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Scaling up HIV services for women and children in the health sector

Progress Report **2008**



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EXECUTIVE SUMMARY

A decade into the implementation of programming for preventing the mother-to-child transmission of HIV in low- and middle-income countries, efforts are gathering speed in many countries and progress is being made towards national coverage of services for preventing mother-to-child transmission. Significant advances have also been made in scaling up antiretroviral care and treatment for children in the past few years. This report contains the most comprehensive set of data on the responses of low- and middle-income countries to addressing the prevention of mother-to-child transmission of HIV and HIV care and treatment for children. It contributes to the global tracking of progress by national governments and implementing partners in translating commitments around increased coverage and uptake into national action.

UNAIDS, UNICEF and WHO published this report earlier this year as Chapter 5 of *Towards universal access: scaling up priority HIV/AIDS interventions in the health sector – progress report 2008*. The report is a result of the successful collaboration of United Nations agencies in producing the essential report on HIV interventions in the health sector. This collective contribution in support of global efforts reflects the commitment of the United Nations to meet the Millennium Development Goals. This stand-alone report examines the progress made in scaling up HIV services specifically for women and children in the health sector.

Half the people living with HIV in the world today are women. In sub-Saharan Africa, this proportion rises to more than 60%. Preventing new infections among women and identifying pregnant women living with HIV and providing them access to interventions to prevent passing HIV infection on to their babies is critical not only for their own health but also for reducing future HIV infections among infants. In 2007, an estimated 2.1 million children younger than 15 years were living with HIV. More than 90% of these children had been infected through their mothers.

For more than 50 years, UNICEF, WHO and partners have been dedicated to maternal, newborn and child health around the world. In the age of HIV, this commitment has translated itself into work to help governments strengthen the response of their health systems to HIV. Today, interventions for preventing HIV transmission from mothers to their babies and for treating children living with HIV are established and functioning in nearly every country in the world. Nevertheless, enormous challenges still need to be overcome to achieve the final goal, which is universal access to HIV prevention, care, treatment and support.

The key findings of this comprehensive global review include the following.

- Global and national political commitment to scale up interventions for preventing the mother-to-child transmission of HIV has intensified in recent years.
- An estimated 18% of pregnant women in low- and middle-income countries received an HIV test in 2007 versus 10% in 2004.
- An estimated 33% of pregnant women living with HIV received antiretrovirals to prevent transmission to their children in 2007, a substantial increase compared with only 10% in 2004. The most significant expansion was in sub-Saharan Africa. In East and Southern Africa, 43% of all pregnant women living with HIV received antiretrovirals for preventing mother-to-child transmission, up from 11% in 2004. Although overall coverage remains low in West and Central Africa (11%), the number of women receiving antiretrovirals for preventing mother-to-child transmission in this region increased 5.5-fold between 2004 and 2007.
- An increasing number of countries are providing combination antiretroviral prophylactic drug regimens to pregnant women living with HIV, which are more effective in reducing the transmission of HIV than one drug alone. In 2007, about one third of women received a regimen using a combination of two or three antiretroviral drugs.
- In 2007, only 12% of pregnant women identified as being HIV-positive during antenatal care were assessed to determine whether they were eligible to receive antiretroviral therapy for their own health. Among the countries providing disaggregated data on antiretroviral regimens used for preventing mother-to-child transmission, only 9% received antiretroviral therapy for their own health.
- Only 8% of infants born to pregnant women living with HIV in 2007 were tested for HIV within the first two months of birth. In addition, only 4% of infants born to women living with HIV initiated co-trimoxazole prophylaxis within the first two months of life.
- The number of children living with HIV receiving antiretroviral therapy increased from about 75 000 in 2005 to almost 200 000 in 2007. However, many children living with HIV are still not receiving treatment, and mortality among them remains high.

1. INTRODUCTION

1.1 Background

By the end of 2007, an estimated 33.2 million [30.6 million to 36.1 million] people were living with HIV. The HIV epidemic is taking a heavy toll on women and children, especially in sub-Saharan Africa. In 2007, women and girls accounted for approximately half of all people living with HIV worldwide and for more than 60% of all infections in sub-Saharan Africa. HIV infection among women negatively affects the quality of life not only of women themselves but also of their families and communities.

At the end of 2007, 2.1 million [1.9 million to 2.4 million] children younger than 15 years were estimated to be living with HIV and

420 000 [350 000–540 000] were newly infected, with well over 90% infected through mother-to-child-transmission (1). Globally, 290 000 [270 000–320 000] children younger than 15 years died of HIV-related causes in 2007. About 90% of the children living with HIV are in sub-Saharan Africa.

An estimated 1.5 million of the 115 million births per year in low- and middle-income countries are from mothers living with HIV. Close to 90% of all pregnant women living with HIV in low- and middle-income countries reside in 20 countries, and 75% are concentrated in 12 countries (Table 1.1).

Table 1.1. Countries with the largest estimated numbers of pregnant women living with HIV and percentage of the total number of pregnant women living with HIV in low- and middle-income countries, 2007

Rank	Country	Estimated number of pregnant women living with HIV	% of the total in low- and middle-income countries
1	South Africa	220 000 [180 000–260 000]	15%
2	Nigeria	190 000 [130 000–240 000]	13%
3	United Republic of Tanzania	100 000 [91 000–110 000]	7%
4	Mozambique	97 000 [81 000–120 000]	7%
5	Uganda	78 000 [68 000–92 000]	5%
6	Kenya	76 000 [66 000–86 000]	5%
7	Zambia	76 000 [68 000–86 000]	5%
8	Malawi	73 000 [64 000–82 000]	5%
9	Ethiopia	66 000 [58 000–74 000]	4%
10	India	64 000 [37 000–92 000]	4%
11	Zimbabwe	52 000 [48 000–57 000]	4%
12	Democratic Republic of the Congo	38 000 [33 000–46 000]	3%
13	Cameroon	34 000 [22 000–42 000]	2%
14	Côte d'Ivoire	28 000 [21 000–34 000]	2%
15	Sudan	18 000 [12 000–26 000]	1%
16	Angola	18 000 [13 000–22 000]	1%
17	Chad	18 000 [10 000–22 000]	1%
18	Ghana	14 000 [12 000–16 000]	1%
19	Swaziland	13 000 [12 000–15 000]	1%
20	Lesotho	13 000 [11 000–14 000]	1%

HIV is also adversely affecting the overall health of children, especially in countries with a high HIV burden. HIV has been the leading cause of death among children younger than five years of age in six countries, all in East and Southern Africa (Table 1.2) (2).

Table 1.2. Percentage of deaths attributable to HIV among children younger than five years, selected high-burden countries, 2000

Country	Deaths among children younger than five years attributable to HIV (%)
South Africa	57
Lesotho	56
Botswana	54
Namibia	53
Swaziland	47
Zimbabwe	41

Source: *World health statistics 2008* (2).

Evidence-based, affordable interventions to prevent infections among infants exist. Without such intervention, between 15% and 45% of infants born to women living with HIV will become infected during pregnancy, delivery or through breastfeeding (3). Knowledge of how to successfully integrate these interventions into health systems and the political commitment to do it is growing in many countries throughout the world.

In 2001, the United Nations convened a special session on HIV/AIDS at which countries adopted the Declaration of Commitment on HIV/AIDS (4). Through this commitment, they

pledged to reduce the proportion of infants with HIV by 50% by 2010 and to ensure that 80% of pregnant women attending antenatal care have access to essential services to reduce mother-to-child transmission.

In 2006, at the second United Nations General Assembly High Level Meeting on HIV/AIDS, countries agreed to work towards the goal of “universal access to comprehensive prevention programmes, treatment, care and support” by 2010 (5). These global commitments complement the health-related United Nations Millennium Development Goals, which have established targets to reduce child mortality, improve maternal health and combat HIV/AIDS, malaria and other major diseases by 2015 (6).

The United Nations recommends the implementation of a comprehensive strategic approach for preventing HIV infection among infants and children that includes four elements (Box 1.1) (7):

- primary prevention of HIV infection among women of childbearing age;
- preventing unintended pregnancies among women living with HIV;
- preventing HIV transmission from women living with HIV to their infants; and
- providing appropriate treatment, care and support to mothers living with HIV and their children and families.

Scaling up this comprehensive range of interventions will bring countries closer to universal access goals by preventing new HIV infections among women and children; ensuring that women living with HIV and children exposed to HIV have access to treatment and care; and prolonging and preserving the quality of life for mothers, children and families.

Box 1.1. The Interagency Task Team on Prevention of HIV Infection in Pregnant Women, Mothers and their Children

The Interagency Task Team on Prevention of HIV Infection in Pregnant Women, Mothers and their Children (IATT) is co-convened by UNICEF and WHO and represented by 20 partner agencies that work on preventing mother-to-child transmission of HIV and HIV treatment and care for children. The IATT works with partners to put into operation the four elements of the comprehensive approach and supports countries in making progress towards universal access goals.

The IATT has established five working groups in areas that require additional guidance and efforts to support country-level scale-up:

- (1) laboratory support
- (2) HIV treatment, care and support for children
- (3) infant and young child feeding
- (4) primary prevention and sexual and reproductive health of people living with HIV
- (5) monitoring and evaluation.

In 2007, the IATT released guidance for the global scaling up of interventions to prevent the mother-to-child transmission of HIV (8). The guidance recommends specific actions to accelerate the scaling up of activities based on the four elements and provides a framework for building partnerships among national governments, civil society and international agencies.

Recommended priority strategies and actions at the country level include:

- district-driven delivery of a standard package of comprehensive services;
- provider-initiated HIV testing and counselling in maternal, newborn and child health settings;
- longitudinal HIV care management in maternal, newborn and child health settings;
- increased access to antiretroviral therapy for pregnant women, mothers, children and families;
- strengthening advice on infant feeding and nutrition and counselling and support for women, their children and their families; and
- operationalizing the link between the delivery of services for preventing the mother-to-child transmission of HIV and sexual and reproductive health care.

1.2 Data sources and methods

The data in this report were collected from national governments through the annual Report Card questionnaire on Prevention of Mother-To-Child Transmission of HIV and Paediatric HIV Care and Treatment in Low- and Middle-income Countries, issued jointly by UNICEF and WHO on behalf of the Expanded Interagency Task Team on Prevention of HIV Infection in Pregnant Women, Mothers and their Children. The Report Card questionnaire includes a set of 35 process indicators for monitoring the progress of national programmes to prevent HIV infection among infants and young children (9).

Data collection is administered through UNICEF and WHO country offices working with national governments and other in-country implementing partners. Data are requested retrospectively for the previous full year, January to December, and include both coverage statistics on the cascade of activities for preventing mother-to-child transmission and

information on care and treatment interventions and programme implementation for children, aggregated from all sites (public, private and nongovernmental organizations).

At the country level, health ministries administer data collection in collaboration with the country offices of UNICEF, WHO and other implementing partners. Aggregate data at the global level are cross-validated and reconciled with data collected by other international partners, including bilateral and multilateral organizations.

The global, regional and country-level data presented in this report have been compiled from data reported by national programmes in 109 countries representing 93% of the estimated 124 million pregnant women in low- and middle- income countries and 99% of the estimated 1.5 million women who need antiretrovirals for reducing mother-to-child transmission.

Programme coverage data were calculated using submitted national programme data as numerators; and to have better standardization between countries, global estimates of the number of women who need services generated using statistical models were used as denominators. Sources of the global estimates include the reports on world population of the United Nations Population Division for the number of births per year and UNAIDS/WHO for the estimated number of pregnant women living with HIV. Data collected through the 2004, 2005, 2006 and 2007 Report Cards on the Prevention of Mother-to-Child Transmission of HIV and Paediatric HIV Care and Treatment in Low- and Middle-income Countries were used for trend analysis (9,10).

When programme coverage is calculated, the denominator is the estimated number of all pregnant women living with HIV in a country, not only those receiving antenatal care and not only women who were identified as needing services for preventing mother-to-child transmission during antenatal care. This gives a more accurate picture of where countries are, not only in providing services to women who access health facilities but what needs to be done to ensure that all women have access to testing and counselling and services for preventing mother-to-child transmission if necessary.

WHO and UNAIDS have also collected two of the indicators (the number of pregnant women living with HIV receiving antiretrovirals for preventing mother-to-child transmission and the number of children living with HIV receiving antiretroviral therapy) through similar tools. These indicators were harmonized at the global and country level to arrive at one set of data from 123 and 128 low- and middle-income countries respectively (see Annex 1 for additional notes).

All United Nations data reporting tools have shared indicators that were developed in coordination with the reporting process for the United Nations General Assembly Special Session on HIV/AIDS to harmonize data collection at the country level. UNAIDS, UNICEF, WHO and other partners work with national governments to include these indicators in national monitoring systems.

Data collected through UNAIDS, UNICEF and WHO are supplemented by data from other surveys such as population-based surveys (11) and other relevant evidence from recent scientific literature.

The data on the coverage of services for preventing mother-to-child transmission presented in this report cannot be compared with the data published in previous reports (9,10) owing to a change in the methods used to estimate the need (see Annex 1 for additional notes).

2. RESULTS

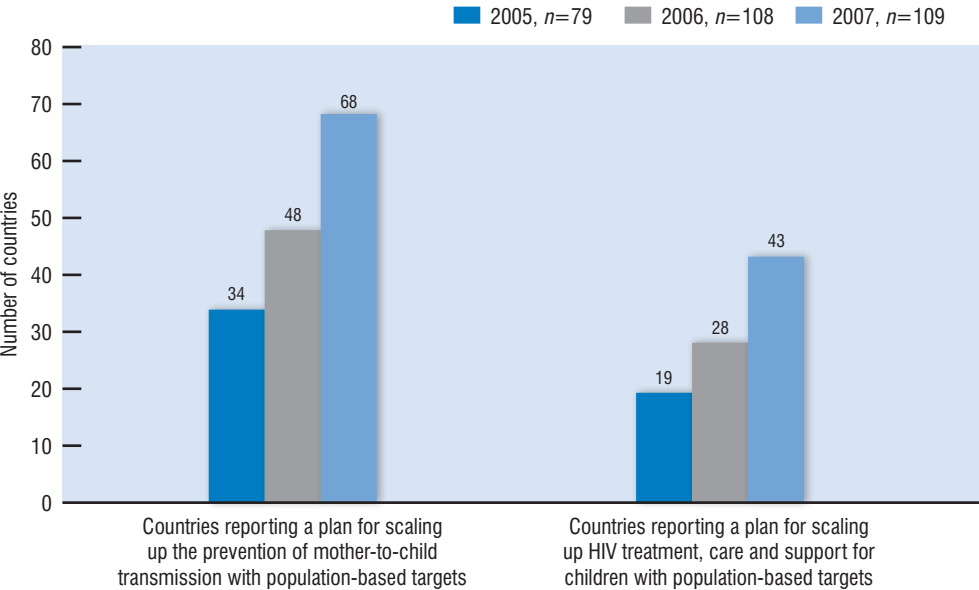
2.1 Scaling up HIV services for women and children

Global and national political commitment to scale up interventions for preventing mother-to-child transmission has intensified in recent years, and an increasing number of countries are expanding their national programmes.

In 2007, nearly all of the 20 countries with the highest number of pregnant women with HIV had developed national plans for scaling up the prevention of mother-to-child transmission and HIV treatment, care and support for children. Globally, 88 of 109 reporting countries (81%) had a plan for scaling up

the prevention of mother-to-child transmission, and 68 of these included population-based targets as called for in the Abuja Call to Action. This represents a substantial increase from only 34 countries that had national plans with population-based targets in 2005. Sixty-two (57%) countries also reported having a plan for scaling up HIV treatment, care and support for children (and 43 of these included population-based targets), which is more than twice the number of countries with such a plan in 2005 (Fig. 2.1).

Fig. 2.1. Number of countries with national scale-up plans and population-based targets for the prevention of mother-to-child transmission and HIV treatment, care and support for children, 2005–2007



n: number of reporting countries

2.2 Primary prevention of HIV for women of childbearing age

The number of women living with HIV worldwide has increased by 1.6 million since 2001 (1). Preventing new HIV infections among women is critical not only for their own health but also to reduce future HIV infections among infants, especially in sub-Saharan Africa, where half the female population is of childbearing age (14).

WHO and UNICEF recommend integrating primary prevention into programmes for preventing mother-to-child transmission to assist women who test HIV-negative in remaining uninfected throughout pregnancy, childbirth and breastfeeding. This is especially important because recent seroconverters are more likely to transmit HIV to their infants.

Interventions for the primary prevention of HIV include a wide range of activities provided within communities and in health facilities with two main approaches: activities aimed at changing individual-level behaviour and community-level interventions.

HIV prevention messages for individual HIV risk reduction can be disseminated in various ways such as through the mass

media, information campaigns and outreach to specific groups and within health facilities. Their translation into practice can be gauged through trends in individually reported behaviour and ultimately reflected in HIV incidence if recently acquired HIV can be measured accurately at the population level.

Data from recent population-based surveys (11) show that, in most countries, less than half of men and women with more than one sexual partner in the last 12 months reported using a condom during their last sexual intercourse (Table 2.1).

Trend data from countries with repeated population-based surveys (11) suggest that, in most cases, reported condom use is increasing over time among people aged 15–49 years who had more than one partner in the past 12 months. However, condom use has declined in some countries, including among men in Côte d'Ivoire and among both men and women in Kenya (Fig. 2.2).

