## 2015 PROGRESS REPORT ON THE GLOBAL PLAN

towards the elimination of new HIV infections among children and keeping their mothers alive

## 170 000

THE NUMBER OF NEW INFECTIONS AMONG CHILDREN IN 2014

# 8 OUT OF 10

PREGNANT WOMEN LIVING WITH HIV RECEIVED ANTIRETROVIRAL MEDICINES TO PREVENT MOTHER-TO-CHILD TRANSMISSION OF HIV

# 48%

DECREASE IN THE NUMBER OF NEW HIV INFECTIONS AMONG CHILDREN, 2009–2014



MOTHER-TO-CHILD HIV TRANSMISSION RATE, INCLUDING DURING BREASTFEEDING

2015 Progress report on the Global Plan UNAIDS / JC 2774/1/E

Copyright © 2015 Joint United Nations Programme on HIV/AIDS (UNAIDS) All rights reserved.

The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of UNAIDS concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. UNAIDS does not warrant that the information published in this publication is complete and correct and shall not be liable for any damages incurred as a result of its use.

## 2015 PROGRESS REPORT ON THE GLOBAL PLAN

towards the elimination of new HIV infections among children and keeping their mothers alive

#### CONTENTS

Foreword	7
Executive summary	8
Background	11
Targets for the Global Plan	12
Progress to date	12
Conclusions	25
A note on measurement	28
Definitions of key terms	32
Country fact sheets	34
Summary tables	78
Abbreviations	85
References	86

#### FOREWORD

More families everywhere are experiencing the great joy of bringing a healthy baby into the world. The countries of the *Global Plan towards the elimination of new HIV infections among children and keeping their mothers alive* (Global Plan) have made remarkable progress since it was launched. In 2014, fewer children were newly infected with HIV than ever before, and across the 21 Global Plan priority countries in sub-Saharan Africa,<sup>1</sup> the number of new HIV infections among children each year has been cut by nearly half since 2009.

However, the work is far from finished. We are still far short of the Global Plan's goal of a 90% reduction in new HIV infections among children by the end of 2015, and only 31% of children living with HIV are currently accessing antiretroviral therapy. Rates of new HIV infections among adolescent girls and young women also are still unacceptably high, particularly in eastern and southern Africa.

Since the launch in 2011 of the Global Plan by the United States President's Emergency Plan for AIDS Relief (PEPFAR), UNAIDS and partners, hundreds of thousands of children born to women living with HIV have been born HIV-free. Each child that is born HIV-free and remains HIV-free has a better chance to survive and thrive—benefitting not only the individual child, but also families and communities. Seven priority countries—Ethiopia, Mozambique, Namibia, South Africa, Swaziland, Uganda and the United Republic of Tanzania—have achieved a reduction in new HIV infections among children of 60% or more since 2009, the baseline year for the Global Plan. Elsewhere, there have been important gains, but the rate of progress has been slower. Seven priority countries—Angola, Cameroon, Chad, Côte d'Ivoire, the Democratic Republic of the Congo, Kenya and Nigeria—have reduced new infections among children by only 30% or less since 2009.

With 77% of pregnant women living with HIV accessing antiretroviral medicine in 2014— compared with 37% in 2009—the mother-to-child transmission rate across the 21 Global Plan priority countries has been cut in half, from 28% to 14%.

The gains we have made together give us hope and enthusiasm as we move toward the day when no baby or child acquires HIV, when every adolescent girl and young woman can reach adulthood HIV-free, and when all children living with HIV have access to lifesaving treatment. We must redouble our resolve and our efforts. We can get there, but it will take all of us to make it happen.

Michel Sidibé UNAIDS Executive Director

#### Ambassador Deborah L. Birx

United States Global AIDS Coordinator and Special Representative for Global Health Diplomacy Office of the Global AIDS Coordinator and Health Diplomacy United States Department of State

<sup>1</sup> Angola, Botswana, Burundi, Cameroon, Chad, Côte d'Ivoire, the Democratic Republic of the Congo, Ethiopia, Ghana, Kenya, Lesotho, Malawi, Mozambique, Namibia, Nigeria, South Africa, Uganda, the United Republic of Tanzania, Swaziland, Zambia and Zimbabwe.

#### **EXECUTIVE SUMMARY**

The Global Plan towards the elimination of new HIV infections among children by 2015 and keeping their mothers alive (Global Plan) has been operational at country level for the past four years. It prioritizes the 22 countries that, in 2009, accounted for 90% of the global number of pregnant women living with HIV who were in need of services to prevent mother-to-child transmission. This report presents country performance in 2014 and is based on country-developed models using Spectrum software (see "A note on measurement" at the end of the document). At the time of preparation, India's data were not available, so the report covers 21 countries.

One of the main goals of the Global Plan is to reduce new HIV infections among children by 90% from the baseline in 2009 (the benchmark year against which progress is measured). At the end of 2014, Global Plan countries had reduced new infections among children by 48% (compared to a reduction of only 13% between 2000 and 2008), indicating that the years since the launch of the Global Plan have seen the rate of decline almost quadruple. At 58 000, Nigeria has the largest number of newly infected children, a number equivalent to the next six countries combined. Without Nigeria, the remaining 20 countries have reduced new HIV infections among children by 56%.

South Africa has made the greatest progress reducing new infections by 76%; this was followed by the United Republic of Tanzania (72%), Uganda and Mozambique (69% each), Ethiopia (65%), Namibia (64%) and Swaziland (63%). Half of the countries achieved a reduction of 50% or more. In fact, several countries—including Botswana, Burundi, Namibia and Swaziland—had fewer than 1000 new infections in 2014, almost approaching the World Health Organization (WHO) criteria for the elimination of mother-to-child transmission as a public health problem. A number of countries, however, have not made as much progress, including Angola, Cameroon, Chad, Côte d'Ivoire, the Democratic Republic of the Congo, Kenya and Nigeria. These countries have registered less than a 30% reduction in new HIV infections among children, below the 48% average across the 21 priority countries.

Among the 21 countries, 1.2 million paediatric infections have been averted since 1996 through the provision of antiretroviral medicines to pregnant women living with HIV; of those, 89% were prevented between 2009 and 2014. If antiretroviral medicines had not been provided to these women, South Africa would have had 370 000 additional children infected with HIV during that period; Uganda and Mozambique would have had 110 000 and 90 000, respectively. These estimates only include infections averted due to the provision of antiretroviral medicine to pregnant women living with HIV; they do not reflect infections averted due to primary HIV prevention (Prong 1) and preventing unintended pregnancies (Prong 2).

Fewer HIV infections among children has also meant fewer AIDS-related child deaths. Since 2000, AIDS-related mortality among children under the age of five has fallen by approximately 60% globally, driven partly by reductions of 60% (or more) in 15 of the 21 priority countries in sub-Saharan Africa during the same period.

In 2014, the 21 countries provided antiretroviral medicines to 77% [71–82%] of pregnant women living with HIV, up from 72% [67–78%] in 2013 and 37% [34–40%] in 2009. Seven countries achieved the goal of providing antiretroviral medicines to at least 90% of pregnant women living with HIV: Botswana, Mozambique, Namibia, South Africa, Swaziland, Uganda and the United Republic of Tanzania.

Another key goal of the Global Plan is to reduce the final mother-to-child transmission rate to 5% or less among breastfeeding populations, and to 2% or less among non-breastfeeding populations. The 21 Global Plan priority countries covered in this report have reduced this rate from 28% [25-30%] in 2009 to 14% [12-16%] in 2014. South Africa, where the majority of women do breastfeed, has achieved the Global Plan milestone, with a final transmission rate of 4% [3-4%]. Botswana, which has a non-breastfeeding population, is also nearing this goal, with a final motherto-child transmission rate of 4% [3–5%], close to the Global Plan target of 2% for non-breastfeeding populations. Several other countries where breastfeeding is common also are close to reaching the goal, including Namibia (7% [3-11%]), Uganda (8% [2-13%]), Swaziland (8% [8-9%]), the United Republic of Tanzania (9% [6-11%]) and Mozambique (9% [4-13%]).

Countries provided antiretroviral medicines to an additional 55 000 pregnant women living with HIV in 2014. They also rapidly rolled out the policy of universal antiretroviral treatment to all pregnant and breastfeeding women (also known as Option B+) soon after the release of WHO's 2013 Consolidated guidelines on the use of antiretroviral drugs for treating and preventing HIV infection (2). As of June 2015, only three of the 21 Global Plan priority countries had yet to make this transition: Côte d'Ivoire, Ghana and Nigeria. Combined, 66% [61-71%] of all pregnant women living with HIV in the 21 priority countries were receiving lifelong antiretroviral therapy, up from 46% [42-50%] in 2013. Estimates of AIDS-related maternal mortality will be provided by the United Nations later this year, but during the last five years, there has been a 45% decline

in the number of AIDS-related deaths among women of reproductive age in the 21 priority countries, largely due to greater access to treatment.

The data suggest that adherence and loss to follow-up, particularly during breastfeeding, continue to leave infants vulnerable to acquiring HIV: in 2014, the rate of motherto-child transmission at six weeks was 5% among the 21 countries, but this rose to 14% at the end of breastfeeding. In these countries, therefore, reduced adherence and retention during the breastfeeding period results in twice as many new paediatric HIV infections as during pregnancy, labour and delivery. This indicates a need for more concerted and systematic efforts to maintain women in care, and to enable good adherence to HIV treatment until the risk of HIV transmission to the baby fully ends. Many country programmes have emphasized providing antiretroviral medicines during pregnancy and delivery, but they have not placed as much effort on the postnatal period.

At the same time, countries need to accelerate efforts to reduce new infections among women. Between 2009 and 2014, there were a total of 3.8 million newly infected women of reproductive age. The risk of mother-to-child transmission of HIV is much higher among newly infected women who are not yet diagnosed and on treatment. It is thus important to identify new HIV infections among women-which may occur at different points of pregnancy and breastfeeding-as well as to identify women with partners living with HIV so they can be offered treatment to reduce transmission risk. Policies around repeat HIV testing through this period of risk have been taken up by some countries, but they are still in their infancy.

There was progress in paediatric HIV diagnosis in 2014. Of an estimated 1.2

million [1.1-1.3 million] HIV-exposed infants among the 21 priority countries, 49% received a virologic test to determine their HIV status within the first two months of life as recommended by WHO (compared to 40% in 2013). There was less progress in increasing access to antiretroviral therapyof the 2.1 million [2.0–2.3 million] children under 15 years of age living with HIV, only 31% [29-33%] received antiretroviral therapy, compared to 27% [25-29%] in 2013 and 10% [9-11%] in 2009. Children living with HIV were about half as likely as pregnant women to receive treatment (31% compared to 66%). These dramatic disparities must be addressed urgently, since half of the children living with HIV will die before their second birthday if they do not receive treatment. Many countries have rapidly rolled out treatment for women in the form of the Option B+ regimen;

this also should provide an opportunity to incorporate the roll-out of paediatric treatment, enabling sites that provide treatment for mothers—or other adults—to provide treatment for children.

While the 2014 *Progress report* presents encouraging results, achieving the goals of the Global Plan requires even greater intensification of all of the multifaceted efforts across the spectrum of interventions to prevent new infections among children and keep their mothers alive. This includes primary prevention of HIV infection in women, prevention of unintended pregnancies, universal antenatal attendance and HIV testing, and universal treatment for pregnant women, mothers and children living with HIV. With commitment, focus and scale-up, the next few years will yield even better results.

#### BACKGROUND

The Global Plan towards the elimination of new HIV infections among children by 2015 and keeping their mothers alive (Global Plan) (1) was launched in July 2011 at the United Nations General Assembly High-Level Meeting on AIDS in New York. It prioritizes 22 countries with the highest number of pregnant women living with HIV who are in need of services, specifically Angola, Botswana, Burundi, Cameroon, Chad, Côte d'Ivoire, the Democratic Republic of the Congo, Ethiopia, Ghana, India,<sup>2</sup> Kenya, Lesotho, Malawi, Mozambique, Namibia, Nigeria, South Africa, Swaziland, Uganda, the United Republic of Tanzania, Zambia and Zimbabwe. Together, these countries accounted for 90% of the total number of pregnant women living with HIV that needed services to prevent mother-to-child transmission of HIV in 2009.

This is the fourth annual report of the Global Plan, and it summarizes the progress made through December 2014. The final accountability report of the Global Plan will be issued in 2016 when data for the end of 2015 will be available. The Global Plan was developed during 2010 by a Global Task Team (GTT) co-chaired by UNAIDS and the Government of the United States. The GTT consisted of a consortium of stakeholders from 25 countries and 30 civil society groups, private sector partners, networks of people living with HIV and international organizations. The Global Plan was launched as a major new global initiative in 2011, but it uses 2009 as the baseline year against which to measure progress.

The Global Plan has two over-arching goals:

- Global goal 1: Reduce the number of new HIV infections among children by 90%.
- Global goal 2: Reduce the number of AIDS-related maternal deaths by 50%.

