles impeding reductions in mother-to-child transmission and maternal mortality: identifying HIV-positive women early and getting them into PMTCT programs; ensuring that infants receive prophylaxis and are tested and put on treatment within the first weeks of life; clearly communicating and implementing the new WHO guidelines on HIV and infant feeding to reduce transmission through breastfeeding; and meeting unmet needs for family planning. There are six specific approaches outlined below that can address these persistent challenges.

1. **Fully fund integration.** The provision of integrated MNCH, HIV, and FP services is included in some U.S.-funded health programs but remains absent in others. Often the additional investments necessary to operationalize integration at the system level are not included in

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16 Partnership Frameworks provide a five-year joint strategic framework for cooperation between the U.S. government and the partner government to combat HIV/AIDS in the host country through service delivery, policy reform, and coordinated financial commitments. The Global Health Initiative (GHI) seeks to achieve significant broader health improvements and foster sustainable effective, efficient, and country-led public health programs that deliver essential health care. Both the Frameworks and the strategies developed under the GHI are meant to increase accountability and country ownership of health programming.
project budgets and plans. Smart investments for integration will prioritize human resources. As more people are put on treatment and more mothers and children access a full continuum of care, demands on trained medical personnel and community health workers will continue to increase. The United States should work with countries to meet current gaps in human resources but also look strategically to the future to estimate future demands and ways to fulfill them domestically.

2. **Revisit U.S. policy prohibiting the use of PEPFAR funds to procure contraceptives.** Though the use of U.S. funds to support family planning continues to be a politically sensitive U.S. policy issue, revising U.S. regulations to allow for the procurement of contraceptives to meet the needs of HIV-positive women receiving care through PEPFAR-funded health programs will strengthen PEPFAR’s PMTCT response and enhance operational and cost efficiencies. Currently PEPFAR-funded projects can finance the distribution and promotion of contraceptives but require funding from other donors to procure commodities. The coordination necessary at the project and country levels to blend funding is inefficient and can lead to gaps in coverage. There is significant evidence of epidemiological and cost-savings impacts associated with meeting the unmet need for family planning services among HIV-positive women.17

3. **Move services closer to the community.** A successful PMTCT program requires that women are able to access health care regularly over an extended period of time. To make this feasible, all U.S. PMTCT investments should be programmed with an eye to moving services and technologies closer to the communities that need them. Investment in new technologies that bring testing and lab services to lower-level facilities can minimize waiting time for diagnostics, reducing the number of women who drop out of the system before receiving their results. Investing in programs that mobilize support systems at the household and community levels can increase demand for quality services, bolster PMTCT success rates by helping mothers adhere to extended PMTCT regimens and safe feeding practices, and facilitate follow-up with their newborns.

To further increase access to all services included in PMTCT, U.S. programs should promote task shifting to allow lower-level health workers to provide a broader range of services,

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commodities, and drugs at the community level. In some places policy reform will be necessary to allow nurses to initiate antiretroviral therapy (ART) and provide a full range of contraceptive commodities and procedures.

4. **Address financial barriers.** U.S. programming should more aggressively promote innovative financing mechanisms such as social insurance, vouchers, user fees, and performance-based financing that encourage women to access services and incentivize health care providers to deliver high-quality services.¹⁸ Performance-based incentives have successfully increased women’s use of antenatal care and FP services, deliveries at facilities, and referrals by traditional birth attendants of women to facilities; all of which can reduce mother-to-child transmission.¹⁹ The United States should work with governments to find ways to integrate these kinds of schemes into national health systems and budgets to make them sustainable.

5. **Insist on accountability from global PMTCT efforts.** The United States is a member of several global efforts committed to advancing PMTCT and should use its leadership roles to hold partners accountable. The Interagency Task Team on Prevention of HIV Transmission in Pregnant Women, Mothers and their Children (IATT) combines the skills and expertise of UN agencies, U.S. government agencies, foundations, and other active organizations to provide ongoing technical support to national scale-up and elimination efforts.²⁰ The IATT work in documenting bottlenecks, outcomes, and impacts will be essential to making progress, and the United States should work to ensure that the IATT completes this important work. The Global Plan to Eliminate Pediatric HIV’s goal of virtual elimination by 2015 is in many ways aspirational, but as a cochair of the effort’s Global Steering Committee the United States is in a position to support progress in many countries by fully supporting the plan and working to strengthen its accountability structure.

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²⁰ The IATT includes WHO; UNICEF; UNFPA; UNAIDS; World Bank; CDC; U.S. Agency for International Development (USAID); Global Fund to Fight AIDS, Tuberculosis and Malaria; and nongovernmental organizations such as the Elizabeth Glaser Pediatric AIDS Foundation (EGPAF), the International Center for AIDS Care and Treatment Programs at Columbia University’s Mailman School of Public Health, Family Health International (FHI), the Clinton Foundation HIV/AIDS Initiative (CHAI), Catholic Medical Mission Board (CMMB), Population Council, the International Center for Reproductive Health (ICRH), International Planned Parenthood Federation (IPPF), International Community of Women Living with HIV/AIDS (ICW), Baylor International Pediatric AIDS Foundation (BIPAI), and Ensemble pour une Solidarité Thérapeutique Hospitalière en Réseau (ESTHER).
6. **Implement more effective PMTCT regimens.** The publication of revised WHO guidance on use of antiretroviral drugs for treating pregnant women and preventing HIV infections in infants has renewed discussions among country governments about what is best and what is financially feasible.21 Decisions made by recipient governments about treatment options have enormous impact on how far U.S. dollars can go and how much governments can provide domestically. The United States is already facilitating regional dialogues on treatment options, but U.S. agencies should also actively engage at the country level to provide technical assistance to governments making decisions on regimens and devising plans to sustainably fund treatment. Acting as a leader in these discussions will be increasingly more important as debates on treatment as prevention evolve.

**Conclusion**

U.S. bilateral and multilateral investments in PMTCT have achieved considerable progress in increasing the number of infants born HIV free and improving the health of HIV-positive mothers so they are better able to care for their families and communities. To maintain gains in PMTCT and continue progress in a period of fiscal austerity, the United States is advised to concentrate its efforts in countries where it is implementing PMTCT Acceleration Plans, leverage a broadened base of financial and political support for PMTCT, and actively use its diplomatic influence and the programmatic tools at its disposal. By taking this approach, the United States can achieve dramatic results in some countries in the short term and support more modest but important progress toward the Global Plan’s goals in others.

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