Table 2.1. Percentage of women and men aged 15–49 years in selected countries who had more than one partner in the past 12 months and reported using a condom during their last sexual intercourse, 2005–2007

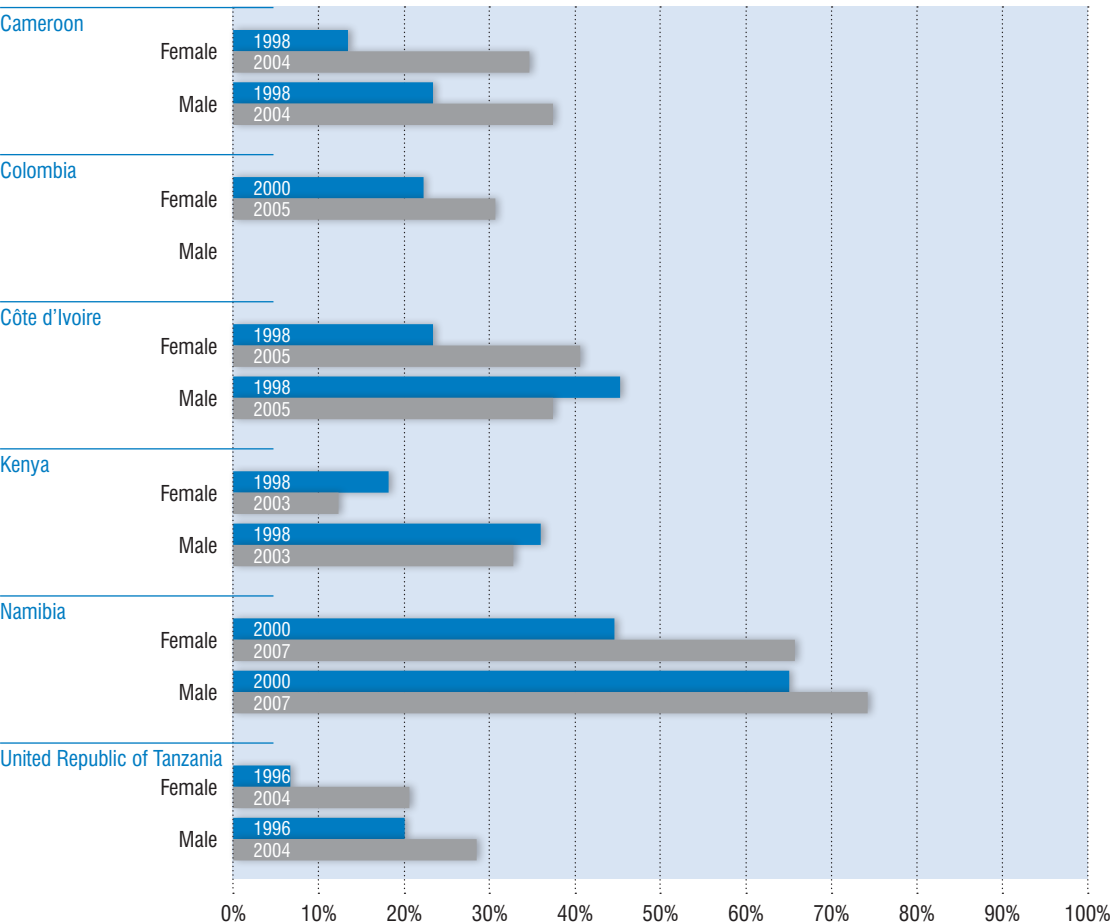
Country	Year	15–24 years		25–49 years	
		Women	Men	Women	Men
Colombia	2005	35.5	...	26.5	...
Congo	2005	22.2	36.5	24.1	26.5
Côte d'Ivoire	2005	45.1	61.8	34.8	25.3
Democratic Republic of the Congo	2007	8.6	22.3	6.9	12.3
Haiti	2005	22.6	50.5	19.4	22.7
Mali	2006	7.9	28.2	8.3	9.1
Namibia	2007	73.7	82.2	55.5	68.8
Ukraine	2007	62.7	63.7	39.8	36.8
Zambia	2007	33.1 ^a	43.1	33.1 ^a	22.9

Source: Demographic and Health Surveys [web site] (11).

... not available.

a For the age group 15–49 years.

Fig. 2.2. Percentage of women and men aged 15–49 years who had more than one partner in the past 12 months and reported using a condom during their last sexual intercourse in selected countries with repeat demographic and health surveys, 1998–2007



Source: Demographic and Health Surveys [web site] (11).

Health facilities provide an important setting for integrating priority HIV prevention interventions with sexual and reproductive health services for women and their sexual partners. Antenatal care settings that offer interventions for preventing mother-to-child transmission as part of a package of services can reinforce HIV primary prevention messages along with other information on HIV and routine information on antenatal care and delivery, sexually transmitted infections and family planning.

In addition, testing and counselling for couples is becoming an increasing focus for many programmes, providing an opportunity to increase the involvement of women's sexual partners in antenatal care. Condom promotion and distribution are also being integrated as a component of the package in many countries.

However, scaling up the provision of primary prevention services in the context of preventing mother-to-child transmission is hampered by several societal and structural barriers such as the overall lack of involvement of male partners and the shortage of skilled health care providers. Several programmes in resource-limited settings are adopting approaches such as task-shifting and the use of less specialized health care workers, including community counsellors and people living with HIV, to address these concerns. Such approaches not only contribute to reducing the workload of more specialized health care workers but also facilitate individual post-test counselling for both HIV-positive and HIV-negative women (15).

2.3 Preventing unintended pregnancies among women living with HIV

The prevention of unintended pregnancies among women living with HIV can be facilitated when they come into contact with health services providing HIV testing and counselling, reproductive health services, maternal and child health care and HIV care and antiretroviral therapy. Enabling women to time and space their pregnancies also leads to improvement in their health and can reduce maternal mortality and increase child survival.

Globally, about 80 million unintended pregnancies occur every year because an estimated 120 million couples have an unmet need for safe and effective contraception (16). Unmet need for contraception and family planning refers to the proportion of all women who are at risk of pregnancy and want to space or limit their childbearing but are not using contraception.¹ Sub-Saharan Africa has the lowest levels of contraceptive use, with only 22% of women of reproductive age who are married

or in union using any family planning method (with 15% using a modern method) (19).² As a result, nearly 27 million women in sub-Saharan Africa have an unmet need for contraception. Meeting the contraceptive needs of these women, including women with HIV, will greatly reinforce efforts to reduce the number of HIV infections among infants.

Facility-based data from some settings confirm the existence of unmet need for family planning among women living with HIV. Studies undertaken by Family Health International have documented levels of unmet need ranging from 9% to 14% among clients of antiretroviral therapy services in Ghana (20). Studies in Côte d'Ivoire, South Africa and Uganda have revealed higher levels of unintended pregnancies among women with HIV, ranging from 51% to 99% (21,22).

Women living with HIV who know their status are in particular need of sexual and reproductive health services to make informed decisions about their future reproductive life, including when to seek appropriate support and services to prevent unintended pregnancies (23). Many studies have emphasized the need to address both family planning and HIV prevention (24). Male and female condoms are the only contraceptive methods that protect against the transmission of HIV and other sexually transmitted diseases as well as unwanted pregnancy. Family planning is now a recommended component of most services for preventing mother-to-child transmission. Antenatal care programmes are also beginning to offer contraceptive information to promote postpartum use (25). Scaling up such functional integration between services for preventing mother-to-child transmission and reproductive health programmes will enable countries to maximize HIV prevention and to improve maternal and child health outcomes (Box 2.1).

1 *Unmet need* constitutes: "Women who are at risk of pregnancy (fecund) who desire to either stop childbearing or postpone their next birth for at least two years, or who are undecided about if or when to have another child, and who are not using a contraceptive method, and who are pregnant or amenorrhoeic and whose pregnancies were unwanted or mistimed, among all women of reproductive age (15–49) who are married or in consensual union." (17,18).

2 Family planning method can be used interchangeably with contraceptive method. It includes clinic and supply (modern) methods and non-supply (traditional) methods. *Traditional methods* include rhythm, withdrawal, abstinence and lactational amenorrhoea. *Modern methods* include female and male sterilization, intrauterine devices (IUDs), hormonal methods (oral pills, injectable and hormone-releasing implants, skin patches and vaginal rings), condoms and vaginal barrier methods (diaphragms, cervical cap and spermicidal foams, jellies, creams and sponges). Surgical sterilization is usually considered to be contraception only if the operation is performed at least partly to avoid having more children (sterilization is also carried out solely for health reasons).

Box 2.1. Integrating sexual and reproductive health services with HIV services

Priority interventions to integrate sexual and reproductive health services with HIV services include:

- promoting and providing condoms (male and female) as a means of protection against both unintended pregnancy and sexually transmitted infections, including HIV;
- providing or referring to sexual and reproductive health services that include counselling on reproductive choices for people living with HIV, planning for a pregnancy, protecting against a pregnancy or interrupting an unintended pregnancy where abortion is legal;
- ensuring postpartum maternal health services that provide counselling about and offer family planning methods, including condoms; and
- providing advocacy and education on sexual health within HIV care and treatment services, reproductive health settings and youth-friendly services as an effective means of changing risk-taking behaviour that can potentially result in reduced unintended pregnancy and sexually transmitted infections, including HIV, and other illnesses related to sexual and reproductive health.

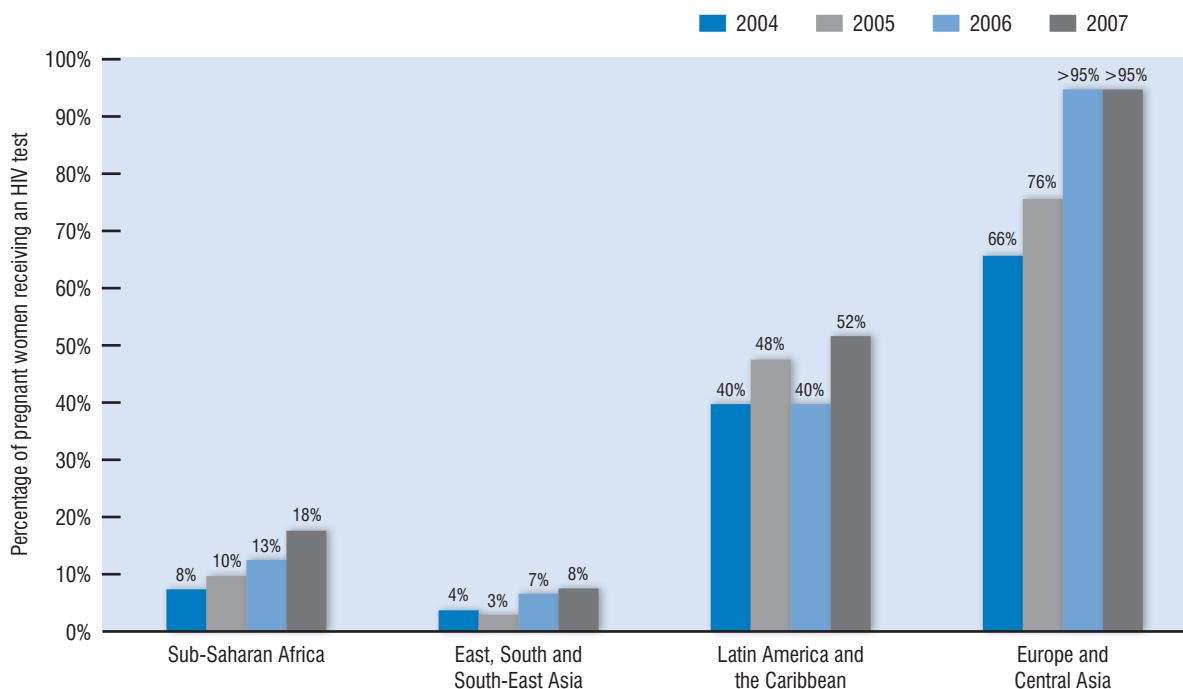
2.4. Preventing the vertical transmission of HIV from mother to child

Reducing HIV transmission from a pregnant woman living with HIV to her infant requires a range of interventions beginning with HIV testing and counselling for pregnant women; followed by antiretroviral prophylaxis for pregnant women with HIV and their newborn baby or antiretroviral therapy for the mother if eligible; safe obstetric interventions; and counselling and support for safer infant feeding options.

2.4.1 HIV testing and counselling

Global coverage of HIV testing among pregnant women has increased in recent years (Fig. 2.3). About 18% of the total estimated number of pregnant women in low- and middle-income countries (20.6 million of 115 million pregnant women) received an HIV test in 2007, compared with 16% in 2006 and 10% in 2004 and 2005. The percentages are slightly higher among women attending antenatal care during their pregnancy, with 21% tested in 2007 versus 13% in 2004.

Fig. 2.3. Percentage of pregnant women in low- and middle-income countries receiving an HIV test, 2004–2007



No data are available for the Middle East and North Africa.

Note: this graph shows the UNAIDS geographical regions. See pages 44–48 for complete country classification listing.

Despite this progress, the overall level of testing remains low in all regions except Eastern Europe and Central Asia. In the 10 countries with the highest estimated numbers of pregnant women with HIV worldwide, HIV testing coverage among pregnant women varies between 4% in Nigeria to 64% in South Africa and 65% in Zambia.

Antenatal care coverage is relatively high in most low- and middle-income countries. This provides an important window of opportunity for health care providers to routinely recommend HIV testing and counselling to pregnant women as part of a comprehensive package of interventions for antenatal care and delivery. For example, both South Africa and Zambia have high rates of antenatal care coverage (92% and 93% respectively) and a corresponding high proportion of pregnant women tested for HIV (64% and 65% respectively) relative to the regional average.

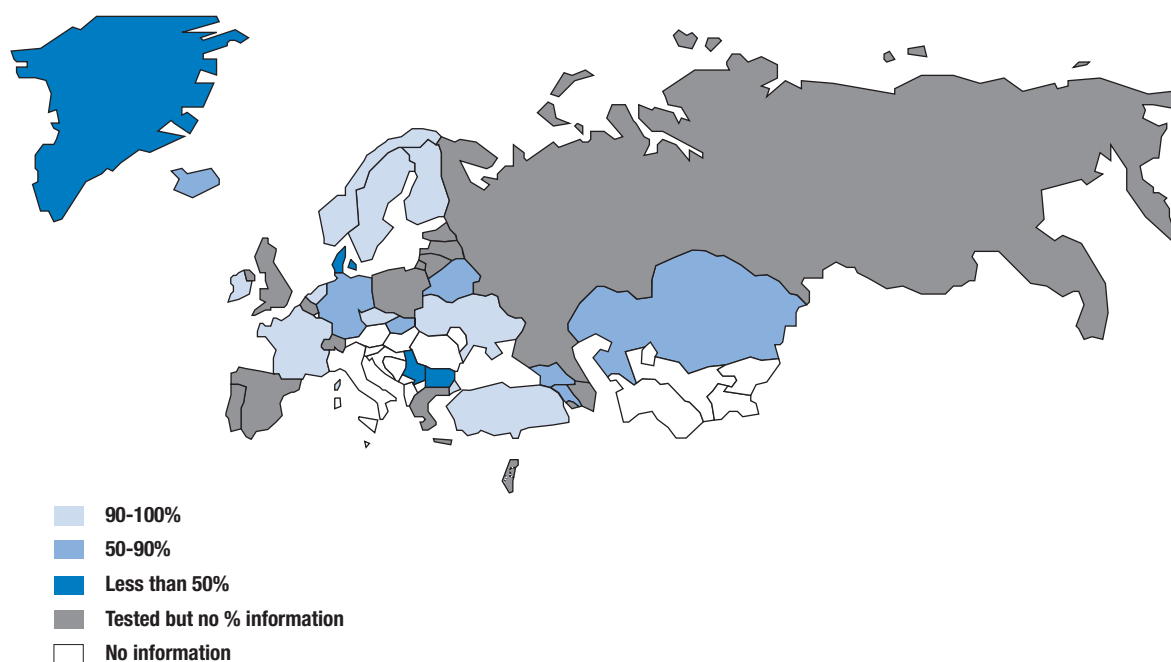
Introducing provider-initiated testing and counselling and rapid HIV testing into the standard package of antenatal care and delivery services in high prevalence countries has been shown to significantly increase access to services for preventing mother-to-child transmission and has often been the factor

determining high levels of HIV testing in antenatal care settings (7,26). Provider-initiated testing and counselling in antenatal care settings is implemented widely in Europe and the United States (Fig. 2.4).

In 2007, 87 of 109 low- and middle-income countries reported the implementation of provider-initiated testing and counselling in all or in some sites, compared with 82 of 108 reporting countries in 2006 and 62 of 79 reporting countries in 2005. Among countries in sub-Saharan Africa, Botswana introduced provider-initiated testing and counselling in pregnant women as part of routine care in 2004. Within six months, antenatal HIV testing increased from 75% to 95% (28). A recent study in urban Zimbabwe (29) showed that HIV testing rates increased from 65% to 99% in the first six months following the introduction of a policy on provider-initiated testing and counselling.

In the absence of provider-initiated testing and counselling, on-site testing rates often remain low, even where antenatal care attendance rates are high. This is primarily because the test is not offered but also due to several other factors such as the unavailability of tests, inadequate counselling and fear of stigma (30).

Fig. 2.4. Percentage of pregnant women tested for HIV as part of routine care^a in the WHO European Region, 2006



Source: EuroHIV (27).

^a Different terms that mean "provider-initiated testing and counselling" may be used in different settings.