While the Global Plan prioritizes the 22 countries listed above, it encompasses all low- and middle-income countries, which have also seen intensified scale up of services to eliminate new HIV infections among children and keep their mothers alive, both in low prevalence regions and concentrated epidemic areas. One key development occurred in June 2015, when Cuba became the first country to be validated as having met the global criteria for eliminating vertical transmission of HIV and congenital syphilis as a public health problem (6). This process-implemented under the leadership of WHO, in partnership with the United Nations Children's Fund (UNICEF), the United Nations Population Fund (UNFPA) and UNAIDS-was developed in response to country requests to receive globally-recognized validation similar to that applied to other diseases. It included the development of a standardized protocol, selection criteria and a governance mechanism. Several countries worldwide are also now preparing for validation. According to UNAIDS, at least 85 countries globally have virtually eliminated mother-to-child transmission of HIV or are close to this goal (meaning they had fewer than 50 new HIV infections among children in 2014).

<sup>2</sup> At the preparation of this report, data for India were not available. As a result, the report covers 21 countries instead of 22.

### TARGETS FOR THE GLOBAL PLAN

The Global Plan is monitored through the following targets:

- 1. Reduce new HIV infections among women of reproductive age by 50%.
- 2. Ensure zero unmet need for family planning.
- 3. Reduce final mother-to-child transmission rate to 5% or less among breastfeeding populations, and 2% or less among non-breastfeeding populations.
- 4. Increase maternal antiretroviral medicines coverage (prophylaxis and antiretroviral therapy) to 90% during pregnancy and delivery.
- 5. Increase breastfeeding antiretroviral medicines coverage (prophylaxis and antiretroviral therapy) to 90%.
- 6. Achieve antiretroviral therapy coverage of 90% among HIV-positive pregnant women.
- 7. Reduce HIV-related mortality among children under five years of age by 50%.
- 8. Ensure all children under 15 years of age living with HIV receive antiretroviral therapy.

- 9. Reduce new HIV infections among children by 90%.
- 10. Reduce the number of AIDS-related maternal deaths by half.

Several other indicators are tracked, including coverage of infant diagnosis, infant co-trimoxazole prophylaxis and the number of paediatric infections averted. These indicators also are included in this report.

#### **PROGRESS TO DATE**

#### FEWER CHILDREN ARE ACQUIRING HIV

Since 2009, there has been a 48% decline in new HIV infections among children in the 21 Global Plan priority countries, a reduction from 330 000 [300 000–370 000] in 2009 to 170 000 [150 000–200 000] in 2014 (see Figure 1). The number of new HIV infections among children declined by 13% between 2000 and 2008, and by 48% between 2009 and 2014. This means that the years since the launch of the Global Plan have seen the pace of the decline in new infections quadruple.

#### Figure 1

Number of new HIV infections among children in 21 Global Plan priority countries, 2000–2014







The overall impact of programmes to prevent mother-to-child transmission is increasing over time. Among the 1.2 million HIV infections among children that have been prevented in the 21 priority countries since 1996 by the provision of antiretroviral medicines to prevent motherto-child transmission, 1.1 million (89%) were prevented between 2009 and 2014. This reflects 370 000 infections averted in South Africa, 110 000 infections averted in Uganda and 90 000 infections averted in Mozambique since 2009 (see Figure 2).

This continued and steady decline in the incidence of HIV among children is encouraging, but the pace means that it is unlikely that the Global Plan target of a 90% reduction by 2015 will be met. Some countries may come close. South Africa estimated a decline of 76% since 2009, the highest among the 21 priority countries, and the decline was 60% or more in six other countries: Ethiopia, Mozambique, Namibia, Swaziland, Uganda and the United Republic of Tanzania. (see Figure 3 and Table 1). A number of countries have also registered reductions of over 40%, including Botswana, Burundi, Ghana, Lesotho, Malawi and Zimbabwe. The case of Botswana deserves special mention—the country already had high rates of antiretroviral coverage to prevent HIV transmission before the commencement of the Global Plan, so the scope of its progress has been limited by its previously established success.

While a number of priority countries have made impressive gains, some still face significant challenges in rolling out effective services to prevent mother-to-child transmission. This includes Nigeria, which has the second largest HIV epidemic in the world and sees the largest number of new HIV infections among children each year. The country was home to one third of all new HIV infections among children in the priority countries in 2014, with an estimated 58 000 [51 000-66 000]. This is roughly equivalent to the next six countries combined. There has only been a 15% decline in new paediatric HIV infections in Nigeria since 2009. When the data are reanalysed without Nigeria, the remaining 20 countries have reduced new HIV infections among children by 56%.



#### **Figure 3** Number of new HIV infections among children in 2014 and percentage reduction in new HIV infections since 2009 in 21 Global Plan priority countries

#### Table 1

Percentage decline in new HIV infections among children in 21 Global Plan priority countries, 2009–2014

>60% decline	30–60% decline	<30% decline
Ethiopia (65%)	Botswana (58%)	Angola (25%)
Mozambique (69%)	Burundi (57%)	Cameroon (27%)
Namibia (64%)	Ghana (51%)	Chad (19%)
South Africa (76%)	Lesotho (42%)	Côte d'Ivoire (26%)
Swaziland (63%)	Malawi (53%)	Democratic Republic of the Congo (27%)
Uganda (69%)	Zambia (38%)	Kenya (29%)
United Republic of Tanzania (72%)	Zimbabwe (57%)	Nigeria (15%)

#### PREGNANT WOMEN LIVING WITH HIV ARE RECEIVING SERVICES, BUT IMPORTANT GAPS REMAIN

The proportion of pregnant women living with HIV who received antiretroviral medicines (excluding the less effective single-dose nevirapine) for the prevention of mother-to-child transmission has more than doubled in the 21 priority countries, from a baseline of 37% [34-40%] in 2009 to 77% [71-82%] in 2014. In 2014, seven of the priority countries (Botswana, Mozambique, Namibia, South Africa, Swaziland, Uganda and the United Republic of Tanzania) met the Global Plan goal of ensuring that 90% or more of pregnant women living with HIV receive antiretroviral medicines (see Figure 4). In 2014 alone, Uganda provided antiretroviral medicines to an additional 25 000 pregnant women living with HIV.

Countries are also providing more efficacious regimens to pregnant women, rapidly adopting the 2013 WHO Consolidated Guidelines on the Use of the Antiretroviral Drugs for Treating and Preventing HIV Infection (2). WHO recommends that pregnant women and girls living with HIV be offered immediate and lifelong treatment regardless of disease or immunological status (Option B+), to safeguard the health of the mother, while at the same time preventing HIV transmission to the infant. With regards to infant diagnosis and treatment, the Consolidated guidelines recommend that HIV-exposed infants be tested for HIV by the time they are 6-8 weeks of age, again at the end of breastfeeding, and at any intervening point they present with illness. The guidelines also recommend that all diagnosed infants under the age of five years should be provided with treatment upon confirmation of their diagnosis.

#### Figure 4





With appropriate retention and adherence, the WHO recommendations make it possible to cut the risk of mother-tochild transmission to 5% or less among breastfeeding populations, and to 2% or less among non-breastfeeding populations. Due to its operational simplicity, while optimizing maternal health and preventing motherto-child transmission of HIV, Option B+ has become a significant game changer in efforts to prevent new HIV infections among children and keep their mothers alive for many countries. During 2014, countries accelerated comprehensive efforts to phase out regimens and approaches for preventing new HIV infections among children that were no longer recommended by WHO (such as Option A), instead rapidly expanding access to Option B+. All but three countries (Côte d'Ivoire, Ghana and Nigeria) have now commenced roll-out of Option B+, and 12 have already achieved—or are close to achieving-full national implementation. Of the 77% of pregnant women (946 000) receiving antiretroviral medicines in 2014, 86% (812 000) were receiving lifelong antiretroviral therapy. Therefore among all

pregnant women living with HIV, 66% were started on, or were already receiving, lifelong treatment. This marks a major success for the Option B+ strategy and how it enables pregnant women to get antiretroviral therapy. As a result, treatment coverage for pregnant women, which has been historically lower than for other adults, has not only matched the average among adults—it has surpassed it.

#### MOTHER-TO-CHILD HIV TRANSMISSION RATES HAVE DECLINED

The risk of HIV transmission from an untreated mother living with HIV to her child ranges from approximately 15% to 45%, depending upon the presence and duration of breastfeeding (15). One of the main goals of the Global Plan is to reduce this rate to 5% or less among breastfeeding populations, and 2% or less among non-breastfeeding populations. In 2009, prior to the launch of the Global Plan, the overall transmission rate (including during the breastfeeding period) was 28% [25–30%] in 21 priority countries. In 2014, this rate was halved to 14% [12–16%] (see Figure 5).

#### Figure 5

Six-week and final mother-to-child transmission rates in 21 Global Plan priority countries, 2014



With a final transmission rate of 4% [3–4%] in 2014, South Africa—where breastfeeding is widely practiced—appears to have met the Global Plan target for mother-to-child transmission rate. In addition, Botswanawhere non-breastfeeding is the official policy for infants born to mothers living with HIV-is also close to the target, with a 4% rate of final transmission (the goal for non-breastfeeding countries is 2%). Five countries-including Mozambique, Namibia, Swaziland, Uganda and the United Republic of Tanzania-had final transmission rates of less than 10% in 2014, while three other countries (Lesotho, Zambia and Zimbabwe) had a rate less than or equal to 14%.

Several countries, however, continue to have elevated transmission rates, with the highest being Chad (34%) and the Democratic Republic of the Congo (31%). However, as more countries expand services for pregnant and breastfeeding women and increase HIV treatment coverage, transmission rates are likely to continue to decline. Achieving and maintaining low transmission rates requires universal coverage across the prevention of mother-to-child transmission cascade. including high antenatal attendance, high HIV testing and counselling rates, antiretroviral therapy coverage upwards of 90% and systems that support lifelong adherence to antiretroviral therapy and retention for mothers in the postpartum period.

The impact of both low retention in care and adherence to antiretroviral therapy is most evident when looking at the final transmission rate across the countries. Approximately 60% of new HIV infections may now be occurring during the breastfeeding period due to poor systems of follow-up for mothers postpartum. Analysis of 2014 data shows that the priority countries have a collective six-week mother-to-child transmission rate of 5%, but that rate rises to 14% at the end of breastfeeding. Thus, there is an urgent need to support women so that they are retained in care and adhere to antiretroviral therapy throughout this period of risk. This will maximize the prevention and treatment benefits of antiretroviral medicines.

#### NEED FOR PREVENTION OF MOTHER-TO-CHILD TRANSMISSION REMAINS HIGH DUE TO NEW INFECTIONS AMONG WOMEN

The total number of women requiring these services each year in the 21 priority countries remains high: it was estimated at 1.2 million [1.1–1.3 million] in 2014. Preventing new HIV infections among women of childbearing age not only promotes their good health, but it is an important step in eliminating mother-to-child transmission of HIV. The Global Plan aims to reduce the number of recent infections among these women in priority countries by 50% between 2009 and 2015. However, the data show that only marginal progress has been made towards achieving this goal. In 2009, 670 000 [630 000-720 000] women of childbearing age acquired HIV; this declined to 570 000 [530 000-620 000] in 2014, a reduction of only 15%. Between 2009 and 2014, a total of 3.8 million women of childbearing age in the 21 reporting countries were newly infected with HIV. This population becomes an additional cohort of women that will need to be identified and provided with services to prevent mother-to-child transmission if they decide to have children. Furthermore, some of these infections may be occurring in women who are already pregnant or breastfeeding, but yet most programmes in these countries do not have systems in place to retest pregnant women who were previously HIV-negative.

Additionally, due to increasing access to antiretroviral therapy, a larger number of women are living healthy lives with HIV and are able to have children, as is their right. Continued investment in services to prevent new HIV infections among children and keep their mothers alive, as well as access to antiretroviral medicines, is therefore needed, as more women living with HIV are added to the pool of those who need services.

Some countries have made progress in lowering new HIV infections among women and girls. For instance, Burundi estimates a 46% reduction in new HIV infections among women between 2009 and 2014, and Ghana, Malawi, South Africa, Swaziland and the United Republic of Tanzania estimate reductions of 20-30% over the same period. Helping pregnant and breastfeeding women who test negative at the antenatal or postnatal clinics to remain HIV-negative is crucial to the baby, as seroconversion during pregnancy or breastfeeding, with its high viremia, increases the risk of transmission. Efforts such as partner testing, especially to identify discordant couples, can be important opportunities to offer treatment and educate couples on condom use. Many programmes to prevent new HIV infections among children and keep their mothers alive face challenges developing a concrete package of services for clients who test HIV-negative, but such women can be strong allies, as they may be more likely to share the good news with their male partners and facilitate couples testing and counselling (3). A WHO review emphasizes the importance of both increasing male engagement in reproductive health and working to change the perception of reproductive health as primarily the domains of women (16). Male partner involvement can increase adherence and retention as the couple works together to protect each other's health and that of their child (or children).