2.4.2 Antiretrovirals for preventing mother-to-child transmission

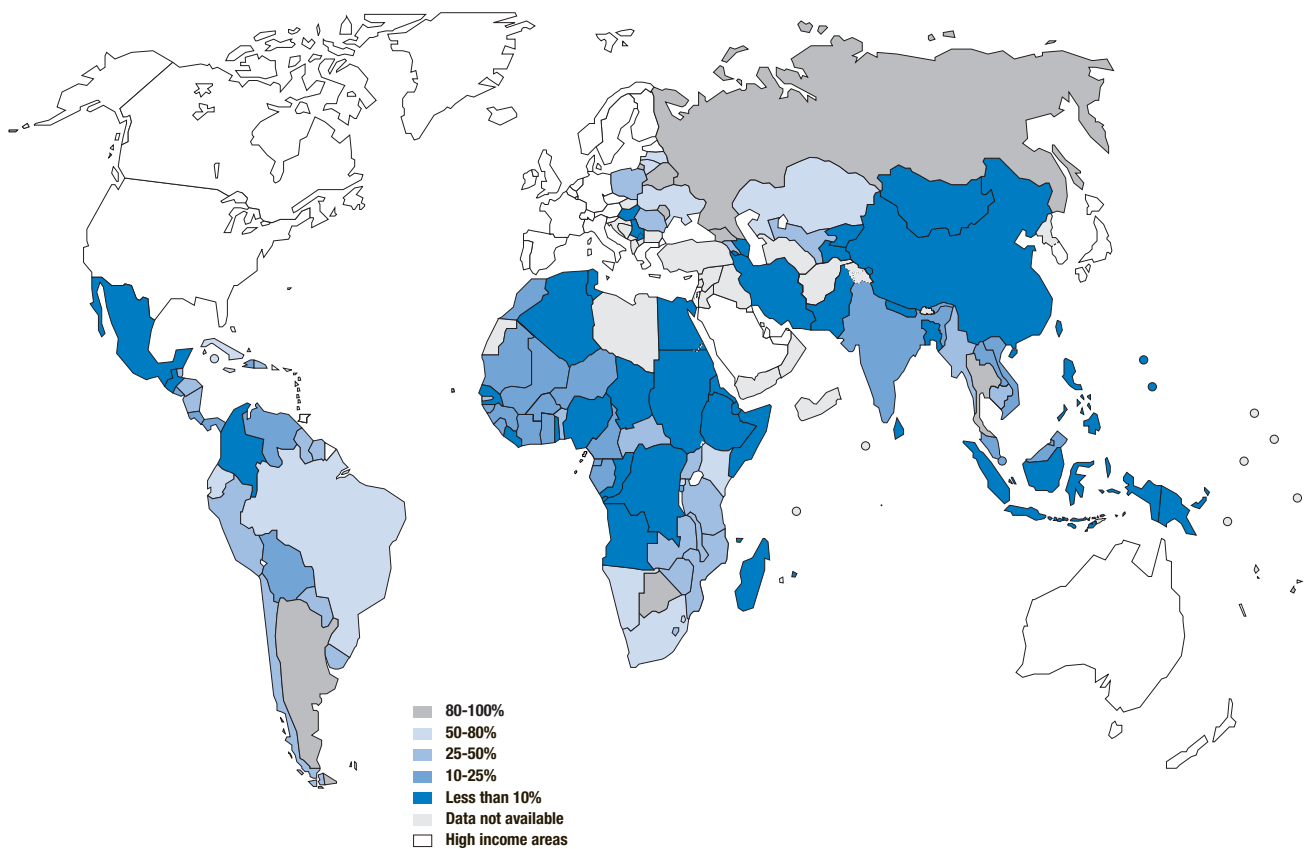
A pregnant woman with HIV must be assessed to determine whether she is eligible to receive antiretroviral therapy. When antiretroviral therapy is not indicated for her own health, pregnant women with HIV should receive combination antiretroviral prophylaxis to prevent HIV transmission to their infants (31). Both antiretroviral prophylaxis for mothers not eligible to receive antiretroviral therapy for their own health and antiretroviral therapy for those who are eligible are effective at reducing the vertical transmission of HIV.

HIV-exposed infants also require antiretroviral prophylaxis as soon after delivery as possible. Combination regimens result in the greatest reduction of transmission and are always required

if the mother did not receive antiretroviral prophylaxis. Research is ongoing on the role of extended antiretroviral prophylaxis among infants who continue to be at risk of acquiring HIV through breastfeeding and in the context of greater access to maternal antiretroviral therapy.

About 33% of pregnant women living with HIV received antiretrovirals to prevent mother-to-child transmission in 2007 (491 000 of the total estimated 1.5 million pregnant women living with HIV). This represents a noteworthy increase from 23% in 2006, 15% in 2005 and 10% in 2004 (Fig. 2.5). Certain countries have succeeded in dramatically reducing transmission by increasing coverage of interventions to prevent mother-to-child transmission. The estimated mother-to-child transmission declined from 30.5% in 2001 to 11.4% in 2007 in Cambodia and from 30.5% in 2001 to 8.9% in 2007 in Rwanda.³

Fig. 2.5. Coverage of antiretrovirals to prevent mother-to-child transmission of HIV in low- and middle-income countries, 2007



³ Estimates based on country data, UNAIDS/WHO estimates and projections using Spectrum software.

Table 2.2 provides recent regional estimates of the number of women who need antiretrovirals (both antiretroviral prophylaxis and antiretroviral therapy) to prevent mother-to-child transmission in 2007.

Sub-Saharan Africa, which accounts for nearly 90% of all pregnant women living with HIV in low- and middle-income countries, has made the most progress in the past three years. In western and central Africa, the number of pregnant women with HIV who received antiretrovirals to prevent mother-to-child transmission increased 5.5-fold between 2004 and 2007 (Fig. 2.6). However, despite this increase, only 11% [range 10–13%] of pregnant women who needed antiretrovirals had access in 2007 in this subregion. Coverage with antiretrovirals in eastern and southern Africa, which includes 12 of the 20 countries with the highest numbers of pregnant women with HIV, increased four-fold, reaching 403 000 women in 2007 versus 106 700 women in 2004 (coverage of 43% [range 40–47%]).

The coverage of antiretrovirals for preventing mother-to-child transmission varies among the 10 countries that have the largest number of pregnant women with HIV. In South Africa, home to more than 200 000 pregnant women living with HIV in 2007, the coverage of antiretrovirals for preventing mother-to-child transmission increased from 15% in 2004 to 57% in 2007 (Fig. 2.7). Coverage increased from 3% to 46% in Mozambique and from 25% to 69% in Kenya during the same time period.

Coverage also increased substantially in other countries between 2004 and 2007, including Cambodia (7% in 2004 to 32% in 2007), Central African Republic (2% to 34%), Ghana (1% to 21%), Guyana (21% to 43% in 2006), India (5% to 14%) and Thailand (48% to 92%).

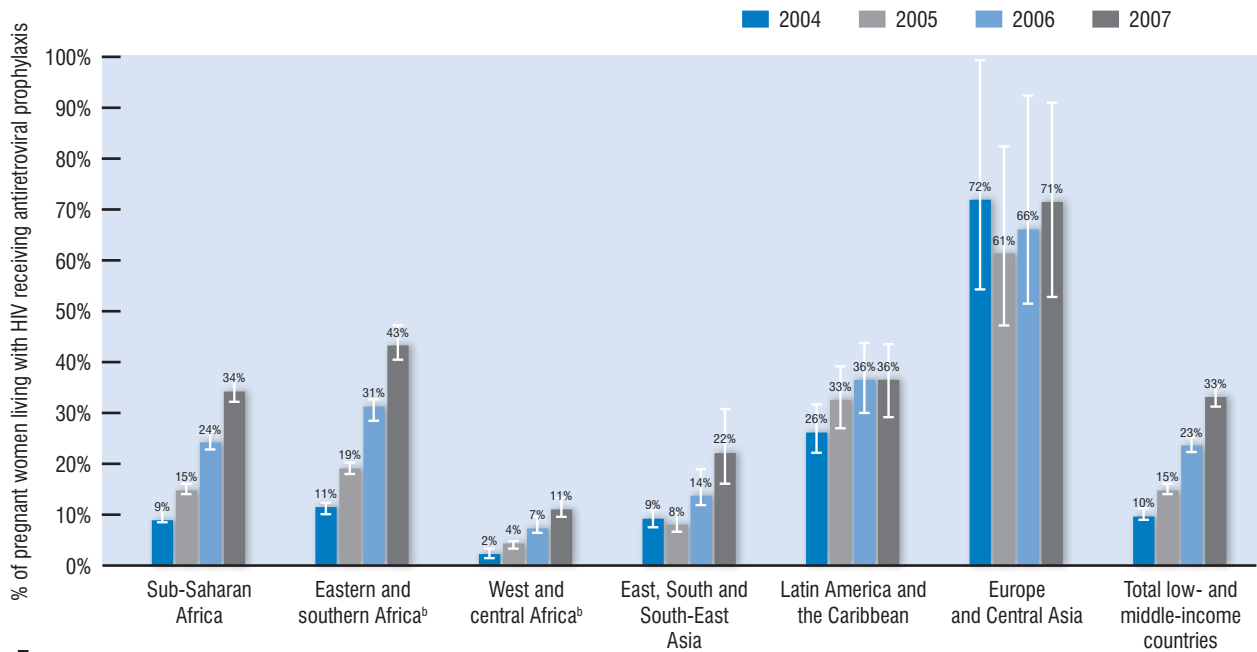
Table 2.2. Estimated number of pregnant woman with HIV receiving and needing antiretrovirals for preventing mother-to-child transmission and percentage coverage in low- and middle-income countries according to region, 2007

Geographical region	Number of pregnant women with HIV receiving antiretrovirals for preventing mother-to-child transmission, 2007	Estimated number of pregnant women living with HIV needing antiretrovirals for preventing mother-to-child transmission, 2007 (range)	Estimated percentage of pregnant women living with HIV receiving antiretrovirals for preventing mother-to-child transmission, 2007 (range) ^a
Sub-Saharan Africa	446 000	1 300 000 [1 200 000–1 400 000]	34% [32–37%]
Eastern and southern Africa	403 000	930 000 [860 000–1 000 000]	43% [40–47%]
West and central Africa	43 000	390 000 [320 000–450 000]	11% [10–13%]
Latin America and the Caribbean	13 000	36 000 [30 000–45 000]	36% [29–43%]
Latin America	11 000	29 000 [23 000–37 000]	38% [30–48%]
Caribbean	2 300	7 200 [6 100–8 500]	32% [27–38%]
Europe and Central Asia	10 000	14 000 [11 000–19 000]	71% [53–91%]
Middle East and North Africa	<100	19 000 [13 000–27 000]	<1% [<1%]
East, South and South-East Asia	22 000	100 000 [72 000–140 000]	22% [16–31%]
All low- and middle-income countries	491 000	1 500 000 [1 400 000–1 600 000]	33% [31–35%]

Note: some numbers do not add up due to rounding. The annex explanatory notes describe the methods used. This table shows the UNAIDS geographical regions. Annex 2 shows the breakdowns by UNICEF and WHO regions.

a. The coverage estimate is based on the estimated numbers of pregnant women living with HIV receiving and needing antiretrovirals.

Fig. 2.6. Percentage of pregnant women with HIV receiving antiretrovirals for preventing mother-to-child transmission of HIV in low- and middle-income countries, 2004–2007^a



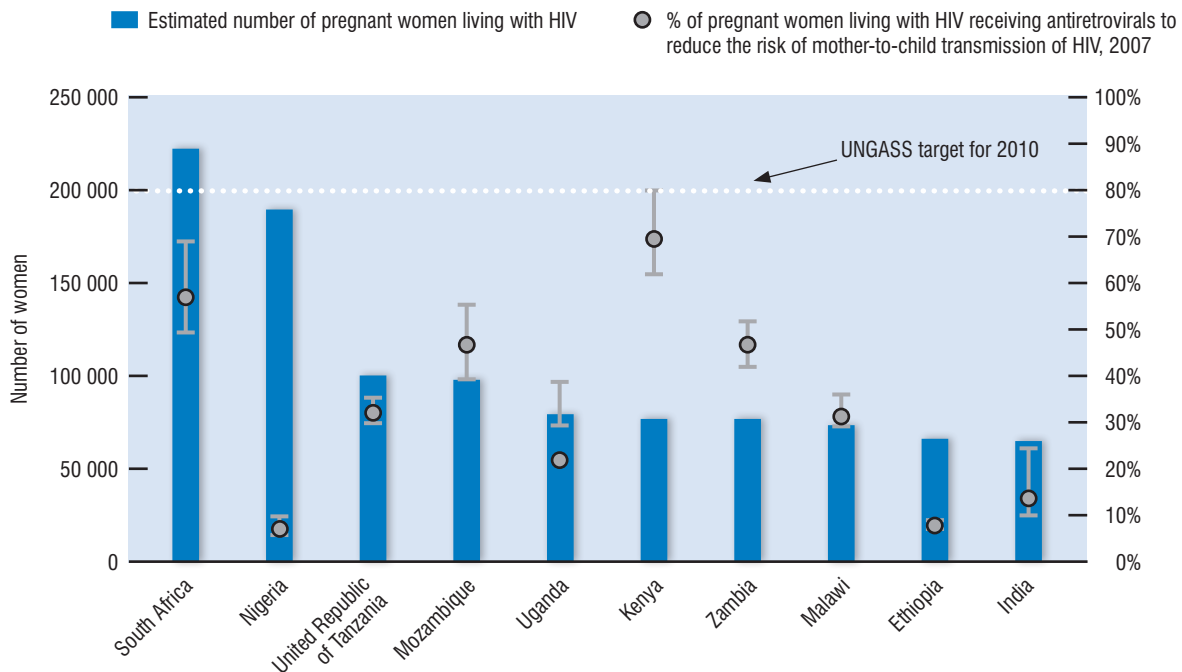
I The bar indicates the uncertainty range around the estimate.

a For an explanation of the methods used, see explanatory notes to Annex 1.

b Values for East and Southern Africa and West and Central Africa are included in sub-Saharan Africa.

Note: this graph shows the UNAIDS geographical regions. See pages 44-48 for complete country classification listing.

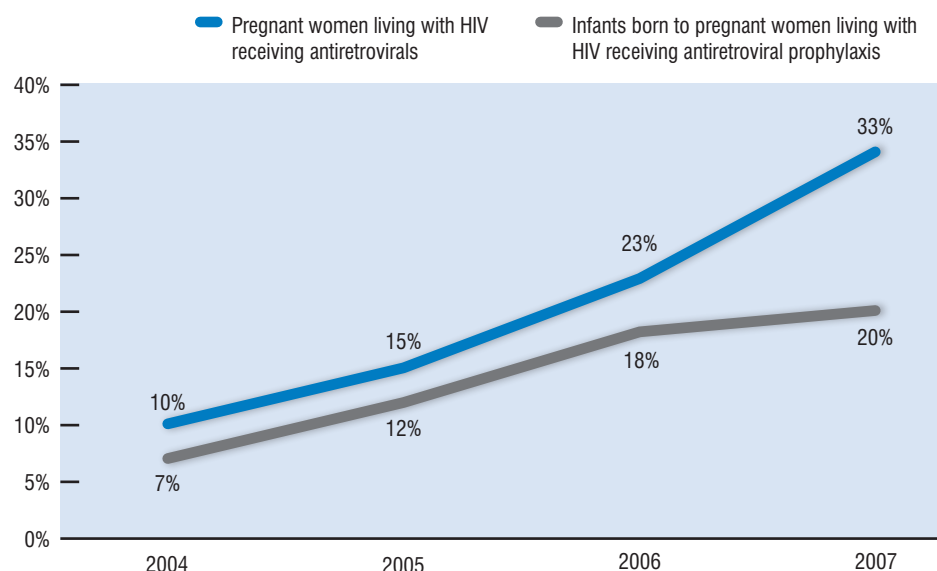
Fig. 2.7. Percentage of pregnant women living with HIV receiving antiretrovirals for preventing mother-to-child transmission of HIV in the 10 countries with the highest estimated number of pregnant women living with HIV, 2007



UNGASS: United Nations General Assembly Special Session on HIV/AIDS in 2001

I The bar indicates the uncertainty range around the estimate.

Fig. 2.8. Pregnant women living with HIV and infants born to them who received antiretrovirals to reduce mother-to-child transmission, 2004–2007



Box 2.2. Involving male partners, families and communities

Stigma, domestic violence and lack of male involvement in antenatal care often discourage women from accessing services to prevent mother-to-child transmission (32–35). Providing support to these women, including from their partners, families and communities, should be key components of all programmes for preventing mother-to-child transmission.

Several pilot projects have demonstrated improved outcomes when male partners are encouraged to take an HIV test and are involved in counselling and care for women (36). In a health centre in Mwanza, United Republic of Tanzania, the involvement of male partners in counselling increased ten-fold and male partner testing by 30% within the first month of introducing a strategy to issue formal invitations to male partners. In Cambodia, women attending a “mother class” that offered testing and counselling for preventing mother-to-child transmission were four times more likely to accept testing if their partners also attended the class (37).

A community-based mothers2mothers (m2m) programme was introduced in Western Cape, South Africa in 2001 to provide information, psychosocial mentoring and emotional support to pregnant and postpartum women with HIV and increase their utilization of health services (38). By 2007, there were more than 100 m2m sites throughout South Africa. m2m employs new mothers as “mentor mothers” to support other women living with HIV through one-on-one and group support sessions in antenatal, maternal, newborn and child health care settings. Although it does not provide HIV testing or other health services, m2m helps to increase uptake of services by reducing stigma, misinformation and cultural barriers to access.

A recent study found that m2m programmes have resulted in increased access to antiretrovirals to prevent mother-to-child transmission for women and infants, safer infant feeding practices, increased numbers of women receiving a CD4 test and improved use of family planning post-pregnancy (39). Drawing on this successful model, pilot sites have also been established or are planned in nine other countries in eastern and southern Africa (38).

However, progress has been slower in some large countries such as the Democratic Republic of the Congo, Ethiopia and Nigeria, where the coverage of antiretrovirals for preventing mother-to-child transmission remained below 10% in 2007. Urgent efforts are needed to scale up access to services in these countries to meet the target adopted by the United Nations General Assembly Special Session on HIV/AIDS, which includes 80% coverage of antiretrovirals to reduce mother-to-child transmission.

The coverage of antiretroviral prophylaxis among infants born to women with HIV follows a similar trend, increasing from 7% in 2004 to 12% in 2005, 18% in 2006 and 20% by the end of 2007 (Fig 2.8). The widening gap between coverage of antiretrovirals for mothers and for infants raises concern and needs to be addressed (Box 2.2).

2.4.3 Antiretroviral regimens

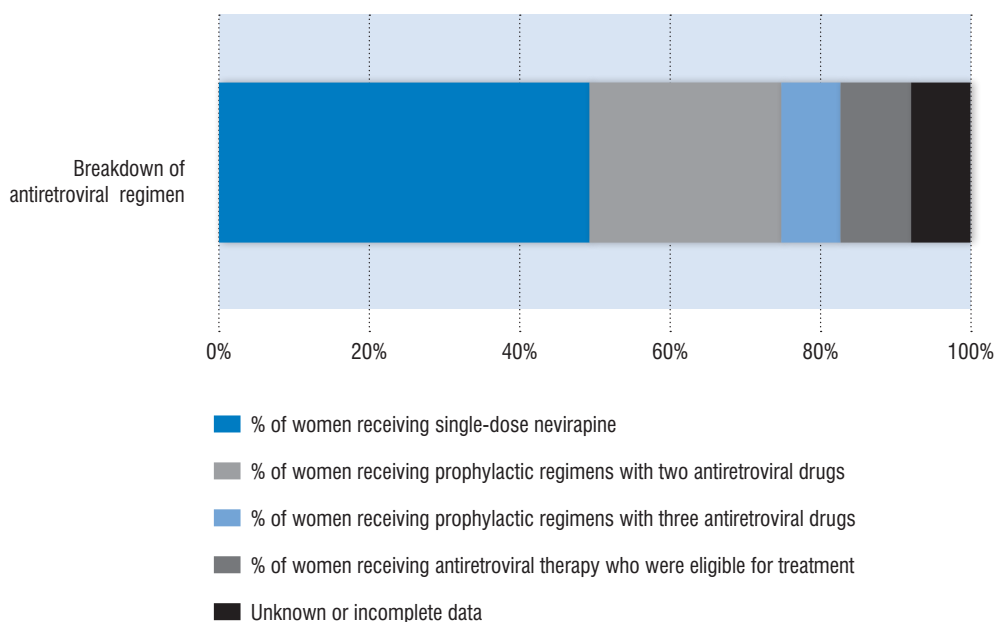
The effectiveness of antiretrovirals in preventing mother-to-child transmission varies with the type and combination used and

the duration of treatment. Simple, short-course antiretroviral drug regimens have been proven to reduce mother-to-child transmission, but combination regimens (such as zidovudine and single-dose nevirapine) taken for longer periods of time are more effective (40,41).

WHO guidelines (30) recommend the use of more efficacious prophylactic antiretroviral regimens for preventing mother-to-child transmission. They highlight the need to increase efforts to ensure that women who are eligible for antiretroviral therapy have access to treatment based on the scientific and programmatic rationale regarding the effectiveness and safety of various regimens (30).

In 2007, 60 countries⁴ provided disaggregated data on antiretroviral regimens used to prevent mother-to-child transmission. These data reveal that 49% of women (119 400 of 242 000) received single-dose nevirapine in 2007, 26% (62 000) received a regimen using a combination of two antiretroviral drugs and 8% (18 800) received a regimen using a combination of three antiretroviral drugs (Fig. 2.9).

Fig. 2.9. Distribution of antiretroviral regimens received by pregnant women living with HIV in 60 countries with disaggregated data, 2007



⁴ These 60 countries account for about 60% (911 500) of the 1.5 million estimated pregnant women living with HIV in low- and middle-income countries. The regional distribution of the 60 countries are: East, South and South-East Asia, 9 countries; Eastern Europe and Central Asia, 12 countries; Latin America and the Caribbean, 8 countries; North Africa and the Middle East, 5 countries; and sub-Saharan Africa, 26 countries.

In sub-Saharan Africa, more than half the reporting countries (26 of 44 countries) provided disaggregated data on the use of antiretroviral regimens in 2007. Among these countries, 50% of the total number of pregnant women with HIV receiving antiretrovirals for preventing mother-to-child transmission received single-dose nevirapine, 27% received a prophylactic regimen using a combination of two antiretroviral drugs, 6% received a highly active regimen for prophylaxis to prevent mother-to-child transmission using a combination of three antiretroviral drugs and 9% received antiretroviral therapy for their own health (for pregnant women living with HIV eligible for treatment).

Between 2006 and 2007, all regions reported a decrease in the number of countries using single-dose nevirapine as the most common antiretroviral regimen for preventing mother-to-child transmission. An increasing number of countries are shifting towards a national policy of providing more effective antiretroviral prophylactic regimens to pregnant women living with HIV. However, monitoring and evaluation systems in many countries cannot yet capture these data. As a result, accurate global data on the proportion of women accessing more efficacious regimens are currently not available.

2.4.4 Infant feeding

HIV can be transmitted from a mother to her child through breastfeeding. Without intervention, breastfeeding carries an additional transmission risk of about 5–20%, depending essentially on the disease status of the mother (measured by viral load and CD4 count), the duration and mode of breastfeeding and the existence of mastitis and breast abscess.

However, not breastfeeding carries important health risks to the infant, such as diarrhoeal disease, respiratory illness, malnutrition and increased mortality, especially if access to clean water is not assured.

In 2006, a technical consultation on HIV and infant feeding organized by United Nations agencies reviewed the most recent scientific evidence and programmatic experience in this area (42). WHO and UNICEF have also developed a package of guidance and tools in collaboration with partners (43) to assist countries in designing and implementing policies and guidelines on infant feeding when the mother has HIV (Box 2.3). Many countries now have such policies in place.

Box 2.3. Recommendations on HIV and infant feeding

The key recommendations on HIV and infant feeding indicate the following.

- The most appropriate infant feeding option for a mother with HIV depends on her individual circumstances, including her health status and the local situation, but should take into consideration available health services and the counselling and support she is likely to receive.
- Exclusive breastfeeding is recommended for infants of mothers living with HIV for the first six months of life unless replacement feeding is acceptable, feasible, affordable, sustainable and safe for them and their infants before that time.
- When replacement feeding is acceptable, feasible, affordable, sustainable and safe, avoidance of all breastfeeding by mothers living with HIV is recommended.

A recent study in Côte d'Ivoire where antiretroviral prophylaxis and infant formula free of charge were offered to pregnant women living with HIV (44) provides evidence to support these recommendations. In this study and similar settings, the combined risk of HIV infection and death by 18 months of age among children who were breastfed for 3–6 months was similar to that among children who were formula-fed from birth (45). Exclusive breastfeeding has also been shown to carry a lower risk of HIV transmission than mixed feeding (breastfeeding as well as feeding the infant other fluids or foods during the first six months of life) (46). A recent study of an outbreak of infant diarrhoea in Botswana also found significantly higher rates of mortality among non-breastfed infants than among those who were breastfed, regardless of HIV status (47).

Since many women living with HIV are unaware of their HIV status, promoting exclusive breastfeeding for the general population will probably lead to lower rates of HIV transmission among women living with HIV who do not know their HIV status (48). The rates of exclusive breastfeeding among infants younger than six months of age have been slowly increasing worldwide, up by about 5–6 percentage points in the last 15 years to 39% as of 2005 (49). Some countries such as Cambodia have had great success in increasing exclusive breastfeeding rates, from about 11% in 2000 to about 60% in 2005 (50).

Outside research studies, few countries routinely report the infant feeding practices of women with HIV. Efforts are undergoing to implement a standardized indicator to monitor infant feeding practices among infants born to mothers with HIV. In Botswana's national programme, where formula is provided free of charge to all women with HIV, 97% of pregnant women living with HIV reportedly choose formula-feeding (51). This proportion is lower in places that do not offer formula free of charge or where counsellors are able to fully explain the benefits and risks of different infant feeding options to mothers and support them in making a decision appropriate to their circumstances. In a research study in South Africa in which high-quality infant feeding counselling was made available, 9% of women living with HIV initially chose formula-feeding (52).

Increasing evidence also indicates that giving women with HIV antiretroviral therapy can reduce the risk of transmitting HIV to their infants through breastfeeding. The benefits of this approach for women who need antiretroviral therapy for their own health are clear. However, new data are awaited on the use of this strategy for breastfeeding women not yet eligible for treatment, for example, data on when antiretroviral therapy can be safely discontinued, and on safety for the infant.

In addition to infant feeding choices in the first months of life, countries also face the challenge of supporting mothers to ensure optimal feeding of their infants after six months of age, when exclusive breastfeeding or formula-feeding alone is no longer adequate. Several countries are pilot-testing different approaches for feeding non-breastfed children of women living with HIV, including providing enriched foods. WHO has developed guidance on feeding infants and children 6–24 months of age to assist countries in developing their policies in this area (53).

2.5 Treatment, care and support for women living with HIV and their children

The fourth element of the strategy for preventing mother-to-child transmission is providing treatment, care and support to mothers living with HIV, their children and their families. Until recently, the primary focus of programmes for preventing mother-to-child transmission had been to increase access to antiretrovirals to prevent transmission. Less emphasis was placed on ensuring that women in need have access to treatment services and that infants born to mothers living with HIV receive appropriate interventions including early diagnosis, co-trimoxazole preventive treatment and antiretroviral

therapy. With the rapidly expanding availability of HIV care and treatment, strengthening links between services for preventing mother-to-child transmission and services providing HIV care and treatment is essential.

2.5.1 Increasing access to antiretroviral therapy for pregnant women

Treatment for pregnant women who are eligible to receive antiretroviral therapy is vital to reducing mother-to-child transmission and morbidity and mortality among women. However, many pregnant women living with HIV miss the opportunity to have timely access to antiretroviral therapy because health care workers are unable to appropriately assess their need for antiretroviral therapy or due to lack of access to such services.

Data reported by national governments indicate that only about 12% of pregnant women living with HIV identified during antenatal care were assessed for their eligibility to receive antiretroviral therapy in 2007, either clinically through an assessment of clinical symptoms, or immunologically by determining their CD4 cell count.

Relying on clinical signs and symptoms alone can mean that some women with severe immunosuppression but without evident disease (WHO clinical stage 3 or stage 4) may not be identified as needing antiretroviral therapy. CD4 testing should be made more available to women as part of antenatal, delivery and postpartum care by increasing the availability of machines at the district level and ensuring that pregnant women are included in CD4 monitoring (Table 2.3).

Table 2.3. Availability of CD4 testing in antenatal care facilities, selected countries, 2007

Country	% of facilities providing antenatal care that provide CD4 testing on site or have systems for collection and transport
Botswana	100
Central African Republic	2
Haiti	55
Lesotho	10
Malawi	66
Papua New Guinea	12
Swaziland	31
Zambia	18
Zimbabwe	5

Data from some countries confirm that, although overall access to antiretroviral therapy among women is higher than or equal to that among men, pregnant women living with HIV have poor access to antiretroviral therapy for their own health. In Malawi, among 9150 women who started antiretroviral therapy in the last quarter of 2007 in the public sector, only 343 (4%) had been referred from the programme to prevent mother-to-child transmission (54).

Ensuring access to antiretroviral therapy for pregnant women also contributes to child survival. A recent study in Uganda observed an 81% reduction in mortality among uninfected children over a 31-month period if their HIV-infected parents were receiving antiretroviral therapy and co-trimoxazole preventive therapy (55).

Testing pregnant women for HIV hence not only provides an entry point for them to receive interventions to prevent transmission to the child but also facilitates the enrolment of women, their families and future infants into longitudinal HIV prevention, care and treatment. Linking HIV services to maternal, newborn and child health services is necessary to ensure that women identified as living with HIV who need treatment can receive the necessary interventions to maximize their health and reduce transmission to their infants and partners.

2.5.2 Diagnosing HIV among infants

Without care and treatment, about one third of children living with HIV will die in their first year of life and almost 50% by the second year of life. Early infant diagnosis of HIV among HIV-exposed children and adequate follow-up are essential to effectively identify infants living with HIV and ensure the timely initiation of care and treatment.

However, standard HIV antibody testing cannot identify infected infants in their first year of life, as it also detects maternal HIV antibodies that are transferred to the baby during pregnancy

(and subsequently decline slowly in the first year of life). More demanding testing methods that rely on detecting HIV virus, otherwise called virological tests, are required for diagnosing young infants. As infants with HIV frequently progress to severe disease or death without prior warning symptoms or signs, testing needs to be recommended for all HIV-exposed infants to detect HIV infection.

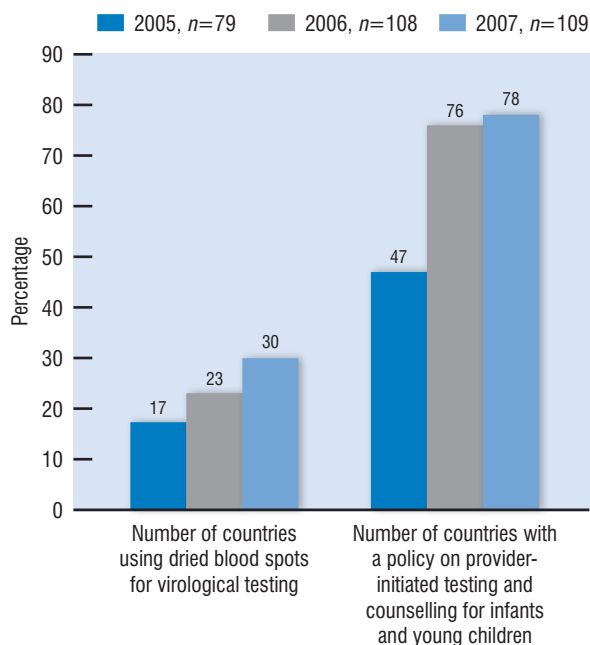
Where virological testing is unavailable, infants still need to be closely monitored, and clinical algorithms and HIV antibody and CD4 tests are needed to identify infected infants and children as early as possible (56). HIV antibody testing can be used to identify HIV-exposed infants and, combined with close follow-up, may allow early recognition of infants with HIV and their referral for assessing the possible need for HIV treatment.

In 2007, 77 countries (71% of all reporting low- and middle-income countries) provided data on early testing of infants and young children. Of the 715 000 infants born to women living with HIV in 2007 in these countries, only 8% (54 900) were tested within the first two months of birth.

Virological testing detects HIV DNA or RNA. HIV DNA testing (and HIV antibody testing) can also be reliably performed on specimens collected onto filter paper (dried blood spots) and sent to laboratories with capacity for testing. The use of dried blood spots only requires a few drops of blood from an infant. Once specimens are collected, they can be easily stored and transferred without cold-chain systems to centralized testing locations for analysis. The use of dried blood spots enables blood samples to be collected in remote locations and allows countries with a limited number of specialized laboratories to expand access to virological testing.

Scaling up the use of dried blood spots has resulted in a significant increase in access to virological testing. The number of countries with virological testing services increased from 42 in 2005 to 77 in 2007, including 31 countries in sub-Saharan Africa (Fig. 2.10).

Fig. 2.10. Number of low- and middle-income countries with virological testing and policies for provider-initiated testing and counselling for infants and young children, 2005–2007



n: number of reporting countries

Box 2.4. Documenting the mother’s HIV status on the child health card in Zimbabwe

In Zimbabwe, the mother’s HIV status is documented on the child health card so that health workers seeing the child at his or her six-week visit can provide appropriate care to the child. This includes referral for virological testing to determine whether the child has been infected with HIV and requires referral to treatment services.

MINISTRY OF HEALTH
CHILD HEALTH CARD
ZIMBABWE

GOOD INFANT FEEDING PRACTICE
Give only breast milk for the first 6 months. Introduce solids and liquids from 6 months. Continue breast feeding up to 24 months or beyond unless counseled otherwise by a health worker.

KUDYA KWAKANAKA KWEMWANA
Ipai mwana mukaka wezamu chete pamwedzi mitanhatu yekutanga. Ipai kumwe kuya kana kunwa kubva pamwedzi mitanhatu. Rambai muchiyamwisa kusvika pamakore maviri kana kudarika kunze kwekati makaturirwa mukadzivisa neve utaro.

MUNYISA OKUNGABANGELI INGOZI
Munyisa ingane yakho okwenyanga eziyisithupa zakugala. Qala ukuyipha okunye okudiwayo lo kunathwayo uma silenyanga eziyisithupa. Chubeka ukumunyisa ingane yakho ize ifike iminyaka emibili loba ukwedula, ngaphandle uma ucetshisive ngabezempita kahle ukuba ungamunyisi.

NAME OF CHILD: _____
SURNAME OF CHILD: _____
SEX: [] DATE OF BIRTH: [] [] [] [] [] [] [] [] [] []
NAME OF MOTHER: _____
PHYSICAL ADDRESS: _____
PLACE OF BIRTH: _____
HEALTH CENTRE: _____

Even where virological testing is available through dried blood spots, transport time and logistics can still pose barriers to providing timely results. In addition, results may arrive at the facility but the infant may not be referred to HIV clinical services in a timely manner.

Maternal, newborn and child health clinics, where a child often receives his or her first set of vaccinations, provide important opportunities to identify and test infants and children who are known to be exposed to HIV. Several countries, including Cameroon, Malawi, Rwanda, Swaziland, United Republic of Tanzania and Zimbabwe (Box 2.4), have begun to document the mother’s HIV status on the mother’s and/or child’s health card to facilitate the identification of HIV-exposed infants and provide appropriate diagnostic and follow-up services.

However, most children are entering HIV care and treatment programmes for children at an older age after being identified in acute and chronic care facilities rather than as a follow-up of services for preventing mother-to-child transmission. HIV-exposed infants need to be followed up better as part of the package of services to prevent mother-to-child transmission to identify HIV-infected infants. In countries such as Malawi and Zambia, provider-initiated testing and counselling of sick children has helped to substantially increase the numbers of HIV-infected infants and children who are detected. WHO and UNICEF are working with partners to develop operational guidance on provider-initiated testing and counselling for children.

2.5.3 Co-trimoxazole prophylaxis

Co-trimoxazole is a highly efficacious, affordable, cost-effective and widely available antibiotic that has been shown to significantly reduce morbidity and mortality among infants and children who are living with or are exposed to HIV. It has been part of the standard of care for preventing and treating *Pneumocystis jirovecii* infection since the early 1990s (57). In 2006, WHO released guidance on the use of co-trimoxazole preventive therapy for children, adolescents and adults (58), recommending that all HIV-exposed infants be treated with co-trimoxazole until they are no longer at risk of infection through breastfeeding and an HIV-negative status has been established. Most *Pneumocystis* infections occur among infants younger than six months old (59), which reinforces the need for timely provision of co-trimoxazole prophylaxis.

The limited data available on the provision of co-trimoxazole prophylaxis suggest that, although many national policies and recommendations now include co-trimoxazole prophylaxis, its implementation is poor. In 2007, less than 58 000 (4%) of the 1.5 million children born to pregnant women with HIV initiated co-trimoxazole by two months of age. Reasons for low coverage include the lack of national-level guidance to health care providers on co-trimoxazole prophylaxis, the lack of opportunities to document its provision in registers or child health cards and erratic supply and frequent stock-outs of drugs.

Scaling up co-trimoxazole prophylaxis for infants and children is essential and can provide one of the most forceful reductions in morbidity and mortality among children caused by HIV simply and at low cost.