### SIGNIFICANT UNMET NEED FOR FAMILY PLANNING REMAINS

All women, including women living with HIV, should have the opportunity to plan their pregnancies and have children when they want. This is particularly important for adolescent girls, who are at a greater risk for pregnancy-related complications. It is also important for women in the peak of their fertility, because it will allow them to make informed choices about pregnancy. Family planning remains a core pillar of the four-pronged approach to comprehensive programming to prevent mother-to-child transmission. Providing appropriate counselling, support and contraceptives to women living with HIV in order to meet their family planning goals will optimize health outcomes for women and reduce the number of infants who are exposed to or infected by HIV. Moreover, spacing of pregnancies is beneficial to the health of both women and their children.

The Global Plan aims to eliminate unmet need for family planning among all women in the priority countries (including women living with HIV), thereby ensuring that all women who desire contraception have access to it. The most recent population-based surveys, however, show that while some countries (notably Malawi, Swaziland and Zimbabwe) have made noticeable improvements in their efforts to provide family planning services for couples, approximately half of the 21 priority countries do not meet the need for family planning among at least 25% of all married women (Figure 6).

The effects of this limited response, coupled with high HIV prevalence in general, contribute to the stable numbers of women living with HIV who are pregnant in the 21 countries and in need of services to prevent mother-to-child transmission (approximately 1.2 million annually since 2009). Greater efforts are needed to hasten progress on the first two prongs of the Global Plan: primary HIV prevention for women and reducing the unmet need for family planning services.

Data assessing unmet need for family planning is compiled from household surveys, which are conducted every three to five years (depending on the country). Some of the



**Figure 6** Percentage of currently married women with an unmet need for family planning, based on the most recent household survey

data reported in this report were collected as long as five years ago (or earlier). Hence, it is necessary to develop additional ways to measure the unmet need for family planning to provide more real-time information about the fertility desires of women.

It is important to note that the results presented here are not specific to women living with HIV. Survey data frequently are not available by HIV status, or the numbers of women living with HIV in the survey may be too small to provide reliable measures of unmet need for family planning in that specific population. Further improvements in population-based mechanisms for assessing differences by HIV status would better inform programmes about which areas require strengthening.

#### EFFORTS TO KEEP MOTHERS ALIVE AND HEALTHY ARE SHOWING RESULTS

AIDS-related conditions are still the leading cause of death worldwide for women of reproductive age, and the Global Plan aspires to halve AIDS-related maternal mortality in the priority countries. Pregnant women living with HIV are also at greater risk of dying from pregnancyrelated complications than women who are not living with HIV, perhaps because pregnancy increases the risk of concomitant infections or because the risk of other obstetric complications may be increased in HIV-infected women. Estimates of AIDS-related maternal mortality will be provided by WHO later this year, but in 2013 (the most recent year for which data were available), the proportion of maternal deaths attributed to AIDS in 13 countries in sub-Saharan Africa was over 10%.

Over the last five years, there has been a 45% decline in the number of AIDS-related deaths among women of reproductive age in the 21 priority countries (see Figure 7). At the same time, there has been a significant increase in the proportion of pregnant women living with HIV who are already on treatment (see Figure 9), rising from 11% in 2009 to 66% in 2014.

A key factor in the progress towards improving the health of pregnant and breastfeeding women has been expanded access to treatment in the form of Option B+. This life-saving approach has enabled women to begin treatment early, before their immune system is too damaged. Ensuring that women of reproductive age who are living with HIV are identified early, initiated on lifelong antiretroviral therapy, treated for opportunist infections (such as tuberculosis) and provided with safe perinatal care and delivery will help to further decrease mortality. Data, however, show that drop-out rates are high, particularly for women who start antiretroviral therapy to prevent mother-tochild transmission (compared to those who begin treatment for their own health). To address this, stronger programmes to support women and retain them in care are needed to maximize the benefits of antiretroviral therapy.

#### LIMITED PROGRESS IN INFANT DIAGNOSIS

WHO recommends that infants exposed to HIV be tested at the first postnatal visit usually when they reach four to six weeks of age—or at the earliest opportunity thereafter, and that those who are infected start treatment immediately (2). Infants infected in utero or during labour and delivery have a poor prognosis compared to those infected during breastfeeding, and they require urgent antiretroviral therapy to prevent early mortality. However, identifying those infants using the common antibody HIV test is a challenge due to the presence of maternal HIV antibodies, which may persist for as long as 18 months in a child's bloodstream. HIV

#### Figure 7





infection can only be definitively confirmed in those infants using a virologic test.

In many countries, the virologic test is performed on dried blood spot specimens collected at service delivery sites and then transported and tested in large centralized laboratories. This often leads to long waiting periods before the results are returned to the facility and caregiver, leading to high rates of loss to follow-up, delayed initiation of antiretroviral therapy or even failure to start on treatment at all. Innovative point-of-care virologic tests have the potential to decentralize testing and markedly reduce the time taken for results to be available. It is necessary, however, to increase both the availability and affordability of these tests, and to determine their optimal use. Efforts to

decentralize infant testing and place testing capabilities in small health facilities—in combination with stronger traditional laboratory systems—are still under way, and some donor organizations are providing funding to make this a reality. The cost of virologic testing for early infant diagnosis also has decreased and sample transport networks have been improved (4). In collaboration with countries, WHO and its partners have also been examining the feasibility of testing at birth, which may provide an adjunct to the earlier detection and treatment of infected infants (14).

Access to virologic testing for infants and rapid antibody testing in children over 18 months of age remain poor in many countries, creating a bottleneck to the scale up of treatment for children, especially those

#### Figure 8

Percentage of infants born to women living with HIV receiving a virological test within the first two months of life in 21 Global Plan priority countries, 2014



Source: UNAIDS, UNICEF and WHO. Global AIDS progress reporting 2015. Geneva: UNAIDS; 2015.

younger than 18 months of age. Despite significant investment in the 21 priority countries, only 49% of children exposed to HIV received HIV virological testing within the first two months of life in 2014 (see Figure 8), although this marks a slight increase since 2013. Only seven of the 21 priority countries were providing timely<sup>3</sup> virological diagnosis to 50% or more of children exposed to HIV in 2014: Namibia (>95%), South Africa (94%), Zambia (94%), Swaziland (81%), Kenya (72%), Lesotho (55%) and Uganda (51%). In the remaining 14 priority countries, the percentage of infants who were tested in time was less than 50%, with many countries exhibiting minimal progress in the last year or even reporting decreases in diagnostic testing.

#### TREATMENT PROGRAMMES STILL LEAVE CHILDREN FAR BEHIND

Infants and young children who acquire HIV have an exceptionally high risk of morbidity and mortality, and half will die before their second birthday if they do not receive treatment. The *Consolidated guidelines* promote simplicity and efficacy in paediatric treatment in order to save more lives and improve clinical outcomes (2). The *Guidelines* also recommend that antiretroviral therapy be initiated in all children diagnosed with HIV who are younger than five years of age. WHO will be releasing new guidelines at the end of 2015 that are expected to contain new information to safeguard the well-being of children living with HIV.

UNAIDS estimates for the number of children in need of antiretroviral therapy are based on a denominator of all children under the age of 15 years living with HIV. This allows for greater comparability across countries that have different antiretroviral eligibility criteria, and it accounts for changes in those criteria over time. The results show that among the 21 reporting countries, only 31% [29–33%] of children living with HIV are receiving HIV treatment. Although, this represents an increase from the 10% [9–11%] baseline in 2009, children were less than half as likely as pregnant women to receive treatment (31% compared to 66%; see Figures 9 and 10).

Two priority countries, Botswana and Namibia, are providing treatment to more than half of the children living with HIV; this is followed closely by South Africa, with just under half of the children living with HIV being provided treatment. Cameroon, Chad and Nigeria, however, have a long way to go in order to increase children's access to treatment.

There is an urgent need to greatly accelerate treatment for children in all priority countries. Many countries have rapidly rolled out treatment for women with the introduction of Option B+; the same acceleration approach is needed to close the coverage gap for children. This includes providing appropriate and simple diagnostic services, training providers at all levels of the health system in the management of children with HIV (including routine and frequent paediatric provider-initiated testing and counseling throughout the breastfeeding period), and aligning clinic visits to support retention in care and adherence for mother-baby pairs.

Low treatment coverage for children living with HIV is related to factors in addition to the challenges encountered while ascertaining diagnosis. These include the limited range of suitable child-friendly formulations of antiretroviral medicines, low rates of paediatric HIV case-finding, poor linkage to care and treatment, and the relative paucity of providers trained in prescribing antiretroviral therapy for children. There are fewer

<sup>3</sup> Virological diagnosis is considered to be timely if it is provided before the child is two months of age.

#### Figure 9

Percentage of pregnant women and children (aged 0–14 years) living with HIV who are receiving antiretroviral therapy in 21 Global Plan priority countries, 2009–2014



#### Figure 10

Percentage of pregnant women and children (aged 0–14 years) living with HIV who are receiving antiretroviral therapy in 21 Global Plan priority countries, 2014



options for age-appropriate antiretroviral formulations available for use, especially among the youngest infants. Treatment costs for young children also are higher than for adults—in part because the recommendations call for the use of boosted protease inhibitors in first-line treatments in order to optimize outcomes for children.

Treatment can only be successful with strong adherence, but this is challenging in many settings. There is an urgent need for paediatric antiretroviral formulations that are heat-stable, palatable and easy for caregivers to administer. There was a breakthrough in May 2015, when the United States Food and Drug Administration (FDA) gave tentative approval for lopinavir/ritonavir (LPV/r) oral pellets. These pellets come packaged in a small capsule that is easily opened, allowing them to be sprinkled over a child's food—or in the case of a smaller infant—placed directly into the mouth or over expressed breast milk (5). LPV/r previously was only available in tablet form that could not be broken or a liquid that required refrigeration and had an unpleasant taste, making it extremely difficult to administer to infants.

#### CO-TRIMOXAZOLE PREVENTIVE THERAPY COVERAGE REMAINS LOW

Several coinfections and health conditions are common among children who are exposed to or infected with HIV. The *Consolidated guidelines* recommend co-trimoxazole

#### Figure 11

Percentage of children exposed to HIV receiving co-trimoxazole in 20 Global Plan priority countries, 2014



Source: UNAIDS, UNICEF and WHO. Global AIDS progress reporting 2015. Geneva: UNAIDS; 2015. Data for Namibia not available.

preventive therapy (CPT) for these children for prevention of pneumocystis pneumonia, toxoplasmosis and common bacterial infections. CPT is a simple, well-tolerated and cheap intervention that can extend and improve the quality of life of children living with HIV, including those on antiretroviral therapy. Programme data, however, suggests that this therapy has low utilization. A total of eight priority countries provided CPT to at least 50% of HIV-exposed infants and children in 2014, including Botswana, Mozambique, South Africa and Swaziland (see Figure 11). It is necessary for other countries to reprioritize CPT as part of integrated paediatric HIV care and treatment packages, as recommended by WHO.

It is recommended that CPT be started in all HIV-exposed infants at six weeks of age, around the same time as the recommended early diagnostic test so that integration of services might be an optimal solution. This will require a set of interrelated interventions, including strengthening links between HIV testing and treatment, as well as following-up with infants and children exposed to HIV.

#### CONCLUSIONS

When countries embarked on the Global Plan, they were well aware of the ambitious goals it set, namely a 90% reduction in new HIV infections among children and a 50% reduction in AIDS-related maternal and child mortality over a five-year period. Achievement of these targets required high coverage for service delivery—including testing, treatment and primary prevention interventions—as well as strengthening the capacity of health systems.

Countries embraced these challenges by introducing many innovations, and they continued to do so in 2014, recognizing the unique opportunity to establish an AIDSfree generation within a matter of years. While many countries will not meet the goals of the Global Plan by the end of 2015, some may and others will come close, but all will have transformed health service delivery to women and children.

Countries with low and concentrated HIV epidemics also have been galvanized behind the WHO validation process for eliminating mother-to-child transmission of HIV and congenital syphilis as public health problems. Cuba led the way, becoming the first country in the world to receive this recognition, in a ceremony held in June 2015. Several countries-particularly in the Caribbean region, Europe and south-east Asia—are also likely to apply for validation and follow Cuba's example. UNAIDS estimates that as many as 85 countries already had fewer than 50 new infections among children in 2014, making them potential candidates for WHO validation. Among the Global Plan priority countries, a small group with fewer than 1000 new pediatric infections (Botswana, Burundi, Namibia and Swaziland) have the potential to enter the early stages of the WHO prevalidation process.

By the end of 2014, 1.2 million infections among children have been prevented in the 21 priority countries since programmes to prevent mother-to-child transmission were initiated in the 1990s, with 89% of those averted infections occurring between 2009 and 2014. The number of new HIV infections among children declined by 13% between 2000 and 2008, and by 48% between 2009 and 2014.