2.5.4 Antiretroviral therapy for children

HIV infection that infants acquire during pregnancy or around the time of delivery appears to progress very rapidly. In addition, a recent study indicated that early treatment of asymptomatic infants with HIV dramatically reduces the mortality rate (60). Children living with HIV in low- and middle-income countries have been observed to have treatment outcomes comparable to those in adult population groups, with similar patterns of improved survival associated with initiating antiretroviral therapy at earlier stages of disease progression (61). Studies also confirm that children in high-income, medium-income and low-income countries all respond well to treatment.

Substantial progress has been made in scaling-up antiretroviral therapy for children during the past two years, facilitated by several factors (Box 2.5). These include integrating HIV care

Box 2.5. Revised recommendations on initiating antiretroviral therapy among children

Recent studies in resource-limited settings confirm that disease progression and death occur very rapidly in the first few months of life among infants acquiring HIV at or around delivery. More than 80% of surviving infants develop the eligibility criteria for starting antiretroviral therapy within the first six months of life (60,62). A randomized clinical trial conducted in South Africa observed a 75% reduction in mortality among infants who started antiretroviral therapy as soon as they were diagnosed with HIV compared with infants who started treatment based on immunological or clinical criteria. Other research and observational data also suggest that providing antiretroviral therapy early in infancy avoids death and disease progression.

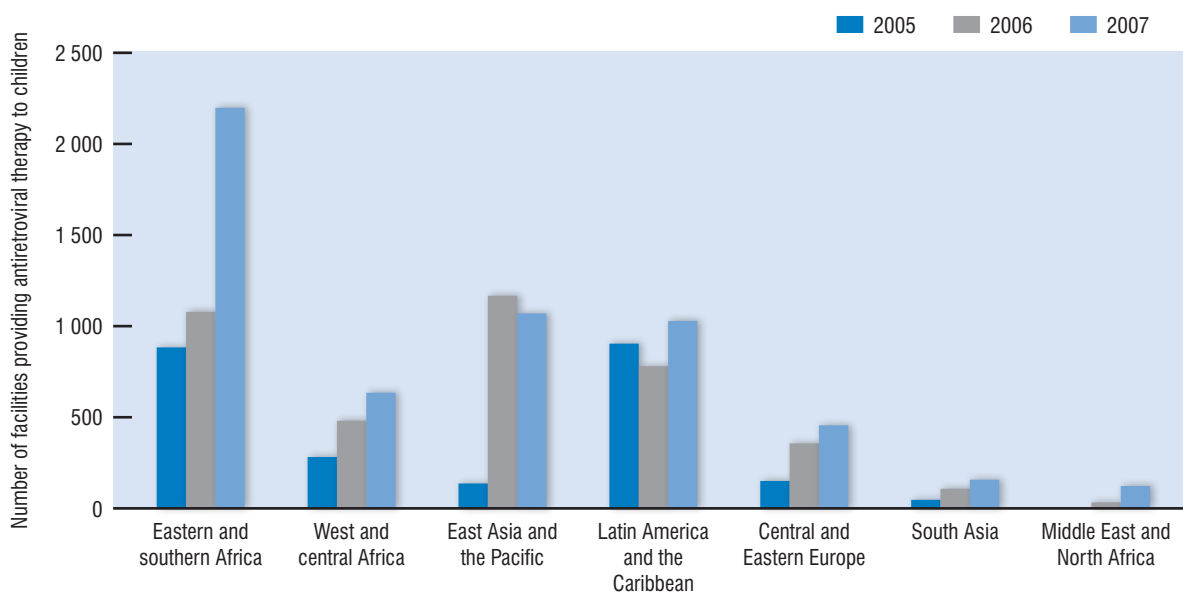
Previously, recommendations to initiate antiretroviral therapy among children were based on an immunological and clinical assessment before initiating treatment, and treatment was recommended only for the most severely affected children. In April 2007, WHO convened a guideline review meeting to examine the new evidence and consider the need to revise the existing recommendations. Experts recommended that revised criteria be developed for initiating antiretroviral therapy among infants. WHO therefore now recommends that all infants younger than one year of age with confirmed HIV infection should start antiretroviral therapy, irrespective of clinical or immunological stage.

This revised recommendation will have implications for national HIV programmes and for the estimation of HIV infection among infants and children. A special meeting of the UNAIDS Reference Group on Estimates, Modelling and Projections was held in July 2008 to review the methods and assumptions underpinning the estimation of the burden of HIV among children to produce better estimates of the number of infants and children who need antiretroviral therapy.

This report only provides data on the number of children receiving antiretroviral therapy. Revised estimates of the antiretroviral therapy need among children will be used to assess the coverage of antiretroviral therapy among children in the next report.

and treatment for children into both existing antiretroviral therapy sites focused on adult care and into maternal, newborn and child health services; reducing the prices of antiretroviral formulations for children; approving and prequalifying fixed-dose antiretroviral combinations for children by the United States Food and Drug Administration and the WHO Prequalification Programme; and increasing advocacy for improved access to HIV care and treatment for children.

Fig. 2.11. Number of facilities providing antiretroviral therapy to children, 2005–2007

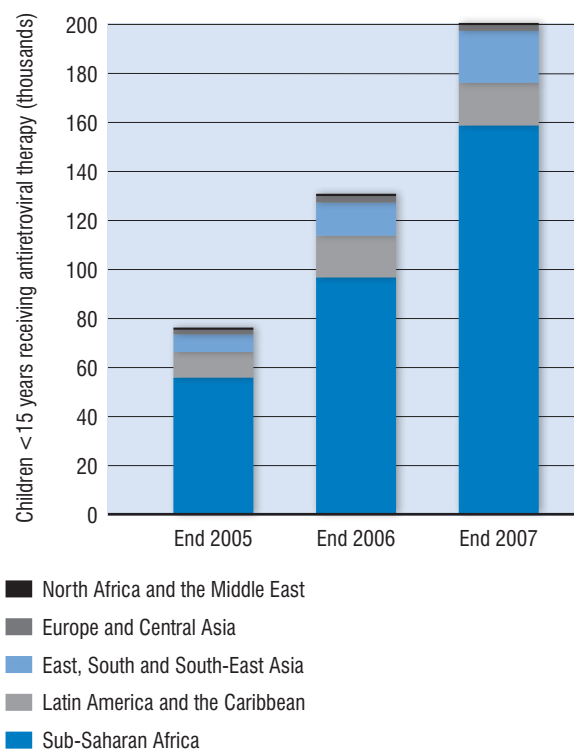


Note: this graph shows the UNICEF geographical regions. See pages 44-48 for complete country classification listing.

A total of 5660 facilities were reported to be providing antiretroviral therapy to children in 2007, more than twice the 2400 facilities in 2005 (Fig. 2.11). The number of facilities providing antiretroviral therapy to children in eastern and southern Africa has increased notably. Increased early infant diagnosis and case-finding and simplified care management for children have contributed to the expansion in the number of sites providing antiretroviral therapy to children.

As of December 2007, about 198 000 children globally were receiving antiretroviral therapy, up from 127 300 in 2006 and 75 000 in 2005. This represents a 1.6-fold increase between 2006 and 2007 and a 2.6-fold increase between 2005 and 2007 (Fig. 2.12).

Fig. 2.12. Number of children receiving antiretroviral therapy in low- and middle-income countries, 2005–2007

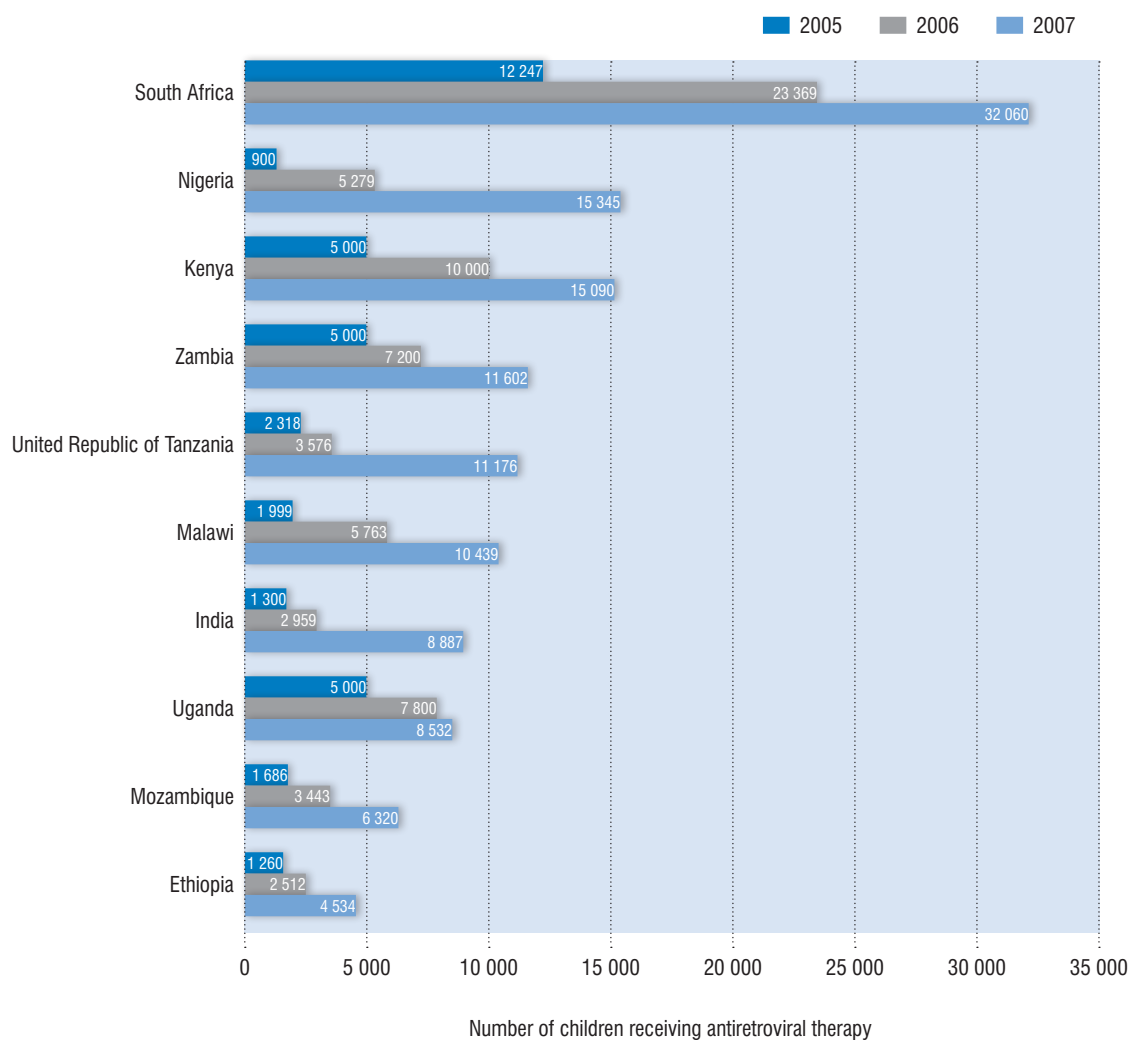


Note: this graph shows the UNAIDS geographical regions. See pages 44-48 for complete country classification listing.

The vast majority of children living with HIV are in 10 countries that also comprise more than 60% of pregnant women living with HIV. Uptake of antiretroviral therapy in children increased in all 10 countries between 2005 and 2007 (Fig. 2.13). The number of children receiving antiretroviral therapy increased 2.6 times in South Africa, 3 times in Kenya, nearly 4 times in Mozambique and nearly 5 times in Zimbabwe.

However, while tremendous progress has been made towards universal access to antiretroviral therapy for children in many countries, most children living with HIV who need antiretroviral therapy globally are still not receiving treatment, resulting in high rates of mortality among children younger than five years of age directly attributable to HIV. Efforts must continue to expand early infant diagnosis and the provision of treatment and care for children.

Fig. 2.13. Number of children (younger than 15 years) receiving antiretroviral therapy in the 10 countries with the highest estimated number of pregnant women living with HIV, 2005–2007



3. TOWARDS UNIVERSAL ACCESS: THE WAY FORWARD

Overall, progress in scaling up the health sector response to meet universal access targets for HIV prevention, treatment, care and support has accelerated. Key health sector interventions such as HIV testing and counselling for pregnant women and their infants at maternal, newborn and child health sites, the provision of antiretrovirals for preventing mother-to-child transmission and antiretroviral therapy for children living with HIV are increasingly available and accessible. Stronger national commitment, financial investment and the scale-up and move towards greater decentralization of HIV services for women and children have contributed to this progress.

Nevertheless, even at the current pace of scale-up, few countries are on course to meet universal access targets by 2010 or those laid out in the Millennium Development Goals by 2015. To achieve these goals, countries and partners must focus on the following priority areas in the health sector.

1. Strengthening links with maternal, child and reproductive health services

Health care settings such as maternal, newborn and child health services and sexual and reproductive health services, including family planning, are vital points of contact in providing HIV services to women and children. Strengthening operational links between these services will enable health care providers to reinforce HIV prevention and care for women and children, including increasing HIV testing and counselling among pregnant women, early HIV diagnosis among children born to mothers living with HIV and antiretroviral therapy, care and support to women and children.

The high rates of antenatal care coverage in many high-prevalence countries provide an excellent opportunity to expand provider-initiated testing and counselling as a part of comprehensive antenatal screening. Health workers need to be adequately trained and supervised to increase the number of pregnant women who know their HIV status and who can benefit from the necessary interventions.

2. Scaling up the provision of efficacious antiretroviral prophylaxis regimens

Countries must continue efforts to scale up access to antiretroviral prophylaxis with regimens that have been shown to be more efficacious than single-dose nevirapine.

3. Ensuring access to antiretroviral therapy for pregnant women living with HIV

Although access to antiretroviral medicines to prevent mother-to-child transmission is increasing, all pregnant women living with HIV must also be assessed for their eligibility to receive antiretroviral therapy for their own health. Identifying and treating women who need antiretroviral therapy has the added value of further reducing transmission to their infants and preventing orphanhood.

4. Expanding infant diagnosis and the availability of care and treatment for children

The availability of virological HIV testing for infants and the timely reporting of results need to be expanded to ensure that more children receive the necessary care and treatment. Recent research and data has observed a 75% reduction in mortality among infants who started antiretroviral therapy as soon as they were diagnosed with HIV compared with infants who started treatment based on immunological or clinical criteria, as was previously recommended. In April 2007, WHO convened a guideline review meeting to examine the new evidence and consider the need to revise the existing recommendations. Experts recommended that revised criteria be developed for initiating antiretroviral therapy among infants. WHO therefore now recommends that all infants younger than one year of age with confirmed HIV infection start antiretroviral therapy, irrespective of clinical or immunological stage (Box 2.5).

Countries must also continue to expand the availability of co-trimoxazole prophylaxis to reduce morbidity and mortality among infants and children living with or exposed to HIV. Further, mothers living with HIV must receive appropriate information and counselling regarding optimal and safe infant feeding practices.

References

1. 2007 AIDS epidemic update. Geneva, UNAIDS/WHO, 2007 (<http://www.unaids.org/en/KnowledgeCentre/HIVData/EpiUpdate/EpiUpdArchive/2007>, accessed 2 July 2008).
2. World health statistics 2008. Geneva, World Health Organization, 2008 (<http://www.who.int/healthinfo/statistics/en>, accessed 2 July 2008).
3. De Cock KM et al. Prevention of mother-to-child HIV transmission in resource-poor countries: translating research into policy and practice. *Journal of the American Medical Association*, 2000, 283:1175–1182.
4. United Nations General Assembly. *Declaration of Commitment on HIV/AIDS*. New York, United Nations, 2001 (<http://www.unaids.org/en/AboutUNAIDS/Goals/UNGASS>, accessed 2 July 2008).
5. United Nations General Assembly. Political Declaration on HIV/AIDS. New York, United Nations, 2006 (United Nations General Assembly document 60/262; <http://www.unaids.org/en/AboutUNAIDS/Goals/UNGASS>, accessed 2 July 2008).
6. United Nations Millennium Development Goals. New York, United Nations, 2001 (<http://www.un.org/millenniumgoals>, accessed 2 July 2008).
7. *Strategic approaches to the prevention of HIV infection in infants: report of a WHO meeting, Morges, Switzerland, 20–22 March 2002*. Geneva, World Health Organization, 2003 (<http://www.who.int/hiv/pub/mtct/pub35/en>, accessed 2 July 2008).
8. WHO and UNICEF with the Interagency Task Team on Prevention of HIV Infection in Pregnant Women, Mothers and their Children. *Guidance on global scale-up of the prevention of mother-to-child transmission of HIV: towards universal access for women, infants and young children and eliminating HIV and AIDS among children*. Geneva, World Health Organization, 2007 (<http://www.who.int/hiv/pub/mtct/pub35/en>, accessed 2 July 2008).
9. UNICEF with the Interagency Task Team on Prevention of HIV Infection in Pregnant Women, Mothers and their Children. *A report card on prevention of mother-to-child transmission of HIV and paediatric HIV care and treatment in low- and middle-income countries: scaling up progress from 2004 to 2005*. New York, UNICEF, 2007 (http://www.unicef.org/aids/index_documents.html, accessed 2 July 2008).
10. UNICEF, UNAIDS, WHO. *Children and AIDS: Second stocktaking report. Actions and progress*. New York, UNICEF, 2008.
11. Demographic and health surveys [web site]. Calverton, MD, MEASURE DHS (<http://www.measuredhs.com>, accessed 2 July 2008).
12. Publications: Reference Group reports [web site]. UNAIDS Reference Group on Estimates, Modelling and Projections (<http://www.epidem.org/publications.htm>, accessed 2 July 2008).
13. Stover J et al. Projecting the demographic impact of AIDS and the number of people in need of treatment: updates to the Spectrum projection package. *Sexually Transmitted Infections*, 2006, 82(Suppl 3):iii45–iii50. An update will be published in *Sexually Transmitted Infections* (in press).
14. United Nations Population Division. *World population prospects, 2006 revisions*. New York, United Nations, 2006.
15. Shetty AK et al. The feasibility of voluntary counselling and HIV testing for pregnant women using community volunteers in Zimbabwe. *International Journal of STD and AIDS*, 2005, 16:755–759.
16. *Reproductive health strategy to accelerate the attainment of international development goals and targets*. Geneva, World Health Organization, 2004 (<http://www.who.int/reproductive-health/publications/strategy.pdf>, accessed 2 July 2008).
17. Westoff CF, Ochoa LH. *Unmet need and the demand for family planning*. Calverton, MD, Demographic and Health Surveys, Institute for Resource Development, Macro International, 1991 (Comparative Studies No. 5).
18. Westoff CF, Bankole A. *Unmet need: 1990–1994*. Calverton, MD, Macro International, 1995 (DHS Comparative Report No. 16).
19. *Reproductive health indicators: guidelines for their generation, interpretation and analysis for global monitoring*. Geneva, World Health Organization, 2006 (http://www.who.int/reproductive-health/publications/rh_indicators/guidelines.pdf, accessed 2 July 2008).
20. Adamchak S et al. Family planning use and unmet need among female ART clients in Ghana. *Linking Reproductive Health, Family Planning, and HIV/AIDS in Africa*, 9–10 October 2006, Addis Ababa, Ethiopia (http://www.jhsph.edu/gatesinstitute/_pdf/policy_practice/FP-HIV/Presentations/Session%202B/Adamchak_et%20al%20v4%20c.pdf, accessed 2 July 2008).
21. Rochat TJ et al. Depression among pregnant rural South African women undergoing HIV testing. *Journal of the American Medical Association*, 2006, 295:1376–1378.

22. Desgrées-du-Loû A et al. Contraceptive use, protected sexual intercourse and incidence of pregnancies among African HIV-infected women. DITRAME ANRS Project, Abidjan 1995–2000. *International Journal of STD and AIDS*, 2002, 13:462–468.
23. *Glion Call to Action on Family Planning and HIV/AIDS in Women and Children, 3–2 July 2004*. Geneva, World Health Organization and New York, United Nations Population Fund, 2004 (<http://www.who.int/reproductive-health/stis/linking.html>, accessed 2 July 2008).
24. Adamchak S, Reynolds H, Wilcher R. *Country assessments: documenting family planning–HIV integration models*. Research Triangle Park, NC, Family Health International, unpublished, 2007.
25. Rutenberg N, Baek C. Field experiences integrating family planning into programs to prevent mother-to-child transmission of HIV. *Studies in Family Planning*, 2005, 36:235–245.
26. *Guidance on provider-initiated HIV testing and counselling in health facilities*. Geneva, World Health Organization and UNAIDS, 2007 (<http://www.who.int/hiv/pub/guidelines/pitc2007/en/index.html>, accessed 2 July 2008).
27. EuroHIV. *Report on the EuroHIV 2006 survey on HIV and AIDS surveillance in the WHO European Region*. Saint-Maurice, Institut de Veille Sanitaire, 2007.
28. United States Centers for Disease Control and Prevention. Introduction of routine HIV testing in prenatal care – Botswana, 2004. *MMWR Morbidity and Mortality Weekly Report*, 2004, 53:1083–1086.
29. Chandisarewa W et al. Routine offer of antenatal HIV testing (“opt-out” approach) to prevent mother-to-child transmission of HIV in urban Zimbabwe. *Bulletin of the World Health Organization*, 2007, 85:821–900.
30. Medley A et al. Rates, barriers and outcome of HIV serostatus disclosure among women in developing countries: implications for prevention of mother-to-child transmission programmes. *Bulletin of the World Health Organization*, 2004, 82:299–307.
31. *Antiretroviral drugs for treating pregnant women and preventing HIV infection in infants: guidelines on care, treatment and support for women living with HIV/AIDS and their children in resource-constrained settings*. Geneva, World Health Organization, 2006 (<http://www.who.int/hiv/pub/mtct/guidelines/en>, accessed 2 July 2008).
32. Kominami M et al. Factors determining prenatal HIV testing for prevention of mother to child transmission in Dar es Salaam, Tanzania. *Pediatrics International*, 2007, 49:286–292.
33. Okonkwo KC et al. An evaluation of awareness: attitudes and beliefs of pregnant Nigerian women toward voluntary counselling and testing for HIV. *AIDS Patient Care and STDs*, 2007, 21:252–260.
34. Homsy J et al. The need for partner consent is a main reason for opting out of routine HIV testing for prevention of mother-to-child transmission in a rural Ugandan hospital. *Journal of Acquired Immune Deficiency Syndromes*, 2007, 44:366–369.
35. Homsy J et al. Routine intrapartum HIV counseling and testing for prevention of mother-to-child transmission of HIV in a rural Ugandan hospital. *Journal of Acquired Immune Deficiency Syndromes*, 2006, 42:149–154.
36. Smart T with contributions from Sherriff L. Getting the most prevention and care out of programmes for the prevention of mother-to-child transmission. *HIV & AIDS Treatment in Practice*, 2006, 70 (<http://www.aidsmap.com/cms1065529.asp>, accessed 2 July 2008).
37. Kakimoto K et al. Influence of the involvement of partners in the mother class with voluntary confidential counselling and testing acceptance for Prevention of Mother to Child Transmission of HIV Programme (PMTCT Programme) in Cambodia. *AIDS Care*, 2007, 19:381–384.
38. *mothers2mothers 2007 annual report*. Cape Town, mothers2mothers, 2007 (<http://www.m2m.org/about-us/download-information.html>, accessed 2 July 2008).
39. Baek C et al. *Key findings from an evaluation of the mothers2mothers program in KwaZulu-Natal, South Africa*. Horizons final report. Washington, DC, Population Council, 2007.
40. Shaffer N et al. Short-course zidovudine for perinatal HIV-1 transmission in Bangkok, Thailand: a randomised controlled trial. Bangkok Collaborative Perinatal HIV transmission Study Group. *Lancet*, 1999, 353:773–780.
41. Guay LA et al. Intrapartum and neonatal single-dose nevirapine compared with zidovudine for prevention of mother-to-child transmission of HIV-1 in Kampala, Uganda: HIVNET 012 randomised trial. *Lancet*, 1999, 354:795–802.
42. WHO/UNICEF/UNFPA/UNAIDS. *HIV and infant feeding update: based on the technical consultation held on behalf of the Interagency Task Team (IATT) on Prevention of HIV Infection in Pregnant Women, Mothers and their Infants, Geneva, 25–27 October 2006*. Geneva, World Health Organization, 2007 (http://www.who.int/child_adolescent_health/documents/9789241595964/en/index.html, accessed 2 July 2008).

43. Nutrition and HIV/AIDS: list of publications [web site]. Geneva, World Health Organization, 2008 (<http://www.who.int/nutrition/publications/hivaids/en/index.html>, accessed 2 July 2008).
44. Leroy V et al. 18-month effectiveness of short-course antiretroviral regimens combined with alternatives to breastfeeding to prevent HIV mother-to-child transmission. *PLoS ONE*, 2008, 3:e1645.
45. Thior I et al. Breastfeeding plus infant zidovudine prophylaxis for 6 months vs formula feeding plus infant zidovudine for 1 month to reduce mother-to-child HIV transmission in Botswana: a randomized trial: the Mashi Study. *Journal of the American Medical Association*, 2006, 296:794–805.
46. Coovadia HM et al. Mother-to-child transmission of HIV infection during exclusive breastfeeding in the first 6 months of life: an intervention cohort study. *Lancet*, 2007, 369:1107–1116.
47. Creek T et al. A large outbreak of diarrhea with high mortality among non-breastfed children in Botswana, 2006 – implications for HIV prevention strategies and child health. *14th Conference on Retroviruses and Opportunistic Infections, Los Angeles, CA, USA, 25–28 February 2007* (<http://www.retroconference.org/2007/Abstracts/30582.htm>, accessed 2 July 2008).
48. Iloff PJ et al. Early exclusive breastfeeding reduces the risk of postnatal HIV transmission and increases HIV-free survival. *AIDS*, 2005, 19:699–708.
49. Van Esterik P, ed. 1990–2005 – *Celebrating the Innocenti Declaration on the Protection, Promotion and Support of Breastfeeding: past achievements, present challenges and the way forward for infant and young child feeding*. Florence, UNICEF Innocenti Research Centre, 2005.
50. WHO Office for the Western Pacific and UNICEF. *Child survival profile: Cambodia*. Manila, WHO Office for the Western Pacific, 2007.
51. *PMTCT joint mission report*. Interagency Task Team on Prevention of Mother-to-Child Transmission of HIV and Paediatric HIV Care, unpublished, 2007.
52. Coovadia HM et al. Mother-to-child transmission of HIV infection during exclusive breastfeeding in the first 6 months of life: an intervention cohort study. *Lancet*, 2007, 369:1107–1116.
53. *Guiding principles for feeding non-breastfed children 6–24 months of age*. Geneva, World Health Organization, 2006 (http://www.who.int/child_adolescent_health/documents/9241593431/en/index.html, accessed 2 July 2008).
54. *Antiretroviral therapy in the public and private sectors in Malawi: results up to 30 December 2007*. Lilongwe, Ministry of Health, Malawi.
55. Mermin J et al. Mortality in HIV-infected Ugandan adults receiving antiretroviral treatment and survival of their HIV-uninfected children: a prospective cohort study. *Lancet*, 2008, 371:752–759.
56. *Antiretroviral therapy of HIV infection in infants and children in resource-limited settings: towards universal access. Recommendations for a public health approach*. Geneva, World Health Organization, 2006 (<http://www.who.int/hiv/pub/guidelines/art/en/index.html>, accessed 2 July 2008).
57. Chintu C et al. Cotrimoxazole as prophylaxis against opportunistic infections in HIV infected Zambian children (CHAP): a double-blind randomized placebo-controlled trial. *Lancet*, 2004, 364:1865–1871.
58. *Guidelines on co-trimoxazole prophylaxis for HIV-related infections among children, adolescents and adults*. Geneva, World Health Organization, 2006 (<http://www.who.int/hiv/pub/guidelines/ctx/en>, accessed 2 July 2008).
59. Maldonado YA, Araneta RG, Hersh AL. Pneumocystis carinii pneumonia prophylaxis and early clinical manifestation of severe perinatal human immunodeficiency virus type 1 infection. Northern California Pediatric HIV Consortium. *Pediatric Infectious Disease Journal*, 1998, 17:398–402.
60. Violari A. Antiretroviral therapy initiated before 12 weeks of age reduces early mortality in young HIV-infected infants: evidence from the Children with HIV Early Antiretroviral Therapy (CHER) Study. *4th IAS Conference on HIV Pathogenesis, Treatment and Prevention, Sydney, Australia, 22–25 July 2007* (<http://www.ias2007.org/abstract.aspx?elementid=200705557>, accessed 2 July 2008).
61. Bolton MC et al. Clinical outcomes and CD4 cell response in children receiving antiretroviral therapy at primary health care facilities in Zambia. *Journal of the American Medical Association*, 2007, 298:1888–1899.
62. Prendergast A et al. Randomized, controlled trial of 3 approaches to management of HIV-infected infants. *15th Conference on Retroviruses and Opportunistic Infections, Boston, USA, 3–6 February 2008* (Abstract 77LLB; <http://www.retroconference.org/2008/Abstracts/33523.htm>, accessed 2 July 2008).

Annex 1. Preventing mother-to-child transmission of HIV and children receiving antiretroviral therapy in low- and middle-income countries, 2007

Low- and middle-income countries ^a	Number of pregnant women living with HIV who received antiretrovirals for preventing mother-to-child transmission ^b	Period	Estimated number of pregnant women living with HIV needing antiretrovirals for preventing mother-to-child transmission based on UNAIDS/WHO methods			Estimated percentage of pregnant women living with HIV who received antiretrovirals for preventing mother-to-child transmission ^c			Estimated number of pregnant women living with HIV needing antiretrovirals for preventing mother-to-child transmission based on country report	Pregnant women tested for HIV	
			Estimate	Low estimate	High estimate	Estimate	Low estimate	High estimate		Reported number	Estimated coverage
Afghanistan	0	Jan 07–Dec 07	...			...			...	0 ^d	0%
Albania	...		...			...			...	...
Algeria	19	Jan 07–Dec 07	<500	<200	660	...	3%	12%	0	...	
Angola	1 645	Jan 07–Dec 07	18 000	13 000	22 000	9%	7%	13%	22 332	57 605 ^d	7%
Argentina	2 193	Jan 07–Dec 07	1 700	1 200	2 400	...	93%	>95%	2 530	584 000 ^d	85%
Armenia	6	Jan 07–Dec 07	<100	<100	<100	...	19%	45%	6	34 364	>95%
Azerbaijan	6	Jan 07–Dec 07	<100	<100	<200	...	4%	17%	...	162 565	>95%
Bangladesh	5	Jan 06–Dec 06	<500	<200	<500	...	1%	4%	...	0 ^d	0%
Belarus	127	Jan 07–Dec 07	<100	<100	<200	...	90%	>95%	144	122 614	>95%
Belize	55	Jan 07–Dec 07	<200	<100	<500	...	24%	64%	57	6 345	91%
Benin	1 830	Jan 07–Dec 07	4 500	3 900	5 300	40%	35%	47%	1 158	83 776	23%
Bhutan	...		<100	<100	<100	...			...	2 244 ^d	19%
Bolivia	34	Jan 07–Dec 07	<200	<200	<500	...	13%	24%	763	7 933 ^e	3%
Bosnia and Herzegovina	0	Jan 07–Dec 07	...			...			1	1 198	3%
Botswana	12 419	Jan 07–Dec 07	11 000	10 000	12 000	>95%	>95%	>95%	...	35 970	77%
Brazil	6 188	Jan 07–Dec 07	8 600	5 600	13 000	...	49%	>95%	12 535	2 473 604	66%
Bulgaria	1	Jan 07–Dec 07	...			...			...	...
Burkina Faso	1 480	Jan 07–Dec 07	8 300	6 800	10 000	18%	15%	22%	18 495	61 628	10%
Burundi	1 102	Jan 07–Dec 07	7 800	5 100	10 000	14%	11%	22%	18 010	17 422 ^d	5%
Cambodia	505	Jan 07–Dec 07	1 600	1 200	2 000	...	25%	41%	4 509	72 450	19%
Cameroon	7 516 ^f	Jan 07–Dec 07	34 000	22 000	42 000	22%	18%	34%	67 875	200 000 ^e	31%
Cape Verde	51	Jan 07–Dec 07	...			...			99	6 097 ^d	41%
Central African Republic	3 714 ^f	Jan 07–Dec 07	11 000	9 800	12 000	34%	30%	38%	36 093	25 517	16%
Chad	254	Jan 06–Dec 06	18 000	10 000	22 000	1%	1%	2%	...	...
Chile	117	Jan 07–Dec 07	<500	<500	500	...	23%	45%	117	...	
China	593 ^g	Jan 07–Dec 07	6 800	4 300	11 000	...	6%	14%	787	1 309 625 ^g	8%
Colombia	144	Jan 07–Dec 07	2 500	1 600	3 700	...	4%	9%	184	145 404	16%
Comoros	0	Jan 07–Dec 07	<100	<100	<100	...	0%	0%	4	181 ^d	1%
Congo	240	Jan 07–Dec 07	4 400	3 400	5 400	5%	4%	7%	1 617	5 549	4%
Cook Islands	...		...			...			...	...
Costa Rica	21	Jan 06–Dec 06	<200	<100	<500	...	9%	25%	37	61 000 ^d	76%
Côte d'Ivoire	3 240 ^f	Jan 07–Dec 07	28 000	21 000	34 000	12%	9%	16%	21 977	48 574	7%
Croatia	2	Jan 07–Dec 07	...			...			3	...	
Cuba	41	Jan 07–Dec 07	<100	<100	<200	...	37%	>95%	35	112 434	93%
Democratic People's Republic of Korea	...		<100	<100	<200	...			...	...
Democratic Republic of the Congo	3 435	Jan 07–Dec 07	38 000	33 000	46 000	9%	8%	10%	68 865	130 009	4%
Djibouti	52	Jan 06–Dec 06	820	610	1 000	6%	5%	9%	...	6 992 ^d	29%
Dominica	1	Jan 07–Dec 07	...			...			1	1 224 ^d	
Dominican Republic	795	Jan 07–Dec 07	1 600	1 200	2 200	...	36%	65%	1 649	97 350	42%

Infants born to women living with HIV receiving antiretrovirals for preventing mother-to-child transmission		Infants born to women living with HIV receiving co-trimoxazole prophylaxis within two months of birth		Infants born to women living with HIV receiving a virological test by two months of age		Number of children <15 who received antiretroviral therapy	Period	Number of facilities providing antenatal care that also provide HIV testing and counselling and antiretrovirals for preventing mother-to-child transmission	Number of facilities providing paediatric antiretroviral therapy
Reported number	Estimated coverage	Reported number	Estimated coverage	Reported number	Estimated coverage				
0 ^d		0 ^d		0 ^d		0	Dec 07	0	0 ^d
...		...		...		12	Dec 07	...	...
...		...		...		45	Oct 07	...	...
899 ^d	5%	...		...		363	Dec 07	...	28 ^d
50 ^d	3%	...		2 148 ^d	>95%	3 654	Dec 07	...	70 ^d
7	35%	0	0%	0	0%	4	Dec 07	...	1
1	1%	2	3%	4	6%	0	Dec 07	0	1
5 ^d	2%	5 ^d	2%	0 ^d	0%	1	Dec 06	...	0 ^d
136	>95%	136	>95%	114 ^d	>95%	69	Dec 07	555	208
57	39%	9	6%	51	35%	65	Dec 07	59	10
984	22%	984	22%	...		542	Dec 07	183	44
0 ^d		0 ^d		0 ^d		0	Dec 07	...	3 ^d
28	15%	...		...		22	Dec 07	20	10
0		0		0		1	Dec 07	3	3
6 632	58%	9 489	83%	...		9 496	Dec 07	634	92
4 386	79%	...		2 626	47%	6 815	Dec 07	1 777	639
...		...		...		3	Dec 07	...	...
1 366	16%	...		68	1%	658	Dec 07	400	16
814 ^d	10%	814 ^d	10%	0 ^d	0%	1 198	Dec 07	...	38 ^d
517	33%	203	13%	43	3%	2 541	Dec 07	79	22
4 948	14%	1 030	3%	...	^k	1 694	Dec 07	739	97
31 ^d		31 ^d		0 ^d		23	Dec 07	...	7 ^d
749	7%	443 ^d	4%	117	1%	417	Dec 07	62	1
128 ^d	1%	63 ^d	0%	0 ^d	0%	148	Dec 07	...	12 ^d
...	
683 ^a	10%	650 ^d	10%	...		766	Dec 07	...	...
131	5%	...		65	3%	3	Dec 07	5 847	...
0 ^d	0%	0 ^d	0%	0 ^d	0%	1	Dec 07	...	1 ^d
462	10%	462	10%	462	10%	462	Dec 07	23	9
...	
40 ^d	28%	40 ^d	28%	40 ^d	28%	52	Dec 06	...	1 ^d
1 672	6%	...		...		1 785	Sep 07	...	23 ^d
...		...		...		5	Dec 06	...	...
41	75%	1	2%	41	75%	17	Dec 07	30	1
...	
1 930	5%	170 ^d	0%	...		1 632	Dec 07	315	77
52 ^d	6%	52 ^d	6%	...		25	Dec 07	...	2 ^d
2 ^d		2 ^d		0 ^d		2	Dec 07	...	1 ^d
872	53%	...		43	3%	589	Dec 07	132	23