South Africa, the country with the largest adult HIV epidemic, may soon have a comparatively small paediatric epidemic. It already has fewer new paediatric infections than Kenya, Malawi, Nigeria and Uganda countries that had smaller epidemics when the Global Plan was launched. South Africa's success is the result of multiple factors, chief among them its massive expansion of antiretroviral therapy access to pregnant women living with HIV, retention support at the community level and unwavering political commitment.

Having set bold and ambitious goals to end paediatric transmission, countries have continued to work steadily towards achieving them. For example, Uganda provided antiretroviral drugs to an additional 25 000 pregnant women living with HIV in 2014, nearly the same amount as the other Global Plan priority countries combined. Even countries facing many challenges, such as the Democratic Republic of the Congo, registered gains in 2014. Eighteen of the 21 countries are rolling out Option B+ with the exception of Côte d'Ivoire, Ghana and Nigeria.

In all countries, the Global Plan has elevated the political visibility of paediatric AIDS and the opportunity for an AIDS-free generation. It also has highlighted the needs of women at risk for or living with HIV infection. It has done this at the national level, but efforts have now moved to sub-national levels. For example, programme implementers in Ghana, Kenya and Nigeria have identified geographic pockets that account for a disproportionate number of new infections, and they have subsequently focused their resources in these high-yield regions. This has required partnerships at the sub-national level, such as with the governors of 13 states in Nigeria and the sub-regional leadership in both Ghana and Kenya. Such strategic approaches are becoming more important as resources are constrained and as donors pursue greater impact and accountability for HIV funding.

Countries remained energized in 2014, and they continue to innovate and scale up. In Kenya, after a stock-taking meeting identified 17 000 pregnant women living with HIV who did not receive antiretroviral medicines, the Ministry of Health launched a rapid-response initiative to locate them and offer them services. However, progress in countries is not guaranteed—indeed, several have demonstrated how fragile gains can be and how it is necessary to sustain concerted action. For example, anecdotal evidence suggests that a three-month strike by nurses or doctors can take as long as six months or even more to recover from. Likewise, a stock-out of test kits that lasts one month can create a large window for infection among children. Countries therefore must protect and strengthen each component of the cascade of services to prevent new HIV infections among children and keep their mothers alive, in order to ensure that each step operates at optimal performance.

The magnitude of the decline in new HIV infections among children depends on where countries began when the Global Plan was launched. Botswana for instance, had a very small number of newly-infected children in 2009, and extensive coverage and uptake of services to prevent new HIV infections among children and keep their mothers alive. The country has continued to maintain the high coverage of services and address its pockets of transmission. As a result, a large drop (in terms of percentage) in new HIV infections among children in Botswana is not realistic. Conversely, in countries such as Malawi, which had a sizeable paediatric epidemic, more dramatic progress could be achieved when the right strategies were put in place and brought to scale.

The Global Plan represents the commitment of governments, international organizations, implementing partners, civil society, women living with HIV and other stakeholders. As it enters its final year, it is urgent that all partners work together to consolidate the significant gains that have been made, remove key obstacles that have slowed, stalled or reversed progress, and redouble collective efforts towards the elimination of new HIV infections among children and keeping their mothers alive. Harnessing the progress that countries have already made in key areas, such as South– South cooperation and technical assistance, will be integral in propelling programmes and initiatives forward.

One area of continued concern remains the plight of children—fewer than half of HIV-exposed children received a virologic test by the recommended age of 6–8 weeks, and

only 31% of all children under the age of 15 received antiretroviral therapy in 2014. By comparison, 66% of pregnant women were started on, or were already receiving, lifelong antiretroviral treatment during 2014. Thus UNAIDS and partners will continue to call attention to this problem, urging countries to ensure that all facilities providing treatment for adults are able to provide treatment for children.

#### A NOTE ON MEASUREMENT

The data used to report on the Global Plan primarily come from two sources: Programme (service delivery) data submitted by countries through the Global AIDS Response Progress Reporting mechanism and country-produced HIV estimates modelled using Spectrum software. To understand the data presented in the progress reports, it is important to understand the limitations and strengths of these data sources. Scrutinizing them allows countries to determine how they need to improve both their monitoring and followup systems to better respond to the call to eliminate mother-to-child transmission.

#### **PROGRAMME DATA**

The programme data required for the Global Plan Progress Reporting mechanism includes the number of women receiving antiretroviral medicines, the regimen and whether women receive antiretroviral medicines during the breastfeeding period.

All countries have systems that count the number of women who come in for antenatal care (ANC) services. Within ANC, nurses complete registers on whether women are tested for HIV and the results of the test (or whether the woman already has been diagnosed as HIV-positive). In most countries, the ANC register is still a paper-based ledger from which the clinics aggregate data and send them to the district for submission to the national level. Further information is collected within a register specific to the antiretroviral regimen that women are provided. Few of the Global Plan priority countries have comprehensive registers that follow the mother-infant pair after delivery to measure adherence during breastfeeding or the duration of breastfeeding.

Based on these systems, countries report on the number of women receiving antiretroviral medicines during pregnancy and delivery. Many countries, however, are not able to identify women who might have moved during the pregnancy and who were subsequently retested or reinitiated on antiretroviral medicines at a new clinic, resulting in them being counted twice. Similarly, women who miscarry are often not removed from the registers of programmes to prevent mother-to-child transmission. In recent years, countries have made improvements to their reporting systems, which has resulted in fluctuations in the reported numbers of women receiving antiretroviral medicines (due to changes in the accuracy of the reporting). Countries such as Kenya, Malawi and Zimbabwe have conducted comprehensive reviews to correct data from previous years and provide a more accurate measure of annual changes. Many other countries however, have been unable to correct data because of a lack of unique identifiers that would identify women who appear twice in the monitoring system.

The data on what happens to mother-infant pairs after delivery is weaker than the data available from antenatal care. As a result, the estimates of antiretroviral medicine coverage during breastfeeding are often rough estimates, and consistent monitoring systems have not been put in place to follow mother-infant pairs longitudinally after the delivery. A concerted effort to address this issue has been a focus for partners in the Interagency Task Team monitoring and evaluation working group during 2015. Data on retention will be most valuable for understanding impact if antiretroviral therapy programmes collect and report data on retention separately for breastfeeding women. This will be an important improvement to the data previously

requested on postnatal prophylaxis under Options A and B.

A number of efforts are underway to improve the quality of data captured by the monitoring and evaluation systems of countries. Attention is now focused on supporting countries to develop longitudinal follow-up clinic registers to improve retention and adherence to treatment for mother–baby pairs. This will also enable assessment of the impact of programmes to prevent new HIV infections among children and keep their mothers alive using empirical data and the validation of modelled HIV estimates.

#### MODELLING DATA

UNAIDS and partners support countries to estimate the impact of HIV on their populations each year. The programme data described above are included in models of the HIV epidemic in individual countries. The models use country-specific information on the demographics of the countryincluding age-specific fertility rates over time, HIV prevalence from antenatal clinics and household surveys, and numbers of people receiving antiretroviral therapy—to calculate these estimates. A number of assumptions inform the models, including the probability of transmission from mother to child given the mother's antiretroviral regimen and her CD4 level.

The country models are created using Spectrum software<sup>4</sup> by estimates teams in each country. The members of the estimates teams vary by country, but they primarily include national experts from the ministry of health or the AIDS coordinating body, as well as programme managers, survey and census specialists, and development partners. Every year, the country teams update the files with the latest programme data and any additional surveillance data to inform the trends in the epidemic. The software and assumptions informing the calculations also are improved every year. In the estimates produced in 2015 (referred to as the 2014 estimates because they include data through the end of 2014), a number of important changes were made to estimates related to programmes to prevent new HIV infections among children and keep their mothers alive.

In countries with generalized epidemics, trends in HIV prevalence over time were adjusted to reflect the differences in prevalence trends among antenatal clinic attendees and members of the general population. A recent study by Eaton et al. (17) showed that HIV prevalence among antenatal clinic surveillance sites declined more quickly over time than trends in prevalence measured in the general population. As a result, countries that rely on data from ANC surveillance to reveal the trend of their HIV prevalence were likely to have overestimated the decline in HIV prevalence. In the updated software, the HIV prevalence curve is adjusted to more closely reflect the general population.

The recently released PROMISE (Promoting Maternal–Infant Survival Everywhere) study showed that the transmission rate among women on Option B was lower than previously assumed in the model. As a result, the transmission rate for Option B—and for women who started receiving combination antiretroviral therapy during their current pregnancy—was reduced (from 2.0% to 0.95%) in the latest model to reflect the new research showing the effectiveness of these regimens.

One of the most important challenges when measuring the impact of programmes to prevent new HIV infections among children and keep their mothers alive is estimating

<sup>4</sup> For more on Spectrum software, please visit the developer's website: http://www.avenirhealth.org/.

the number of pregnant women living with HIV. While early in the HIV epidemic, studies showed women living with HIV had lower fertility, there have been a number of recent studies showing increasing fertility among women on antiretroviral therapy (7–9). These studies show that as women start on antiretroviral therapy, their fertility increases, presumably because of improvements in their overall health. The updated model thus assumes that HIVpositive women receiving antiretroviral therapy have the same fertility levels as HIVnegative women.

This is an important correction from previous estimates. Using the previous software, four countries found that the estimated number of HIV-positive pregnant women was lower than the number of HIV-positive pregnant women that their programme data recorded as receiving antiretroviral medicines. This resulted in coverage values over 100%. An additional six countries found that the coverage rate of their programmes to prevent mother-tochild transmission was unrealistically high.

To address the overestimation of the coverage of services to prevent mother-tochild transmission, countries adjusted the software to assume HIV-positive women had the same fertility as HIV-negative women. This change was applied to all years and could not be limited to only the years with higher antiretroviral therapy coverage. This overestimated the number of births to women living with HIV, especially in earlier years when antiretroviral therapy coverage was low. The new software, however, is able to limit the fertility reduction to years when antiretroviral therapy coverage was high.

As a result of these adjustments, the number of women living with HIV who gave birth in years before antiretroviral therapy rollout is now much lower in those countries. This implies that there are fewer children exposed to HIV and fewer children newly infected and thus living with HIV. The overall number of children living with HIV is now more accurately estimated at 2.6 million, compared to previous years, where the estimated number of children living with HIV was over 3 million.

#### USING THE ESTIMATES AND TREND ANALYSIS

In light of the improvements to the data and assumptions used to create the estimates each year (also called a "round"), users of the data should not compare results from one round to the next. Instead, a full historical set of best estimates is created for each round, allowing for a comparison of trends over time from within the same round. For more information on the process for creating national HIV estimates, please go to www.unaids.org.

#### MEASURING IMPACT

One of the outputs of the software is the estimated population-level mother-to-child transmission rate. The population-level rate implies that it includes all pregnant women in the country and is not limited to the women who are attending antenatal clinics and enrolled in programmes to prevent mother-to-child transmission. In addition, it estimates all HIV-positive pregnant women and not just those who are diagnosed.

A population-level measure is difficult to capture through standard programme data since some women do not attend clinics, while the status of other women is not known. Two countries have made progress in overcoming this measurement challenge by conducting surveys of mother–infant pairs who are attending immunization clinics. Although these measures only capture early transmission and not potential breastfeeding transmission, they are still useful for understanding the impact of programmes to prevent mother-to-child transmission. These direct measures of mother-to-child transmission should be adapted by other countries to improve measures of programme impact.

 Zimbabwe collected data from a sample of 9000 mother-infant pairs attending immunization clinics in five of its ten provinces. The HIV status of mothers and their children were determined to measure the transmission rate between 9 and 18 months of age. The study also used verbal autopsy to capture mothers or infants who died between the birth and the time of measure. The study estimated that 8.8% of exposed children were infected by the age of 9-18 months. This value does not reflect the final transmission rate, since the median duration of breastfeeding in Zimbabwe is 18 months. A number of the children will have been tested closer to 9 months of age. Assuming

the risk of transmission among women receiving antiretroviral therapy is approximately 0.2% per month, a rough calculation suggests that the additional exposure of 10–15 months would result in an additional 2–3% transmission. This result supports the 12% final transmission rate presented in this report.

 In South Africa, an evaluation of the programme to prevent new HIV infections among children and keep their mothers alive was conducted by measuring HIV prevalence among mother-infant pairs during immunization. The six-week transmission rate was 3.5% [2.9–4.1%] (18). This compares well to the estimated 3% transmission rate at six weeks for 2013.

Similar efforts need to be supported in all priority countries.