Low- and middle-income countries ^a	Number of pregnant women living with HIV who received antiretrovirals for preventing mother-to-child transmission ^b	Period	Estimated number of pregnant women living with HIV needing antiretrovirals for preventing mother-to-child transmission based on UNAIDS/WHO methods			Estimated percentage of pregnant women living with HIV who received antiretrovirals for preventing mother-to-child transmission ^c			Estimated number of pregnant women living with HIV needing antiretrovirals for preventing mother-to-child transmission based on country report	Pregnant women tested for HIV	
			Estimate	Low estimate	High estimate	Estimate	Low estimate	High estimate		Reported number	Estimated coverage
Ecuador	268	Jan 07–Dec 07	<500	<500	800	...	34%	>95%	347	114 000 ^d	40%
Egypt	5	Jan 07–Dec 07	<200	<200	<500	...	2%	4%	...	1 750	0%
El Salvador	130	Jan 07–Dec 07	650	<500	1 100	...	12%	32%	130	103 498	65%
Equatorial Guinea	103	Jan 06–Dec 06	710	530	950	14%	11%	20%	...	6 300 ^d	33%
Eritrea	168 ^f	Jan 07–Dec 07	2 500	1 600	4 000	7%	4%	11%	3 578	34 884 ^e	19%
Ethiopia	4 888	Jan 07–Dec 07	66 000	58 000	74 000	7%	6%	8%	75 420	157 919	5%
Fiji	7	Jan 07–Dec 07	<100	<100	<100	...	82%	>95%	7	5 ^d	0%
Gabon	494	Jan 07–Dec 07	2 300	1 600	3 500	21%	14%	32%	2 570	10 918	32%
Gambia	133 ^f	Jan 07–Dec 07	510	<500	800	...	17%	58%	709	15 686 ⁱ	26%
Georgia	22	Jan 07–Dec 07	<100	<100	<100	...	41%	>95%	25	49 805 ⁱ	>95%
Ghana	2 896	Jan 07–Dec 07	14 000	12 000	16 000	21%	18%	24%	19 918	109 334 ⁱ	16%
Grenada	7	Jan 07–Dec 07	...	...	...	...	...	...	10	...	...
Guatemala	373	Jan 07–Dec 07	5 300	3 200	8 100	...	5%	12%	2 270	45 549	10%
Guinea	679 ^f	Jan 07–Dec 07	6 200	5 000	8 600	11%	8%	14%	1 722	29 919	8%
Guinea-Bissau	349	Jan 07–Dec 07	1 500	1 000	2 100	24%	17%	34%	3 716	6 886	8%
Guyana	144	Jan 06–Dec 06	<500	<200	<500	...	29%	>95%	...	13 041 ^d	>95%
Haiti	1 107	Jan 07–Dec 07	5 100	4 200	6 100	22%	18%	26%	5 224	110 114	41%
Honduras	220	Jan 07–Dec 07	650	<500	1 200	...	19%	79%	...	79 507	40%
Hungary	1	Jan 07–Dec 07	<100	<100	<100	...	2%	8%	1	...	...
India	8 816	Jan 07–Dec 07	64 000	37 000	92 000	...	10%	24%	86 121	2 771 665 ⁱ	10%
Indonesia	89	Jan 07–Dec 07	3 300	2 100	5 300	...	2%	4%	...	4 830	0%
Iran (Islamic Republic of)	22	Sep 06–Sep 07	1 300	940	1 800	...	1%	2%	220	158	0%
Iraq	...	...	...	...	...	...	...	...	...	...	...
Jamaica	292 ^f	Jan 07–Dec 07	<500	<500	640	...	45%	>95%	171	12 080 ⁿ	22%
Jordan	2	Jan 07–Dec 07	...	...	...	...	...	...	0	6	0%
Kazakhstan	126	Jan 07–Dec 07	<200	<100	<500	...	30%	>95%	210	406 129	>95%
Kenya	52 858 ^f	Jan 07–Dec 07	76 000	66 000	86 000	69%	61%	80%	105 000	428 624	30%
Kiribati	...	...	...	...	...	...	...	...	...	...	...
Kyrgyzstan	3	Jan 07–Dec 07	<100	<100	<200	...	2%	8%	197	59 794	53%
Lao People's Democratic Republic	24	Jan 07–Dec 07	<200	<100	<500	...	9%	36%	235	1 860	1%
Latvia	37	Jan 07–Dec 07	<100	<100	<200	...	33%	75%	38	...	...
Lebanon	...	...	<100	<100	<100	...	...	...	...	...	...
Lesotho	3 966	Jan 07–Dec 07	12 000	11 000	14 000	32%	29%	36%	12 750	23 965	41%
Liberia	224	Jan 07–Dec 07	3 100	2 400	3 900	7%	6%	9%	...	9 318	5%
Libyan Arab Jamahiriya	...	...	...	...	...	...	...	...	...	...	...
Lithuania	9	Jan 07–Dec 07	<100	<100	<100	...	27%	>95%	10	...	...
Madagascar	25	Jan 07–Dec 07	<500	<500	760	...	3%	9%	1 521	66 983 ^d	9%
Malawi	23 158	Jan 07–Dec 07	73 000	64 000	82 000	32%	28%	36%	71 847	280 446	50%
Malaysia	183	Jan 07–Dec 07	1 300	770	2 000	...	9%	24%	158	380 346	68%
Maldives	...	...	<100	<100	<100	...	...	...	...	4 438	63%
Mali	1 018	Jan 07–Dec 07	8 600	6 800	11 000	...	10%	15%	8 570	48 019 ^k	8%
Marshall Islands	...	...	...	...	...	...	...	...	...	...	...

Infants born to women living with HIV receiving antiretrovirals for preventing mother-to-child transmission		Infants born to women living with HIV receiving co-trimoxazole prophylaxis within two months of birth		Infants born to women living with HIV receiving a virological test by two months of age		Number of children <15 who received antiretroviral therapy	Period	Number of facilities providing antenatal care that also provide HIV testing and counselling and antiretrovirals for preventing mother-to-child transmission	Number of facilities providing paediatric antiretroviral therapy
Reported number	Estimated coverage	Reported number	Estimated coverage	Reported number	Estimated coverage				
251 ^d	54%	...	...	...	...	252	Dec 07	...	...
2	1%	2	1%	5	3%	18	Dec 07	0	1
5	1%	111	17%	116	18%	693	Dec 07	14	1
...	...	...	...	...	...	...	...	...	2 ^d
133	5%	150 ^e	6%	0	0%	65	Dec 07	73	1
3 031	5%	388 ^d	1%	94 ^d	0%	4 534	Dec 07	428	143
...	...	2 ^d	25%	...	...	1	Dec 07	...	1 ^d
248	11%	58 ^h	2%	...	...	73	Dec 07	129	12
116 ⁱ	23%	...	...	0 ^d	0%	83	Dec 06	20	3
23	>95%	21	91%	23	>95%	15	Dec 07	0	3
263 ^d	2%	...	...	...	...	576	Dec 07	407	48
...	...	...	...	...	...	2	Dec 07	...	...
184 ^k	3%	171 ^k	3%	...	...	597	Dec 07	38	8 ^l
364 ^k	6%	334 ^k	5%	4 ^k	0%	307	Sep 07	45	13
217 ^d	15%	0	0%	0 ^d	0%	41	Dec 07	1	3
174 ^d	52%	90 ^d	27%	0 ^d	0%	162	Dec 07	...	10 ^d
1 752	35%	...	...	...	...	867	Dec 06	92	32 ^d
6	1%	...	...	196	30%	751	Dec 07	161	7
...	...	...	...	...	...	7	Dec 07	...	...
5 043	8%	1 200 ^d	2%	...	...	8 887	Dec 07	2 432	137
25	1%	25	1%	18 ^d	1%	19	Dec 07	15	15
22 ^m	2%	13 ^m	1%	19 ^m	1%	21	Aug 07	70	70
...	...	...	...	...	...	0	Dec 07	...	...
162 ⁿ	37%	...	...	...	...	336	Sep 07	11	9
1	...	0 ^d	...	4	...	4	Dec 07	0	1
153	87%	130	74%	150	85%	71	Dec 07	...	5
18 874	25%	4 534 ^o	6%	17 000	22%	15 090	Dec 07	2 077	234
...
1	1%	...	...	...	...	26	Dec 07	9	8
17	14%	16	14%	0	0%	36	Dec 07	3	2
...	...	...	...	...	...	14	Dec 06	...	...
...	...	...	...	...	...	9	Dec 07	...	...
2 767	22%	...	...	3 437	28%	1 553	Dec 07	104	17
197	6%	112	4%	4	0%	92	Sep 07	18	15
...
...	...	...	...	...	...	1	Dec 07	...	...
4 ^d	1%	2 ^d	0%	2 ^d	0%	0	Dec 06	...	11 ^d
12 039	17%	8 803	12%	2 435	3%	10 439	Dec 07	357	154
177	14%	...	...	177	14%	500	Dec 07	171	60
...	...	...	...	...	...	0	Dec 07	...	...
602 ⁱ	7%	195 ^p	2%	63 ⁱ	1%	579	Nov 07	40	17
...

Low- and middle-income countries ^a	Number of pregnant women living with HIV who received antiretrovirals for preventing mother-to-child transmission ^b	Period	Estimated number of pregnant women living with HIV needing antiretrovirals for preventing mother-to-child transmission based on UNAIDS/WHO methods			Estimated percentage of pregnant women living with HIV who received antiretrovirals for preventing mother-to-child transmission ^c			Estimated number of pregnant women living with HIV needing antiretrovirals for preventing mother-to-child transmission based on country report	Pregnant women tested for HIV	
			Estimate	Low estimate	High estimate	Estimate	Low estimate	High estimate		Reported number	Estimated coverage
Mauritania	45	Jan 07–Dec 07	<500	<500	770	...	6%	20%	800	6 840 ^k	7%
Mauritius	19	Jan 07–Dec 07	<200	<100	<500	...	6%	23%	60	...	
Mexico	146	Jan 06–Dec 06	3 100	2 000	4 900	...	3%	7%	...	...
Micronesia (Federated States of)	...		...			...			...	...
Moldova	73	Jan 07–Dec 07	<100	<100	<200	...	51%	>95%	86	36 879	84%
Mongolia	0	Jan 07–Dec 07	<100	<100	<100	...	0%	0%	13	...	
Montenegro	1	Jan 07–Dec 07	...			...			...	...
Morocco	42	Jan 07–Dec 07	<500	<500	550	...	8%	18%	544	...	
Mozambique	44 975	Jan 07–Dec 07	97 000	81 000	120 000	46%	39%	56%	150 995	366 281	43%
Myanmar	1 280 ^f	Jan 07–Dec 07	4 500	2 900	7 100	...	18%	43%	...	99 789 ^d	11%
Namibia	6 022	Jan 06–Dec 06	9 400	7 600	11 000	64%	53%	80%	...	42 322 ^d	80%
Nauru	...		...			...			...	...
Nepal	36	Oct 06–Sep 07	1 500	990	2 300	...	2%	4%	1 800	32 553	4%
Nicaragua	43	Jan 07–Dec 07	<200	<100	<500	...	15%	44%	174	27 741 ^k	20%
Niger	1 006 ^f	Jan 07–Dec 07	3 300	2 100	5 000	...	20%	47%	6 710	66 775	10%
Nigeria	12 278	Jan 07–Dec 07	190 000	130 000	240 000	7%	5%	10%	...	207 107	4%
Niue	...		...			...			...	...
Oman	...		...			...			...	...
Pakistan	5	Jan 07–Dec 07	2 300	1 500	3 700	...	<1%	<1%	...	3 249	0%
Palau	...		...			...			...	...
Panama	71 ^f	Jan 07–Dec 07	<500	<500	510	...	14%	29%	377	...	
Papua New Guinea	84	Jan 07–Dec 07	1 900	1 800	2 100	4%	3%	5%	3 621	7 153	4%
Paraguay	141 ^f	Jan 07–Dec 07	<500	<500	830	...	17%	57%	374	35 000 ^d	23%
Peru	502	Jan 07–Dec 07	1 300	890	1 800	...	28%	56%	...	284 923 ^d	49%
Philippines	1	Jan 07–Dec 07	<200	<200	<500	...	<1%	<1%	2	798 ^q	0%
Poland	63	Jan 07–Dec 07	<200	<100	<500	...	26%	85%	63	...	
Romania	68	Jan 07–Dec 07	<500	<200	<500	...	22%	42%	70	81 439	38%
Russian Federation	6 419	Jan 07–Dec 07	7 300	4 500	11 000	...	59%	>95%	...	3 895 308 ^d	>95%
Rwanda	6 485 ^f	Jan 07–Dec 07	11 000	9 100	13 000	60%	51%	71%	...	212 501 ^k	51%
Saint Kitts and Nevis	...		...			...			...	...
Saint Lucia	11	Jan 07–Dec 07	...			...			14	...	
Saint Vincent and the Grenadines	...		...			...			...	...
Samoa	...		...			...			...	...
Sao Tome and Principe	22	Jan 07–Dec 07	...			...			90	5 492	>95%
Senegal	264	Jan 07–Dec 07	4 400	3 000	6 300	...	4%	9%	385	22 770 ^d	5%
Serbia	2	Jan 06–Dec 06	<100	<100	<200	...	2%	5%	...	7 500 ^d	6%
Seychelles	...		...			...			...	...
Sierra Leone	919	Jan 07–Dec 07	4 400	3 100	6 200	21%	15%	29%	520	52 258	20%
Slovakia	...		...			...			...	...
Solomon Islands	...		...			...			...	...

Infants born to women living with HIV receiving antiretrovirals for preventing mother-to-child transmission		Infants born to women living with HIV receiving co-trimoxazole prophylaxis within two months of birth		Infants born to women living with HIV receiving a virological test by two months of age		Number of children <15 who received antiretroviral therapy	Period	Number of facilities providing antenatal care that also provide HIV testing and counselling and antiretrovirals for preventing mother-to-child transmission	Number of facilities providing paediatric antiretroviral therapy
Reported number	Estimated coverage	Reported number	Estimated coverage	Reported number	Estimated coverage				
21	5%	18	4%	0	0%	23	Dec 07	0	1
...	
146 ^d	5%	...		176 ^d	6%	176	Dec 06	...	146 ^d
...	
77	93%	0	0%	65	78%	19	Dec 07	144	2
0	0%	0	0%	0	0%	0	Dec 07	...	0
1		...		...		1	Dec 07	...	...
...		...		...		58	Dec 07	...	4
26 708	27%	...		585	1%	6 320	Nov 07	386	152
1 008 ^d	22%	...		...		287	Dec 06	...	21 ^d
6 400 ^d	68%	...		...		5 283	Sep 07	...	34 ^d
...	
34	2%	31	2%	0	0%	51	Sep 07	11	9
43 ^k	26%	43 ^k	26%	43 ^k	26%	45	Dec 07	15	14
278	9%	...		...		104	Dec 07	129	12
4 259	2%	...		...		15 345	Dec 07	262	129
...	
...		...		...		25	Jan 06	...	...
3	0%	0	0%	4	0%	21	Dec 07	5	3
...		...		...		0	Dec 07	...	...
153 ^d	44%	...		...		214	Dec 06	...	4 ^d
25 ^d	1%	60	3%	0	0%	185	Dec 07	38	15
86 ^d	19%	42 ^d	9%	54 ^d	12%	104	Nov 07	...	3 ^d
634 ^d	49%	...		...		322	Dec 07	...	26 ^d
1	1%	0	0%	0	0%	4	Dec 07	7	2
...		...		...		118	Dec 07	...	...
78 ^d	29%	78	29%	156	59%	196	Dec 07	...	53
...		...		...		330	Jan 06	...	122 ^d
5 951 ^k	55%	...		2 564	24%	4 350	Dec 07	285	171
...	
...		...		...		2	Dec 07	...	...
...	
...	
24		3 ^d		...		2	Dec 07	7	7
...		...		...		384	Dec 07	...	19 ^d
2 ^d	3%	0 ^d	0%	2 ^d	3%	14	Dec 06	...	1 ^d
...	
216	5%	66	2%	0	0%	12	Dec 06	162	3
...		...		...		0	Dec 07	...	...
...	