#### DEFINITIONS OF KEY TERMS

Definitions used in this report are aligned with current consensus definitions used by the World Health Organization as described in the Consolidated guidelines on the use of antiretroviral drugs for treating and preventing HIV infection (2) and the Antiretroviral drugs for treating pregnant women and preventing HIV infection in infants (19). Option A has not been recommended by WHO since 2013; instead, Options B and B+ are favoured. Based on WHO presentations at the International AIDS Society Conference in Vancouver in July 2015, consensus seems to be building that offering immediate, lifelong treatment for everyone living with HIV has significant benefits both for the health of the individual and for reduced risk of transmission to others (due to the lowered amount of circulating virus in the blood). For pregnant and breastfeeding women, this strategy is already in use.

**OPTION A:** All HIV-positive pregnant women should first be screened for eligibility for antiretroviral therapy. Women who are not eligible are instead given twice-daily AZT starting from as early as 14 weeks of gestation (or as soon as possible thereafter), continuing during pregnancy. At the onset of labour, single-dose NVP (sd-NVP) is administered with initiation of twicedaily AZT + 3TC, which should be continued for seven days postpartum. For breastfeeding infants, maternal prophylaxis should be coupled with daily administration of NVP to the infants from birth (within 6-12 hours) or as soon as feasible thereafter, until one week after all exposure to breast milk has ended. In infants receiving replacement feeding only, maternal prophylaxis should be coupled with daily administration of infant NVP or AZT from birth (within 6–12 hours), or as soon as feasible thereafter, until 4-6 weeks of age. As noted above, Option A is no longer recommended by WHO.

**OPTION B:** All HIV-positive pregnant and breastfeeding women should be screened for eligibility for antiretroviral therapy. Women who are not eligible are given triple antiretroviral medicines during pregnancy and throughout the breastfeeding period please put in parentheses to prevent motherto-child transmission of HIV.

**OPTION B+:** All HIV-positive pregnant and breastfeeding women are given lifelong antiretroviral therapy, irrespective of CD4 and clinical stage of disease. This is done for their own health, for the prevention of vertical HIV transmission and for additional HIV prevention benefits.

# Country fact sheets

## ANGOLA

Angola has shown slow progress, with a decline of 25% in the number of new HIV infections among children since 2009. Angola is currently scaling up services of the Option B+ strategy in multiple regions and sites. There has been improvement in programme coverage of women receiving antiretroviral medicines to prevent mother-to-child transmission, with coverage rising from 18% in 2009 to 45% in 2014. The final mother-to-child transmission rate remains high at 25% and the number of women newly infected with HIV (aged 15–49 years) has remained relatively unchanged, decreasing by 2% since 2009. Paediatric diagnosis and treatment is an area for continued focus, as only 14% of infants born to women living with HIV received an early infant diagnosis test and only 14% of children (aged 0–14 years) living with HIV were provided with antiretroviral therapy.



### The number of new HIV infections among children (0–14 years old)



#### Percentage of children (0–14 years old) living with HIV who have access to antiretroviral therapy






Baseline [2009]	÷	Ť	Ť	Ť	÷	Ť
2011	Ť	Ť	Ť	Ť	Ť	Ť
2012	÷			Ť		Ť
2013	÷	Ť	Ť	Ť	÷	Ť
2014	÷			÷		÷
<b>*</b> = 2000						

## Percentage of infants born to women living with HIV receiving a virological test by two months of age

Percentage of unmet need for family planning



N/A

# BOTSWANA

Since 2009, Botswana has reduced new HIV infections among children by 58%. Revised estimates suggest there may be slight increases in both the number of new paediatric HIV infections and the vertical transmission rate from the previous year, with a final transmission rate of 4% in 2014. In 2015, Botswana adopted the Option B+ strategy and clinical guidelines are currently under revision and early implementation is underway at select sites. In 2014, 91% of pregnant women living with HIV received antiretroviral medicines; of that group, 59% received lifelong antiretroviral therapy. Botswana has one of the best paediatric treatment coverage rates, with 53% of children (aged 0–14 years) living with HIV receiving medication, although only 42% of HIV-exposed infants receive timely infant diagnosis. It also has been a leader in innovating national HIV service delivery models, including provider-initiated testing and nurse-initiated antiretroviral therapy programmes.



# The number of new HIV infections among children (0–14 years old)







The number of women (15-49 years old) acquiring HIV has decreased by 5% since 2009

Baseline [2009]	Ť	Ť	Ť	Ť	Ť	Ť	<b>†</b>				7000
2011	Ť	Ť	Ť	Ť	Ť	Ť	<b>†</b>				7000
2012	Ť	Ť	Ť	Ť	Ť	Ť	<b>†</b> 🖏				7100
2013		Ť	Ť	÷	Ť	÷	<b>Å</b>				6800
2014	Ť	÷	÷	÷	÷	÷	<b>^</b>				6700
<b>+</b> = 1000											

## Percentage of infants born to women living with HIV receiving a virological test by two months of age

Percentage of unmet need for family planning



N/A

# BURUNDI

Burundi had fewer than 1000 new child infections in 2014. The country currently employs the Option B antiretroviral therapy regimen; Option B+ roll-out is in development, with early implementation and piloting at select sites. Since 2009, Burundi has seen a 46% reduction in the number of new infections among women (aged 15–49 years), the highest among the priority countries. In 2014, 78% of pregnant women living with HIV received antiretroviral medicines to prevent mother-to-child transmission. Challenges remain in sustaining access to antiretroviral medicines for new mothers throughout breastfeeding, as the vertical transmission rate increases from 5% at birth to 22% after breastfeeding ends. Paediatric diagnosis and treatment also are areas for continued focus; only 13% of HIV-exposed infants received early infant diagnosis and 17% of diagnosed children (aged 0–14 years) received antiretroviral therapy.



# The number of new HIV infections among children (0–14 years old)







#### The number of women (15-49 years old) acquiring HIV has decreased by 46% since 2009

Baseline [2009]	Ť	Ť	Ť		Ť	Í	560	)
2011	Ť	Ť	Ť				450	)
2012	Ť	Ť	Ť	İ			390	)
2013		Ť	Ť				340	)
2014		÷	÷				300	)
<b>+</b> = 100								

Percentage of infants born to women living with HIV receiving a virological test by two months of age

100%

75%

50%

25%

Baseline

[2009]

2011

2012

2013

2014

Percentage of unmet need for family planning



all currently married women 15–49 years old

# CAMEROON

Cameroon has shown a slow decline of 27% in the number of new child HIV infections since 2009. The country is currently developing operational plans to roll-out Option B+, with early implementation and piloting at select sites. Challenges remain in maintaining women on antiretroviral medicines throughout the breastfeeding period, as the sixweek mother-to-child transmission rate of 8% rises to 22% after breastfeeding ends. Paediatric diagnosis and treatment also is an area for continued attention: in 2014, 32% of HIV-exposed infants received early infant diagnosis for HIV, and only 11% of children living with HIV received antiretroviral therapy. Cameroon is diversifying its programming by utilizing mobile phones to send HIV test results to users, training community radio hosts to speak about available resources for the elimination of new HIV infections among children, and strengthening the link between health facilities that provide those services and the activities of the non-health sectors (such as religious leaders).



# The number of new HIV infections among children (0–14 years old)







The number of women (15-49 years old) acquiring HIV has increased by 2% since 2009

Baseline [2009]	Ť	Ť	Ť	Ť	Ť	Ť	Ť	Ť	Ť			21 000
2011	Ť	Ť	Ť	Ť	Ť	Ť	Ť	Ť	Ť	Ť	Ť	22 000
2012	Ť		Ť	Ť	Ť	Ť		Ť	Ť	Ť	Ť	22 000
2013	Ť	Ť	Ť	Ť	Ť	Ť	Ť	Ť	Ť	Ť	Ť	22 000
2014		÷	Ť	Ť		Ť	Ť	÷	÷	÷	Ť	22 000
<b>•</b> = 2000												

### Percentage of infants born to women living with HIV receiving a virological test by two months of age







Source: Demographic and Health Survey, 2011, all currently married women 15–49 years old

# CHAD

Chad has shown slow progress, with a 19% decline in the number of new child HIV infections since 2009 and a 14% reduction in the number of new HIV infections among women (aged 15–49 years). The country currently employs the Option B strategy; however, Option B+ roll-out is in development, with early implementation and piloting at health facilities in N'Djamena. The final HIV transmission rate from mother to child remains high at 34%, indicating that stronger retention in care and adherence to antiretroviral therapy during the breastfeeding period is required. In 2014, an estimated 4% of infants born to women living with HIV were receiving early infant diagnosis, and 8% of children (aged 0–14 years) living with HIV were receiving antiretroviral therapy.



# The number of new HIV infections among children (0–14 years old)







The number of women (15-49 years old) acquiring HIV has decreased by 14% since 2009

Baseline [2009]	Ť	Ť	Ť	Ť	Ť	Ť	Ť	Ť	Ť	Ť	Ť	Ť	6000
2011	Ť	Ť	Ť	Ť	Ť	Ť	Ť		Ť	Ť	Ť		5500
2012	Ť	Ť	Ť	Ť	Ť	Ť	Ť	÷	Ť	Ť	1		5300
2013	Ť		Ť	Ť	Ť	Ť	Ť	÷	İ	÷			5200
2014	÷	÷	Ť	÷	÷	Ť	÷	÷	Ť	÷			5200
<b>•</b> = 500													

## Percentage of infants born to women living with HIV receiving a virological test by two months of age



28%



Source: Multiple Indicator Cluster Survey, 2010, all currently married women 15-49 years old

# CÔTE D'IVOIRE

Côte d'Ivoire currently employs the Option B strategy as its national policy for eliminating new HIV infections among children and keeping their mothers alive. The country has made consistent progress in providing access to antiretroviral medicines to pregnant women living with HIV, with 80% coverage in 2014. This is approaching the Global Plan goal of 90% coverage. New paediatric infections have also been reduced by 26% since 2009, although the number of new infections among women (aged 15–49 years) has remained relatively unchanged. Challenges remain in maintaining women on antiretroviral medicines through the breastfeeding period, as the six-week mother-to-child transmission rate of 5% rises to 21% once breastfeeding ends. Paediatric diagnosis and treatment is an area receiving greater attention, with the coverage of early infant diagnosis rising to 40% in 2014 (up from 15% in 2013). In 2014, an estimated 16% of children (aged 0–14 years) living with HIV were receiving antiretroviral therapy.



# The number of new HIV infections among children (0–14 years old)







#### The number of women (15-49 years old) acquiring HIV has stabilized since 2009

Baseline [2009]	÷	Ť	Ť	Ť	Ť	Î	11 000
2011	÷		Ť	Ť	Ť	Ŷ	11 000
2012	÷		Ť	Ť	Ť	Ŷ	11 000
2013	Ť	Ť	Ť	Ť	Ť		11 000
2014	÷		Ť	Ť	÷	Ŷ	11 000
<b>*</b> = 2000							

## Percentage of infants born to women living with HIV receiving a virological test by two months of age







Source: Demographic and Health Survey, 2012, all currently married women 15–49 years old

# **DEMOCRATIC REPUBLIC OF THE CONGO**

The Democratic Republic of the Congo is currently developing operational plans and training for an Option B+ strategy, with early implementation and piloting in Katanga Province. The country has seen a 27% reduction in new child HIV infections since 2009, and the percentage of pregnant women living with HIV who are receiving antiretroviral medicines to prevent transmission has increased from 29% in 2013 to 47% in 2014. Challenges remain in maintaining women on antiretroviral treatment through the breastfeeding period: only 23% of pregnant women living with HIV who receive antiretroviral medicines are retained in care and provided with antiretroviral medicines throughout the breastfeeding period, which translates to a final HIV transmission rate of 31%. Paediatric diagnosis and treatment also is an area for continued focus: in 2014, 13% of HIV-exposed infants received early infant diagnosis, and only 15% of children (aged 0–14 years) living with HIV received antiretroviral therapy.



# The number of new HIV infections among children (0–14 years old)







The number of women (15-49 years old) acquiring HIV has decreased by 14% since 2009

Baseline [2009]			Ť	Ť	Ť	Ť	Ŷ	13 000
2011	Ť	Ť	Ť	Ť	Ť	Ť	Ŷ	13 000
2012	Ť	Ť	Ť	Ť	Ť	Ť		12 000
2013		Ť	Ť	Ť	Ť	Ť		12 000
2014	Ť		Ť	Ť	İ	Ť		12 000
= 2000								

#### Percentage of infants born to women living with HIV receiving a virological test by two months of age







all currently married women 15-49 years old

# **ETHIOPIA**

Ethiopia uses the Option B+ strategy as its national policy for preventing new HIV infections among children and keeping their mothers alive. It has made significant progress, improving the percentage of pregnant women living with HIV who are receiving antiretroviral medicines from 64% in 2013 to 73% in 2014, and reducing the incidence of new child HIV infections by 65% since 2009. Challenges remain in maintaining women on antiretroviral medicines throughout the breastfeeding period, as the six-week mother-to-child transmission rate of 6% rises to 18% after breastfeeding ends. In 2014, 25% of HIV-exposed infants received early infant diagnosis, and 22% of children (aged 0–14 years) living with HIV received antiretroviral therapy. Ethiopia's novel implementation of a sustainable Health Extension Programme strengthens community-based health services and expands service delivery points, with its cadre of over 38 000 health extension workers.



# The number of new HIV infections among children (0–14 years old)









Baseline [2009]	Ť	÷	Ť	Ť								5200
2011	Ť	Ť	Ť	Ť	Ť	Ť						6700
2012	Ť	Ť	Ť	Ť	Ť	Ť	Ť	4				7800
2013	Ť		Ť	Ť		Ť	Ť	÷	÷	Ŷ		9200
2014			Ť	Ť		Ť	÷	÷	÷	÷	/	11 000
<b>•</b> = 1000												

## Percentage of infants born to women living with HIV receiving a virological test by two months of age







all currently married women 15–49 years old

# GHANA

Ghana currently employs the Option B strategy as its national policy for preventing new HIV infections among children. Since 2009, Ghana has reduced new paediatric infections by 51%; in 2014, there were 1900 new paediatric HIV infections. Among pregnant women living with HIV in the country, 81% are receiving antiretroviral medicines to prevent vertical transmission. Challenges remain in maintaining women on antiretroviral medicines throughout the breastfeeding period, as the six-week vertical transmission rate of 4% rises to 18% when breastfeeding ends. This indicates a need for greater support for retention and adherence among new mothers during the breastfeeding period. Paediatric diagnosis and treatment also is an area for continuing focus: in 2014, 28% of HIV-exposed infants received their early infant diagnosis tests within two months of birth, and only 22% of all children (aged 0–14 years) living with HIV received HIV treatment.



# The number of new HIV infections among children (0–14 years old)







The number of women (15-49 years old) acquiring HIV has decreased by 24% since 2009

Baseline [2009]	* <b>**</b> * <b>*********</b>	6800
2011	<b>* * * * * * * * * * * *</b> * * *	6100
2012	<b>* * * * * * * * * * *</b> * *	5700
2013	***	5400
2014	<b>* * * * * * * * * *</b> * *	5200
<b>•</b> = 500		

## Percentage of infants born to women living with HIV receiving a virological test by two months of age







Source: Demographic and Health Survey, 2011, all currently married women 15–49 years old

# KENYA

Kenya has reduced the number of new paediatric HIV infections by 29% since 2009. An estimated 67% of pregnant women living with HIV are receiving antiretroviral medicines, and national scale up of the Option B+ strategy for lifelong treatment is underway. Challenges remain in maintaining women on antiretroviral medicines throughout the breastfeeding period, as the six-week mother-to-child transmission rate of 7% rises to 17% at the end of breastfeeding. Paediatric care is increasing, with 72% of HIV-exposed infants receiving early infant diagnosis and 41% of children (aged 0–14 years) living with HIV now receiving treatment. Removal of maternity user fees has led to a 50% increase in institutional deliveries, and a Rapid Response Initiative to identify and re-enrol pregnant women living with HIV who were lost to follow-up are among the innovations that have been undertaken in the country.



# The number of new HIV infections among children (0–14 years old)









Baseline [2009]	Ť	Ť	Ť	Ť	Ť	Ť	Ť	Ť	Ť	Ť	Ť	İ					24	00	0
2011	Ť	Ť	Ť	Ť	Ť	Ť	Ť	Ť	Ť	Ť	Ť	Ť	Ť				26	00	0
2012	Ť	Ť	Ť	Ť	Ť	Ť	Ť	Ť	Ť	Ť	Ť	İ					25	00	0
2013	Ť	Ť	Ť	Ť	Ť	Ť	Ť	÷	÷	Ť	Ť	Ť					24	00	0
2014		÷	÷	÷	÷	÷	İ	÷	÷	<b>Å</b>	÷	İ					24	00	0
<b>+</b> = 2000																			

## Percentage of infants born to women living with HIV receiving a virological test by two months of age





26% Source: Demographic and Health Survey, 2009,

all currently married women 15–49 years old

# LESOTHO

Lesotho has reduced new paediatric infections by 42% since 2009, with an estimated 1600 new child HIV infections in 2014. The country currently employs the Option B+ strategy as its national policy for preventing new HIV infections among children and keeping their mothers alive. In 2014, 72% of pregnant women living with HIV received antiretroviral medicines, but challenges remain in maintaining women on treatment throughout the breastfeeding period: as the six-week mother-to-child transmission rate of 6% rises to 14% once breastfeeding ends. Paediatric diagnosis and treatment also are an area for continued attention: in 2014, more than half of HIV-exposed infants received an early infant diagnosis test by two months of age, and only 29% of children (aged 0–14 years) living with HIV received antiretroviral therapy.



# The number of new HIV infections among children (0–14 years old)







The number of women (15-49 years old) acquiring HIV has decreased by 8% since 2009

Baseline [2009]		÷	Ť	Ť		Ť	Ť	Ť	Ť	90	600
2011	Ť	Ť	Ť	Ť	Ť	Ť	Ť	Ť	Ť	89	900
2012	Ť	Ť	Ť	Ť	Ť	Ť	Ť	Ť	÷	89	900
2013			Ť	Ť		Ť	Ť	Ť	÷	89	900
2014			Ť	Ť			Ť	÷	÷	89	900
<b>•</b> = 1000											

### Percentage of infants born to women living with HIV receiving a virological test by two months of age



Percentage of unmet need for family planning



all currently married women 15–49 years old

# MALAWI

Since 2009, Malawi has seen a decline of 53% in the number of new HIV infections among children (aged 0–14 years). There has been a concurrent reduction in the number of new HIV infections among women (aged 15–49 years): 32% since 2009. Malawi adopted Option B+ as its national policy in 2011, and since then, the percentage of pregnant women living with HIV who are receiving antiretroviral medicines to prevent new HIV infections among children and keep their mothers alive has increased from 20% in 2009 to 64% in 2014. A mobile communication system has also been introduced to remind women to attend clinic appointments. Areas for continued attention include the scaling up of early infant diagnosis of HIV and paediatric treatment, as only 18% of infants received an early infant diagnosis test by two months of age, and only 30% of children living with HIV received treatment in 2014.



# The number of new HIV infections among children (0–14 years old)



58





The number of women (15-49 years old) acquiring HIV has decreased by 32% since 2009

Baseline [2009]	<b>†</b>	<b>†</b>	<b>† †</b>	<b>†</b>	<b>* * * *</b> *	25 000
2011	<b>†</b> †	<b>†</b>	<b>†</b> †	<b>†</b>	<b>* * *</b>	22 000
2012	<b>†</b> †	<b>†</b>	<b>† †</b>	<b>†</b>	<b>* *</b>	20 000
2013	<b>†</b>	**	<b>* *</b>	<b>†</b>	<b>*</b>	18 000
2014	<b>*</b>	<b>*</b>	<b>* *</b>	<b>*</b>	Ŷ	17 000
<b>*</b> = 2000						

### Percentage of infants born to women living with HIV receiving a virological test by two months of age





19% Source: Multiple Indicator Cluster Survey, 2014, all currently married women 15-49 years old.

# MOZAMBIQUE

Mozambique has seen a 69% reduction in new HIV infections among children since 2009. In 2014, the percentage of pregnant women living with HIV who received antiretroviral medicines to prevent mother-to-child transmission was estimated at 91%, making Mozambique one of seven countries that have achieved the Global Plan goal of 90% coverage for pregnant women. The country is also currently scaling-up Option B+ programmes in multiple regions and facilities. Challenges remain in retaining women in care and providing them antiretroviral medicines through the breastfeeding period, as the six-week vertical transmission rate rises from 3% to 9% after breastfeeding ends. Paediatric diagnosis and treatment also are areas for continued focus, as only 43% of HIV-exposed infants received early infant diagnosis and 37% of children (aged 0–14 years) living with HIV received antiretroviral therapy.



# The number of new HIV infections among children (0–14 years old)







The number of women (15-49 years old) acquiring HIV has decreased by 11% since 2009

Baseline [2009]	İ	Ť	Ť	Ť	Ť	Ť	Ť	÷	Ñ	47 00	0
2011	Ť	Ť	Ť		Ť	Ť	Ť	Ť		45 00	0
2012	Ť	Ť	Ť		Ť	Ť	Ť	Ť		45 00	0
2013	İ	Ť	Ť	Ť	Ť	Ť	Ť			44 00	0
2014	İ	Ť	Ť	Ť	Ť	Ť	Ť			42 00	0
<b>•</b> = 5000											

## Percentage of infants born to women living with HIV receiving a virological test by two months of age







Source: Demographic and Health Survey, 2011, all currently married women 15–49 years old

# NAMIBIA

Namibia has reduced new HIV infections among children by 64% since 2009. Namibia provides antiretroviral medicines to over 95% of pregnant women living with HIV, meeting the Global Plan goal of 90% coverage. In 2014, the country adopted the Option B+ strategy as its national policy, with early implementation and piloting at select sites. Continued attention to the provision of antiretroviral medicines to women throughout the breastfeeding period will address differences in vertical transmission rates, which rise from 1% at six weeks to 7% after breastfeeding ends. Namibia has the highest rate of infants and children receiving paediatric diagnosis and treatment among the priority countries: in 2014, over 95% of HIV-exposed infants received early infant diagnosis and 66% of children living with HIV received antiretroviral therapy.



# The number of new HIV infections among children (0–14 years old)









Baseline [2009]	÷	÷	Ť	Ť	÷	Ť	÷	÷	÷	÷	4	5400
2011	Ť	÷	Ť	Ť	Ť	Ť	Ť	Ť	Ť	Ť	Ť	5700
2012	Ť	Ť	Ť	Ť	Ť	Ť	Ť	Ť	÷	Ť	4	5400
2013	Ť	Ť	Ť	Ť	Ť	Ť	Ť	Ť	Ť	Ť	İ	5400
2014	÷			Ť		Ť	Ť	÷	÷	Ť	4	5400
<b>•</b> = 500												

## Percentage of infants born to women living with HIV receiving a virological test by two months of age



Percentage of unmet need for family planning



all currently married women 15–49 years old

# NIGERIA

Nigeria had an estimated 58 000 new HIV infections among children in 2014. Antiretroviral coverage for pregnant women living with HIV was 29%, up from 13% in 2009. Nigeria currently employs the Option B strategy as its national policy for preventing mother-to-child transmission. Innovative approaches at state level are being undertaken to reach and engage more women in care, but challenges remain in paediatric diagnosis and treatment: only 4% of HIV-exposed infants received early infant diagnosis, and 12% of children (aged 0–14 years) living with HIV received antiretroviral therapy.



# The number of new HIV infections among children (0–14 years old)







The number of women (15-49 years old) acquiring HIV has decreased by 19% since 2009

Baseline [2009]	Ť	Ť	Ť	Ť	Ť	Ť	Ť	Ť	Ť	Ť	Ť	110 000
2011	÷	Ť	Ť	Ť	Ť	Ť	Ť	Ť	Ť	Ť		100 000
2012		÷		Ť	÷	÷	÷	Ť	İ	÷		99 000
2013		Ť	Ť	Ť	Ť	Ť	Ť	÷	Ť	Ŷ		94 000
2014			÷	Ť		÷	÷	÷	İ			89 000
<b>•</b> = 10 000												

### Percentage of infants born to women living with HIV receiving a virological test by two months of age





16% Source: Demographic and Health Survey, 2013,

all currently married women 15–49 years old

# **SOUTH AFRICA**

South Africa has reduced new HIV infections among children by 76% since 2009. In 2014, the country achieved two Global Plan goals a year ahead of schedule: an estimated final mother-to-child transmission rate of 4% and more than 95% coverage of antiretroviral medicines for pregnant women living with HIV. The country began early implementation and piloting of the Option B+ strategy in 2013; nationwide implementation was completed in 2015. In 2014, 94% of HIV-exposed infants received an early infant diagnosis test by two months of age, and 49% of all children younger than 15 years living with HIV received antiretroviral therapy. Nurse-initiated antiretroviral therapy and task shifting are among the innovations adopted by South Africa to enable expanded treatment coverage.



# The number of new HIV infections among children (0–14 years old)







The number of women (15-49 years old) acquiring HIV has decreased by 21% since 2009

Baseline [2009]	Ť	Ť	Ť	Ť	Ť	Ť	Ť	Ť	Ť	Ŷ	210 000
2011	Ť	Ť	Ť	Ť	Ť	Ť	Ť		Ť		200 000
2012	Ť		Ť	Ť		Ť		Ť	Ť		180 000
2013		Ť	Ť	÷	Ť	÷	Ť	Ť			170 000
2014		÷	Ť	Ť		Ť	Ť	Ť			160 000
<b>*</b> = 20 000											

### Percentage of infants born to women living with HIV receiving a virological test by two months of age



Percentage of unmet need for family planning



Source: Demographic and Health Survey, 2003, all currently married women 15–49 years old

# SWAZILAND

Swaziland reduced new child HIV infections by 63% between 2009 and 2014. The country has achieved the Global Plan goal of 90% of pregnant women living with HIV receiving antiretroviral medicines. This should reduce the final mother-to-child transmission rate, which rises from 1% at six weeks to 8% at the end of breastfeeding. Swaziland is in the process of early implementation and piloting of Option B+, and it provides early infant diagnosis to an estimated 81% of HIV-exposed infants (one of the highest among the priority countries). Paediatric treatment, however, requires continued attention, as only 43% of children (aged 0–14 years) living with HIV are receiving antiretroviral therapy.



# The number of new HIV infections among children (0–14 years old)







The number of women (15-49 years old) acquiring HIV has decreased by 22% since 2009



## Percentage of infants born to women living with HIV receiving a virological test by two months of age



Percentage of unmet need for family planning



Source: Multiple Indicator Cluster Survey, 2014 all currently married women 15-49 years old

# UGANDA

Uganda has seen a 69% reduction in HIV infections among children since 2009, and it increased the percentage of pregnant women living with HIV receiving antiretroviral medicines to 92% in 2014, thus meeting the Global Plan goal of 90% coverage for pregnant women. National scale-up of the Option B+ strategy is in progress, with an additional 25 000 women receiving therapy in 2014. Challenges remain in retaining women in care and providing them with antiretroviral medicines throughout the breastfeeding period, as the six-week mother-to-child transmission rate rises from 2% to 8% at the end of breastfeeding. An estimated 51% of HIV-exposed infants received early infant diagnosis, and 37% of children living with HIV received antiretroviral therapy in 2014.



# The number of new HIV infections among children (0–14 years old)







The number of women (15-49 years old) acquiring HIV has decreased by 8% since 2009

Baseline [2009]	Ť	Ť	Ť	Ť	Ť	Ň	53 00	)0
2011		Ť	Ť	Ť	÷		55 00	)0
2012		Ť	Ť	Ť	Ť	Ŷ	53 00	)0
2013	Ť	Ť	Ť	Ť	Ť		50 00	)0
2014	÷	Ť	÷	÷	÷		49 00	)0
<b>*</b> = 10 000								

## Percentage of infants born to women living with HIV receiving a virological test by two months of age







Source: Demographic and Health Survey, 2011, all currently married women 15–49 years old

# **UNITED REPUBLIC OF TANZANIA**

The United Republic of Tanzania has achieved a 72% reduction in new paediatric HIV infections since 2009, the second highest among the priority countries. It has also achieved the Global Plan goal of 90% of pregnant women living with HIV receiving antiretroviral medicines. In 2013, the country adopted the Option B+ strategy as its national policy for preventing new HIV infections among children and keeping their mothers alive; it has since moved to full implementation, offering lifelong antiretroviral therapy to all pregnant and breastfeeding women. Challenges remain in retaining women in care and providing them with antiretroviral medicines throughout the breastfeeding period, as the six-week mother-to-child transmission rate rises from 3% to 9% when breastfeeding ends. Paediatric treatment and diagnosis requires continued attention, as only 43% of infants received early infant diagnosis and 29% of children (aged 0–14 years) living with HIV received antiretroviral therapy in 2014.



# The number of new HIV infections among children (0–14 years old)




## Increasing coverage of antiretroviral medicines has translated into decreasing rates of HIV transmission from mother to child



The number of women (15-49 years old) acquiring HIV has decreased by 27% since 2009

Baseline [2009]	<b>†</b>	i i			4	0 0 00
2011	<b>†</b> 1	<b>i</b>			3	7 000
2012	<b>†</b> 1				3	5 000
2013	<b>†</b>	<b>i</b>			3	2 000
2014	<b>†</b>				2	9 000
= 5000						

## Percentage of infants born to women living with HIV receiving a virological test by two months of age







Source: Multiple Indicator Cluster Survey, 2014, all currently married women 15-49 years old

Source: UNAIDS 2014 estimates, unless otherwise noted. Every year, countries update their HIV estimates, including the historical trends of those estimates. The 2014 results reflect updated surveillance and programme data and improved models. The 2014 estimates are likely to differ to estimates produced in earlier years and are believed to be more accurate. Paediatric antiretroviral therapy coverage is based on all children living with HIV, while in previous years it was restricted to children eligible for antiretroviral therapy.

# ZAMBIA

Zambia achieved a 38% reduction in new HIV infections among children between 2009 and 2014. The country currently uses the Option B+ strategy, and it is in the process of scaling up services in multiple regions and sites. The percentage of pregnant women living with HIV who are receiving antiretroviral medicines to prevent mother-to-child transmission is high at 86% in 2014, but challenges remain in retaining women in care and providing them with antiretroviral medicines throughout the breastfeeding period: as the six-week vertical transmission rate of 3% rises to 13% after the end of breastfeeding. Zambia provides early infant diagnosis to 94% of HIV-exposed infants, and 42% of children (aged 0-14) living with HIV receive antiretroviral therapy.



## The number of new HIV infections among children (0–14 years old)



#### Percentage of children (0–14 years old) living with HIV who have access to antiretroviral therapy



## Increasing coverage of antiretroviral medicines has translated into decreasing rates of HIV transmission from mother to child



The number of women (15-49 years old) acquiring HIV has decreased by 6% since 2009

Baseline [2009]	Ť	Ť	Ť	Ť	Ť	Ť	Ť	Ť	÷		Ť	İ	24	000
2011	Ť	÷	Ť	Ť	Ť	Ť	Ť	Ť	Ť	Ť	Ť	Ť	<b>2</b> 5	; 000
2012	Ť	Ť		Ť	÷	÷	Ť	Ť	Ť		Ť	Ť	24	000
2013	÷	÷		Ť	÷	Ť	Ť	Ť	÷		Ť	İ	24	000
2014				÷	÷	÷	÷	÷			÷		23	8 000
<b>+</b> = 2000														

## Percentage of infants born to women living with HIV receiving a virological test by two months of age



Percentage of unmet need for family planning



all currently married women 15–49 years old

Source: UNAIDS 2014 estimates, unless otherwise noted. Every year, countries update their HIV estimates, including the historical trends of those estimates. The 2014 results reflect updated surveillance and programme data and improved models. The 2014 estimates are likely to differ to estimates produced in earlier years and are believed to be more accurate. Paediatric antiretroviral therapy coverage is based on all children living with HIV, while in previous years it was restricted to children eligible for antiretroviral therapy.

# ZIMBABWE

Zimbabwe achieved a 57% reduction in new HIV infections among children between 2009 and 2014. An estimated 78% of pregnant women living with HIV received antiretroviral medicines to prevent mother-to-child transmission in 2014. Challenges remain in retaining women in care and providing them with antiretroviral medicines throughout the breastfeeding period, as the six-week vertical transmission rate rises from 5% to 12% after breastfeeding ends. Zimbabwe has completed national roll-out of the Option B+ strategy. Paediatric diagnosis and treatment remains an area for continued attention: in 2014, 45% of HIV-exposed infants received early infant diagnosis tests and 38% of children (aged 0-14) living with HIV received antiretroviral therapy.



## The number of new HIV infections among children (0–14 years old)



#### Percentage of children (0–14 years old) living with HIV who have access to antiretroviral therapy



## Increasing coverage of antiretroviral medicines has translated into decreasing rates of HIV transmission from mother to child



The number of women (15-49 years old) acquiring HIV has decreased by 18% since 2009

Baseline [2009]	Ť		Ť	Ť	Ť	Ť	Ť	Ť	Ť	Ť	Ť	Ť	Ť	Ť	Ť	Ť	÷			36 00	)0
2011	Ť			Ť	Ť	Ť	Ť	Ť	Ť		Ť	Ť	Ť	Ť			Ť			34 00	)0
2012	Ť	Ť	Ť	Ť	Ť	Ť	Ť	Ť	Ť		Ť	Ť	Ť	Ť	Ť	Ť				32 00	)0
2013	÷			Ť	Ť	Ť	Ť	Ť	Ť	Ť	Ť	Ť	Ť	Ť	Ť					30 00	)0
2014	Ť	÷	÷	÷	÷	÷	Ť	÷	÷		÷			÷						30 00	)0
= 2000																					

## Percentage of infants born to women living with HIV receiving a virological test by two months of age

Percentage of unmet need for family planning



10% Source: Multiple Indicator Cluster Survey, 2014,

all currently married women 15-49 years old

Source: UNAIDS 2014 estimates, unless otherwise noted. Every year, countries update their HIV estimates, including the historical trends of those estimates. The 2014 results reflect updated surveillance and programme data and improved models. The 2014 estimates are likely to differ to estimates produced in earlier years and are believed to be more accurate. Paediatric antiretroviral therapy coverage is based on all children living with HIV, while in previous years it was restricted to children eligible for antiretroviral therapy.

# Summary tables

#### OVERALL TARGET 1

21 GLOBAL PLAN COUNTRIES IN SUB-SAHARAN AFRICA	2009	Low	High	2014	Low	High	2009	Low	High	2014	Low	High
Angola	17 000	12 000	24 000	19 000	14 000	27 000	6 400	4 500	9 200	4 800	2 700	7 700
Botswana	15 000	14 000	16 000	13 000	12 000	14 000	1 200	<1 000	1 400	<500	<500	<1 000
Burundi	6 600	5 700	7 600	4 500	3 800	5 200	2 300	2 000	2 700	<1 000	<1 000	1 300
Cameroon	33 000	30 000	37 000	34 000	31 000	37 000	10 000	9 100	12 000	7 500	6 400	8 800
Chad	14 000	12 000	18 000	12 000	9900	15 000	5 200	4 200	6 500	4 200	3 200	5 500
Côte d'Ivoire	23 000	21 000	26 000	22 000	20 000	25 000	6 300	5 500	7 300	4 700	3 900	5 600
Democratic Republic of the Congo	28 000	25 000	32 000	26 000	23 000	30 000	11 000	9 500	13 000	8 100	6 700	9 600
Ethiopia	36 000	31 000	42 000	28 000	22 000	33 000	14 000	12 000	17 000	4 800	3 100	7 400
Ghana	11 000	8 800	15 000	10 000	7700	14 000	3 900	2 800	5 200	1 900	1 100	3 100
Kenya	74 000	63 000	87 000	75 000	66 000	87 000	18 000	14 000	21 000	13 000	9 300	17 000
Lesotho	11 000	10 000	12 000	11 000	10 000	12 000	2 700	2 400	3 000	1 600	1 300	1 900
Malawi	63 000	57 000	69 000	60 000	55 000	66 000	21 000	19 000	24 000	10 000	8 300	12 000
Mozambique	100 000	86 000	120 000	100 000	89 000	130 000	29 000	24 000	35 000	9 000	5 900	16 000
Namibia	7 500	6 700	8 300	7 700	7 100	8 300	1 500	1 300	1 700	<1 000	<500	1 000
Nigeria	200 000	180 000	230 000	210 000	190 000	230 000	69 000	61 000	78 000	58 000	51 000	66 000
South Africa	260 000	230 000	280 000	240 000	220 000	260 000	38 000	30 000	45 000	9 200	8 300	11 000
Swaziland	11 000	10 000	12 000	11 000	10 000	12 000	2 400	2 200	2 700	<1 000	<1 000	1 000
Uganda	87 000	76 000	99 000	120 000	110 000	140 000	30 000	26 000	36 000	9 500	7 700	21 000
United Republic of Tanzania	87 000	76 000	98 000	84 000	75 000	95 000	26 000	23 000	30 000	7 200	5 200	9 900
Zambia	58 000	53 000	63 000	64 000	60 000	69 000	14 000	12 000	16 000	8 500	7 800	9 700
Zimbabwe	65 000	60 000	71 000	75 000	69 000	81 000	21 000	19 000	23 000	9 100	7 600	11 000
21 priority countries	1 200 000	1 100 000	1 300 000	1 200 000	1 100 000	1 300 000	330 000	300 000	370 000	174 000	150 000	200 000

Number of HIV-positive women delivering

New HIV infections among children (aged 0-14 years)

Source: UNAIDS 2014 estimates.

Source: UNAIDS 2014 estimates.

#### PRONG 1 TARGET

PRONG 2 TARGET

		New HIV infe	ections among	women (aged	15–49 years)		Unmet need for family planning for women					
21 GLOBAL PLAN COUNTRIES IN SUB-SAHARAN AFRICA	2009	Low	High	2014	Low	High		2014				
Angola	12 000	8 000	17 000	12 000	7 600	17 000	-	-				
Botswana	7 000	6 400	7 600	6 700	5 800	7 600	-	-				
Burundi	<1 000	210	1 100	<500	76	760	32	2010				
Cameroon	21 000	19 000	24 000	22 000	18 000	25 000	24	2011				
Chad	6 000	4 500	7 900	5 200	3 600	7 000	28	2010				
Côte d'Ivoire	11 000	9 600	13 000	11 000	9 100	13 000	27	2012				
Democratic Republic of the Congo	13 000	11 000	15 000	12 000	9 600	13 000	28	2014				
Ethiopia	5 200	3 100	8 100	11 000	7 300	16 000	26	2011				
Ghana	6 800	4 800	9 900	5 200	3 400	8 000	26	2011				
Kenya	24 000	19 000	31 000	24 000	20 000	29 000	26	2009				
Lesotho	9 600	8 900	10 000	8 900	8 200	9 600	23	2009				
Malawi	25 000	22 000	28 000	17 000	14 000	20 000	19	2014				
Mozambique	47 000	40 000	55 000	42 000	34 000	51 000	29	2011				
Namibia	5 400	4 900	6 000	5 400	4 800	6 200	18	2013				
Nigeria	110 000	100 000	120 000	89 000	78 000	100 000	16	2013				
South Africa	210 000	190 000	220 000	160 000	150 000	180 000	14	2003				
Swaziland	5 900	5 500	6 300	4 600	3 900	5 300	15	2014				
Uganda	53 000	47 000	60 000	49 000	37 000	62 000	34	2011				
United Republic of Tanzania	40 000	35 000	47 000	29 000	24 000	36 000	22	2010				
Zambia	24 000	22 000	26 000	23 000	20 000	25 000	21	2014				
Zimbabwe	36 000	34 000	39 000	30 000	26 000	33 000	10	2014				
21 priority countries	670 000	630 000	720 000	570 000	530 000	620 000	-	-				

2015 target: 50% reduction in incidence among women (aged 15-49 years).

2015 target: reduce unmet need for family planning to zero.

Source: UNAIDS 2014 estimates.

Source: Household surveys. 2003–2014. The revised definition of unmet need for family planning among currently married women (aged 15–49 years) was used. See: http://dhsprogram.com/topics/ unmet-need.cfm

#### PRONG 3 TARGET

PRONG 3 TARGET

21 GLOBAL PLAN COUNTRIES IN SUB-SAHARAN AFRICA	2009	Low	High	2014	Low	High	2009	Low	High	2014	Low	High
Angola	38	24	52	25	12	38	18	13	25	45	32	63
Botswana	8	7	9	4	3	5	85	79	90	91	85	>95
Burundi	35	29	40	22	16	28	24	21	28	78	67	92
Cameroon	31	27	35	22	19	26	19	17	20	66	59	72
Chad	36	28	44	34	25	43	7	6	9	25	20	31
Côte d'Ivoire	27	23	31	21	17	25	48	43	53	80	71	89
Democratic Republic of the Congo	39	33	44	31	25	36	1	1	2	47	41	53
Ethiopia	39	32	46	18	10	25	12	10	14	73	59	87
Ghana	34	24	44	18	9	28	32	25	41	81	61	>95
Kenya	24	19	29	17	12	22	52	44	61	67	59	78
Lesotho	24	21	27	14	11	16	58	53	63	72	66	78
Malawi	34	30	38	17	13	20	20	18	22	64	58	70
Mozambique	29	23	34	9	4	13	37	31	43	91	78	>95
Namibia	20	17	23	7	3	11	77	69	85	>95	>95	>95
Nigeria	34	30	38	28	24	32	13	12	15	29	26	32
South Africa	15	12	18	4	3	4	68	62	74	>95	>95	>95
Swaziland	22	20	24	8	8	9	58	54	62	>95	94	>95
Uganda	35	30	41	8	2	13	27	24	31	92	80	>95
United Republic of Tanzania	30	26	35	9	6	12	36	32	41	90	80	>95
Zambia	24	21	27	13	12	15	63	57	69	86	80	92
Zimbabwe	32	29	35	12	10	14	9	9	10	78	72	85
21 priority countries	28	25	30	14	12	16	37	34	40	77	71	82

Final mother-to-child transmission rate

Percentage of women receiving antiretroviral medicines (excluding single-dose nevirapine) to prevent new infections among children

2015 target: reduce the final mother-to-child HIV transmission rate to <5%.

2015 target: 90% of pregnant women living with HIV receive perinatal antiretroviral therapy or prophylaxis.

Source: UNAIDS 2014 estimates.

Source: UNAIDS 2014 estimates.

#### PRONG 3 TARGET

Percentage of women or infants receiving antiretroviral medicines during breastfeeding

PRONG 4 TARGET

Antiretroviral therapy coverage among children (aged 0–14 years) Percentage of infants born to women living with HIV receiving a virological test within two months of birth

21 GLOBAL PLAN COUNTRIES IN SUB-SAHARAN AFRICA	2009	Low	High	2014	Low	High	2009	Low	High	2014	Low	High	2014
Angola	0	0	0	45	32	63	6	4	9	14	10	20	14
Botswana	29	27	31	59	55	63	30	28	32	53	49	58	42
Burundi	9	8	10	27	23	32	10	9	11	17	15	19	13
Cameroon	11	10	12	31	28	34	5	5	6	11	10	11	32
Chad	7	6	9	15	12	19	3	2	3	8	7	10	4
Côte d'Ivoire	8	7	8	20	18	22	9	8	10	16	15	18	40
Democratic Republic of the Congo	0	0	0	11	9	12	3	2	3	15	13	16	13
Ethiopia	3	2	3	72	58	86	7	6	8	22	19	25	25
Ghana	0	0	0	39	30	53	6	5	8	22	17	29	28
Kenya	30	26	36	67	59	78	14	12	16	41	37	47	72
Lesotho	16	15	18	72	66	78	19	17	20	29	27	32	55
Malawi	5	4	5	74	67	81	10	9	10	30	28	33	18
Mozambique	8	7	9	91	78	>95	9	7	10	37	32	45	43
Namibia	17	15	19	94	86	>95	49	47	52	66	63	69	>95
Nigeria	4	3	4	23	21	25	5	5	6	12	11	13	4
South Africa	69	62	75	>95	>95	>95	11	11	12	49	45	54	94
Swaziland	17	16	18	66	63	70	22	21	23	43	41	45	81
Uganda	0	0	0	92	80	>95	11	10	12	37	33	43	51
United Republic of Tanzania	7	7	9	>95	85	>95	7	6	7	29	26	33	43
Zambia	21	19	23	66	61	71	20	19	22	42	39	44	94
Zimbabwe	1	1	1	78	72	85	13	12	14	38	35	40	45
21 priority countries	21	19	23	71	66	77	10	9	11	31	29	33	49

2015 target: 90% of breastfeeding infant-mother pairs receive antiretroviral therapy or prophylaxis.

2015 target: provide antiretroviral therapy for all HIV-infected children.

Source: UNAIDS 2014 estimates.

Source: UNAIDS 2014 estimates.

Source: UNAIDS, UNICEF and WHO. Global AIDS progress reporting 2015. Geneva: UNAIDS; 2015.

21 GLOBAL PLAN COUNTRIES IN SUB-SAHARAN AFRICA	2009	Low	High	2014	Low	High	2009	Low	High	2014	Low	High
Angola	0	0	0	45	33	64	23	-	-	34	-	-
Botswana	29	27	31	59	55	63	93	-	-	91	-	-
Burundi	9	8	10	27	23	32	28	-	-	90	-	-
Cameroon	11	10	12	31	28	35	37	-	-	59	-	-
Chad	7	6	9	0	0	0	6	-	-	45	-	-
Côte d'Ivoire	8	7	8	20	18	22	50	-	-	>95	-	-
Democratic Republic of the Congo	0	0	0	11	9	12	9	-	-	23	-	-
Ethiopia	3	2	3	72	60	88	16	-	-	42	-	-
Ghana	0	0	0	39	29	52	50	-	-	77	-	-
Kenya	30	26	36	50	43	57	65	-	-	86	-	-
Lesotho	16	15	18	72	66	78	53	-	-	62	-	-
Malawi	5	4	5	64	58	70	53	-	-	78	-	-
Mozambique	8	7	9	79	65	93	70	-	-	>95	-	-
Namibia	17	15	19	94	87	>95	88	-	-	94	-	-
Nigeria	4	3	4	12	11	14	13	-	-	44	-	-
South Africa	20	18	22	>95	>95	>95	>95	-	-	94	-	-
Swaziland	17	16	18	66	63	70	71	-	-	67	-	-
Uganda	0	0	0	91	79	>95	65	-	-	>95	-	-
United Republic of Tanzania	7	7	9	88	78	>95	66	-	-	70	-	-
Zambia	21	19	23	66	61	71	95	-	-		-	-
Zimbabwe	1	1	1	74	68	80	41	-	-	>95	-	-
21 priority countries	11	10	11	66	61	71	-	-	-	-	-	-

#### Proportion of HIV-positive pregnant women receiving lifelong antiretroviral therapy

Source: UNAIDS, UNICEF and WHO. Global AIDS progress reporting 2015. Geneva: UNAIDS; 2015.

Percentage of pregnant women women receiving HIV counselling and testing

Source: UNAIDS 2014 estimates.

#### ABBREVIATIONS

AIDS	acquired immunodeficiency syndrome
ANC	antenatal care
AZT	Zidovudine
CD4	T–lymphocyte cell bearing CD4 receptor
СТХ	co-trimoxazole
СРТ	co-trimoxazole preventive therapy
DHS	Demographic and Health Survey
FDA	United States Food and Drug Administration
GTT	Global Task Team
НСТ	HIV counselling and testing
HIV	human immunodeficiency virus
LPV/r	lopinavir/ritonavir
MICS	Multiple Indicator Cluster Survey
NVP	nevirapine
PEPFAR	United States President's Emergency Plan for AIDS Relief
RRI	Rapid Response Initiative
ТВ	tuberculosis
TFR	total fertility rate
UNAIDS	Joint United Nations Programme on HIV/AIDS
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
WHO	World Health Organization

#### REFERENCES

- Global Plan towards the elimination of new HIV infections among children by 2015 and keeping their mothers alive. Geneva: UNAIDS; 2011.
- 2. Consolidated guidelines on the use of antiretroviral drugs for treating and preventing HIV infection: recommendations for a public health approach. Geneva: WHO; 2013.
- Kaida A et al. Incidence and predictors of pregnancy among a cohort of HIVpositive women initiating antiretroviral therapy in Mbarara, Uganda. PLoS ONE. 2013; 8(6). doi: 10.1371/ annotation/17310bbb-e5bf-4901-8b6e-529577a280db
- 4. HIV/AIDS diagnostics technology landscape. 4th Edition. Geneva: United Nations International Drug Purchase Facility; 2014.
- How AIDS changed everything—MDG
   15 years, 15 lessons of hope from the AIDS response. Geneva: UNAIDS; 2015.
- WHO validates elimination of motherto-child transmission of HIV and syphilis in Cuba. Geneva: WHO; June 2015 (http://www.who.int/mediacentre/ news/releases/2015/mtct-hiv-cuba/en/, accessed 16 October 2015).
- Burgos-Soto J et al. Intimate partner sexual and physical violence among women in Togo, West Africa: prevalence, associated factors, and the specific role of HIV infection. Global Health Action. 2014; 7. doi: 10.3402/gha.v7.23456

- Homsy J et al. Reproductive intentions and outcomes among women on antiretroviral therapy in rural Uganda: a prospective cohort study. PloS ONE. 2009; 4(1). doi: 10.1371/journal. pone.0004149
- 9. Myer L et al. Impact of antiretroviral therapy on incidence of pregnancy among HIV-infected women in Sub-Saharan Africa: a cohort study. PLoS Medicine. 2010; 7.2: 194.
- Demographic and Health Surveys
   [online database]. Washington, D.C.:
   United States Agency for International
   Development (http://dhsprogram.com/ data/, accessed 16 October 2015).
- Multiple Indicator Cluster Surveys [online database]. Geneva: UNICEF (http://mics.unicef.org/, accessed 16 October 2015).
- 12. UNAIDS, UNICEF and WHO. Global AIDS progress reporting 2015. Geneva: UNAIDS; 2015
- 13. UNAIDS 2014 estimates.
- 14. March 2014 supplement to the 2013 Consolidated guidelines on the use of antiretroviral drugs for treating and preventing HIV infection: recommendations for a public health approach. Geneva: WHO; 2014.
- A review of HIV transmission through breastfeeding. Geneva: UNAIDS and WHO; 1998.

- Male involvement in the prevention of mother-to-child transmission of HIV. Geneva: WHO; 2012.
- 17. Eaton J et al. Recent HIV prevalence trends among pregnant women and all women in sub-Saharan Africa: implications for HIV estimates. AIDS. 2014; 28(4): S507–S514.
- 18. Goga AE et al. First population-level effectiveness evaluation of a national programme to prevent HIV transmission from mother to child, South Africa. Journal Epi Community Health. 2015; 69(3). doi:10.1136/jech-2014-204535
- 19. Antiretroviral drugs for treating pregnant women and preventing HIV infection in infants: recommendations for a public health approach. Geneva: WHO; 2010.









UNAIDS Joint United Nations Programme on HIV/AIDS

20 Avenue Appia 1211 Geneva 27 Switzerland

+41 22 791 3666 distribution@unaids.org

unaids.org