Low- and middle-income countries ^a	Number of pregnant women living with HIV who received antiretrovirals for preventing mother-to-child transmission ^b	Period	Estimated number of pregnant women living with HIV needing antiretrovirals for preventing mother-to-child transmission based on UNAIDS/WHO methods			Estimated percentage of pregnant women living with HIV who received antiretrovirals for preventing mother-to-child transmission ^c			Estimated number of pregnant women living with HIV needing antiretrovirals for preventing mother-to-child transmission based on country report	Pregnant women tested for HIV	
			Estimate	Low estimate	High estimate	Estimate	Low estimate	High estimate		Reported number	Estimated coverage
Somalia	11	Jan 07–Dec 07	940	510	1 700	...	<1%	2%	2 865	...	
South Africa	127 164 ^f	Jan 07–Dec 07	220 000	180 000	260 000	57%	49%	69%	290 000	707 948 ^d	64%
Sri Lanka	1	Jan 06–Dec 06	<100	<100	<100	...	1%	3%	55	3 200 ^d	1%
Sudan	9 ^f		18 000	12 000	26 000	<1%	<1%	<1%	...	1 608	0%
Suriname	35	Jan 06–Dec 06	<200	<100	<200	...	18%	57%	...	7 156 ^d	80%
Swaziland	8 772	Jan 07–Dec 07	13 000	12 000	15 000	67%	60%	74%	13 178	33 838	>95%
Syrian Arab Republic	0	Jan 07–Dec 07	...			...			...	4	0%
Tajikistan	9	Jan 07–Dec 07	<200	<100	<500	...	2%	11%	438	19 893	11%
Thailand	9 352	Jan 07–Dec 07	10 000	6 400	15 000	...	62%	>95%	6 196	794 406 ^s	85%
The former Yugoslav Republic of Macedonia	...		...			...			...	...
Timor-Leste	2	Jan 07–Dec 07	...			...			...	...
Togo	705	Jan 07–Dec 07	8 000	6 300	10 000	9%	7%	11%	10 329	20 553	8%
Tonga	...		...			...			...	...
Tunisia	1	Jan 07–Dec 07	<100	<100	<100	...	1%	3%	...	110	0%
Turkey	4	Jan 06–Dec 06	...			...			...	2 070 ^d	0%
Turkmenistan	0	Jan 06–Dec 06	...			...			...	...
Tuvalu	...		...			...			...	...
Uganda	26 484	Jan 07–Dec 07	78 000	68 000	92 000	34%	29%	39%	91 000	476 994	34%
Ukraine	3 046	Jan 07–Dec 07	5 200	3 800	6 700	...	45%	79%	3 293	624 000	>95%
United Republic of Tanzania	31 863	Jan 07–Dec 07	100 000	91 000	110 000	32%	29%	35%	114 800	519 287 ⁱ	33%
Uruguay	53	Jan 06–Dec 06	<200	<100	<500	...	20%	76%	...	...
Uzbekistan	95	Jan 07–Dec 07	<500	<200	840	...	11%	68%	...	58 063	9%
Vanuatu	...		...			...			...	...
Venezuela (Bolivarian Republic of)	310	Jan 06–Dec 06	2 300	1 300	4 600	...	7%	24%	...	...
Viet Nam	744	Oct 06–Sep 07	3 900	2 400	6 400	...	12%	31%	5 352	138 682	8%
Yemen	2	Jan 07–Dec 07	...			...			...	800	0%
Zambia	35 314	Jan 07–Dec 07	76 000	68 000	86 000	47%	41%	52%	90 252	306 451	65%
Zimbabwe	15 381	Jan 07–Dec 07	52 000	48 000	57 000	29%	27%	32%	16 769	130 429	35%

Infants born to women living with HIV receiving antiretrovirals for preventing mother-to-child transmission		Infants born to women living with HIV receiving co-trimoxazole prophylaxis within two months of birth		Infants born to women living with HIV receiving a virological test by two months of age		Number of children <15 who received antiretroviral therapy	Period	Number of facilities providing antenatal care that also provide HIV testing and counselling and antiretrovirals for preventing mother-to-child transmission	Number of facilities providing paediatric antiretroviral therapy
Reported number	Estimated coverage	Reported number	Estimated coverage	Reported number	Estimated coverage				
...		...		0 ^d	0%	5	Dec 07	...	0 ^d
89 962 ^d	41%	...		...		32 060	Sep 07	...	231 ^d
1 ^d	2%	1 ^d	2%	0 ^d	0%	0	Dec 06	...	1
2	0%	14	0%	0	0%	...		7	21
...		...		...		58	Dec 07	...	5 ^d
7 376	56%	725 ^d	6%	2 517	19%	2 123	Dec 07	100	22
0		0		1		4	Dec 07	...	14
9	5%	1	1%	1	1%	4	Dec 07	0	6
6 196 ^s	61%	...		...		6 687	Sep 07	939	910 ^d
0		...		...		1	Dec 07	1	1
...		...		...		...		0	0
749	9%	488	6%	0	0%	559	Dec 07	41	67
...	
1	2%	0	0%	1	2%	3	Dec 06	2	4
4 ^d		0 ^d		0 ^d		9	Dec 07	...	3
0 ^d		0 ^d		0 ^d		0	Dec 07	...	0 ^d
...	
13 914	18%	...		5 437	7%	8 532	Sep 07	504	286
3 325	63%	3 325	63%	5 605	>95%	908	Dec 07	2 303	36
21 093 ⁱ	21%	...		...		11 176	Dec 07	1 347	230 ⁱ
68 ^d	51%	70 ^d	52%	70 ^d	52%	160	Dec 06	...	...
120	38%	...		...		225	Dec 07	18	3
...	
...		...		...		611	Dec 06	...	...
705 ^d	18%	...		...		789	Sep 07	26	30
2		0		0		1	Dec 07	0	0
15 631	21%	11 884	16%	7 664	10%	11 602	Dec 07	678	320
14 693	28%	9 975	19%	375 ^h	1%	8 237	Dec 07	710	33

- ... Data not available or not applicable.
- a See country classification by income, level of the epidemic and geographical, UNAIDS, UNICEF and WHO regions.
- b Most countries have reported data for a full 12-month period in 2006 or 2007. For the countries with data reported for a period of less than 12 months in 2007, the values are projected to a 12-month period, based on the monthly value (see footnote f).
- c Fifteen countries reported data for 2006. They reflect a 12-month period and the values are therefore not projected. The coverage estimates are based on the numbers of pregnant women living with HIV receiving antiretrovirals and the estimated unrounded need for antiretrovirals (based on UNAIDS/WHO methods). The point estimates and ranges are given for countries with a low or concentrated epidemic, whereas only ranges are given for countries with a low or concentrated epidemic.
- d The latest reported data are to December 2006.
- e Data reported for the period January 2007–October 2007.
- f Data were reported from January 2007 but not for the full year to December. The projection to a 12-month period is based on the monthly value (see the table below for the reported values).

Country	Period	Reported value
Cameroon	Jan 07–Oct 07	6 263
Central African Republic	Jan 07–Jun 07	1 857
Côte d'Ivoire	Jan 07–Jul 07	1 890
Eritrea	Jan 07–Oct 07	140
Gambia	Jan 07–Sep 07	100
Guinea	Jan 07–Sep 07	509
Jamaica	Jan 07–Jun 07	146
Kenya	Jan 07–Jun 07	26 429
Myanmar	Jan 07–Oct 07	1 067
Niger	Jan 07–Jun 07	503
Panama	Jan 07–Sep 07	53
Paraguay	Jan 07–Nov 07	129
Rwanda	Jan 07–Nov 07	5 945
South Africa	Jan 07–Sep 07	95 373

- g From 271 programme countries, January–September 2007.
- h Data reported for the period September–December 2007.
- i Data reported for the period January–September 2007.
- j Source: Vishnevskaya-Rostropovich Foundation.
- k Data reported for the period January–November 2007.
- l Does not include social services and private sector.
- m Data reported for the period March 2006–February 2007.
- n Data reported for the period January–June 2007.
- o Data reported for the period April–September 2007.
- p Data reported for the period January–August 2007.
- q Data reported for the period July–December 2007.
- r Northern Sudan reported 3 for the period August–December 2007, and southern Sudan reported 6 for the period January–December 2007, giving a total of 9.
- s Data reported for the period October 2006–September 2007. Adjusted data.

Annex 2. Numbers of children receiving antiretroviral therapy and numbers of pregnant women receiving antiretrovirals for preventing mother-to-child transmission and estimated coverage percentages in low- and middle-income countries by WHO and UNICEF regions, 2007

	Reported number of children younger than 15 years receiving antiretroviral therapy, 2007	Number of pregnant women living with HIV receiving antiretrovirals for preventing mother-to-child transmission, December 2007	Estimated number of pregnant women living with HIV needing antiretrovirals for preventing mother-to-child transmission, 2007 (range) ^a	Estimated percentage of pregnant women living with HIV receiving antiretrovirals for preventing mother-to-child transmission, 2007 (range) ^b
WHO				
African Region	158 008	446 000	1 300 000 [1 200 000–1 400 000]	34% [32–37%]
Region of the Americas	16 571	13 000	36 000 [30 000–45 000]	36% [29–43%]
Eastern Mediterranean Region	194	<200	24 000 [17 000–33 000]	1% [<1%]
European Region	2 053	10 000	14 000 [11 000–19 000]	71% [53–91%]
South-East Asia Region	15 932	20 000	84 000 [54 000–120 000]	24% [17–37%]
Western Pacific Region	4 822	2 100	16 000 [12 000–21 000]	13% [10–18%]
All low- and middle-income countries	197 580	491 000	1 500 000 [1 400 000–1 600 000]	33% [31–35%]
UNICEF				
Sub-Saharan Africa	157 968	446 000	1 300 000 [1 200 000–1 400 000]	34% [32–37%]
Eastern and Southern Africa	132 427	403 000	930 000 [860 000–1 000 000]	43% [40–47%]
West and Central Africa	25 541	43 000	390 000 [320 000–450 000]	11% [10–13%]
Latin America and the Caribbean	16 571	13 000	36 000 [30 000–45 000]	36% [29–43%]
East Asia and the Pacific	11 815	13 000	34 000 [27 000–44 000]	38% [30–48%]
South Asia	8 960	8 900	69 000 [40 000–97 000]	13% [9–22%]
Middle East and North Africa	213	<200	21 000 [15 000–29 000]	1% [<1%]
Central and Eastern Europe and the Commonwealth of Independent States ^c	1 913	10 000	14 000 [10 000–18 000]	71% [56–>95%]
All low- and middle-income countries	197 440	491 000	1 500 000 [1 400 000–1 600 000]	33% [31–35%]

Note: some groups do not add up to the total due to rounding.

a For an explanation of the methods used, see the explanatory notes for annexes.

b The coverage estimate is based on the estimated numbers of people receiving and needing antiretroviral therapy. Ranges around the levels of coverage are based on the uncertainty ranges around the estimates of need.

c UNICEF classifies five low- and middle-income countries (Hungary, Latvia, Lithuania, Poland and Slovakia) as industrialized countries, and their values are not included in these totals.

Classification of low- and middle-income countries by income level, epidemic level and geographical, UNAIDS, UNICEF and WHO regions

Country	Classification of economy	Level of epidemic	Geographical region	UNAIDS region	UNICEF region	WHO region
Afghanistan	Low income	Low	East, South and South-East Asia	South and South-East Asia	South Asia	Eastern Mediterranean Region
Albania	Lower middle income	Low	Europe and Central Asia	Western and Central Europe	Central and Eastern Europe and the Commonwealth of Independent States	European Region
Algeria	Lower middle income	Low	Middle East and North Africa	Middle East and North Africa	Middle East and North Africa	African Region
Angola	Lower middle income	Generalized	Sub-Saharan Africa	Sub-Saharan Africa	Eastern and Southern Africa	African Region
Argentina	Upper middle income	Concentrated	Latin America and the Caribbean	Latin America	Latin America and Caribbean	Region of the Americas
Armenia	Lower middle income	Concentrated	Europe and Central Asia	Eastern Europe and Central Asia	Central and Eastern Europe and the Commonwealth of Independent States	European Region
Azerbaijan	Lower middle income	Low	Europe and Central Asia	Eastern Europe and Central Asia	Central and Eastern Europe and the Commonwealth of Independent States	European Region
Bangladesh	Low income	Low	East, South and South-East Asia	South and South-East Asia	South Asia	South-East Asia Region
Belarus	Lower middle income	Concentrated	Europe and Central Asia	Eastern Europe and Central Asia	Central and Eastern Europe and the Commonwealth of Independent States	European Region
Belize	Upper middle income	Concentrated	Latin America and the Caribbean	Latin America	Latin America and Caribbean	Region of the Americas
Benin	Low income	Generalized	Sub-Saharan Africa	Sub-Saharan Africa	West and Central Africa	African Region
Bhutan	Lower middle income	Low	East, South and South-East Asia	South and South-East Asia	South Asia	South-East Asia Region
Bolivia	Lower middle income	Low	Latin America and the Caribbean	Latin America	Latin America and Caribbean	Region of the Americas
Bosnia and Herzegovina	Lower middle income	Low	Europe and Central Asia	Eastern Europe and Central Asia	Central and Eastern Europe and the Commonwealth of Independent States	European Region
Botswana	Upper middle income	Generalized	Sub-Saharan Africa	Sub-Saharan Africa	Eastern and Southern Africa	African Region
Brazil	Upper middle income	Concentrated	Latin America and the Caribbean	Latin America	Latin America and Caribbean	Region of the Americas
Bulgaria	Upper middle income	Low	Europe and Central Asia	Eastern Europe and Central Asia	Central and Eastern Europe and the Commonwealth of Independent States	European Region
Burkina Faso	Low income	Generalized	Sub-Saharan Africa	Sub-Saharan Africa	West and Central Africa	African Region
Burundi	Low income	Generalized	Sub-Saharan Africa	Sub-Saharan Africa	Eastern and Southern Africa	African Region
Cambodia	Low income	Concentrated	East, South and South-East Asia	South and South-East Asia	East Asia and the Pacific	Western Pacific Region
Cameroon	Lower middle income	Generalized	Sub-Saharan Africa	Sub-Saharan Africa	West and Central Africa	African Region
Cape Verde	Lower middle income	Generalized	Sub-Saharan Africa	Sub-Saharan Africa	West and Central Africa	African Region
Central African Republic	Low income	Generalized	Sub-Saharan Africa	Sub-Saharan Africa	West and Central Africa	African Region
Chad	Low income	Generalized	Sub-Saharan Africa	Sub-Saharan Africa	West and Central Africa	African Region
Chile	Upper middle income	Concentrated	Latin America and the Caribbean	Latin America	Latin America and Caribbean	Region of the Americas
China	Lower middle income	Concentrated	East, South and South-East Asia	East Asia	East Asia and the Pacific	Western Pacific Region
Colombia	Lower middle income	Concentrated	Latin America and the Caribbean	Latin America	Latin America and Caribbean	Region of the Americas
Comoros	Low income	Concentrated	Sub-Saharan Africa	Sub-Saharan Africa	Eastern and Southern Africa	African Region
Congo	Low income	Generalized	Sub-Saharan Africa	Sub-Saharan Africa	West and Central Africa	African Region
Cook Islands	Lower middle income		Oceania	Oceania	East Asia and the Pacific	Western Pacific Region
Costa Rica	Upper middle income	Concentrated	Latin America and the Caribbean	Latin America	Latin America and Caribbean	Region of the Americas
Côte d'Ivoire	Low income	Generalized	Sub-Saharan Africa	Sub-Saharan Africa	West and Central Africa	African Region
Croatia	Upper middle income	Low	Europe and Central Asia	Eastern Europe and Central Asia	Central and Eastern Europe and the Commonwealth of Independent States	European Region
Cuba	Lower middle income	Low	Latin America and the Caribbean	Caribbean	Latin America and Caribbean	Region of the Americas

Country	Classification of economy	Level of epidemic	Geographical region	UNAVDS region	UNICEF region	WHO region
Democratic People's Republic of Korea	Not a World Bank member	Low	East, South and South-East Asia	East Asia	East Asia and the Pacific	South-East Asia Region
Democratic Republic of the Congo	Low income	Generalized	Sub-Saharan Africa	Sub-Saharan Africa	West and Central Africa	African Region
Djibouti ^a	Lower middle income	Generalized	Sub-Saharan Africa	Sub-Saharan Africa	Middle East and North Africa	Eastern Mediterranean Region
Dominica	Upper middle income		Latin America and the Caribbean	Caribbean	Latin America and Caribbean	Region of the Americas
Dominican Republic	Lower middle income	Concentrated	Latin America and the Caribbean	Caribbean	Latin America and Caribbean	Region of the Americas
Ecuador	Lower middle income	Concentrated	Latin America and the Caribbean	Latin America	Latin America and Caribbean	Region of the Americas
Egypt	Lower middle income	Low	Middle East and North Africa	Middle East and North Africa	Middle East and North Africa	Eastern Mediterranean Region
El Salvador	Lower middle income	Concentrated	Latin America and the Caribbean	Latin America	Latin America and Caribbean	Region of the Americas
Equatorial Guinea	Upper middle income	Generalized	Sub-Saharan Africa	Sub-Saharan Africa	West and Central Africa	African Region
Eritrea	Low income	Generalized	Sub-Saharan Africa	Sub-Saharan Africa	Eastern and Southern Africa	African Region
Ethiopia	Low income	Generalized	Sub-Saharan Africa	Sub-Saharan Africa	Eastern and Southern Africa	African Region
Fiji	Lower middle income	Low	Oceania	Oceania	East Asia and the Pacific	Western Pacific Region
Gabon	Upper middle income	Generalized	Sub-Saharan Africa	Sub-Saharan Africa	West and Central Africa	African Region
Gambia	Low income	Concentrated	Sub-Saharan Africa	Sub-Saharan Africa	West and Central Africa	African Region
Georgia	Lower middle income	Low	Europe and Central Asia	Eastern Europe and Central Asia	Central and Eastern Europe and the Commonwealth of Independent States	European Region
Ghana	Low income	Generalized	Sub-Saharan Africa	Sub-Saharan Africa	West and Central Africa	African Region
Grenada	Upper middle income		Latin America and the Caribbean	Caribbean	Latin America and Caribbean	Region of the Americas
Guatemala	Lower middle income	Concentrated	Latin America and the Caribbean	Latin America	Latin America and Caribbean	Region of the Americas
Guinea	Low income	Generalized	Sub-Saharan Africa	Sub-Saharan Africa	West and Central Africa	African Region
Guinea-Bissau	Low income	Generalized	Sub-Saharan Africa	Sub-Saharan Africa	West and Central Africa	African Region
Guyana	Lower middle income	Concentrated	Latin America and the Caribbean	Latin America	Latin America and Caribbean	Region of the Americas
Haiti	Low income	Generalized	Latin America and the Caribbean	Caribbean	Latin America and Caribbean	Region of the Americas
Honduras	Lower middle income	Concentrated	Latin America and the Caribbean	Latin America	Latin America and Caribbean	Region of the Americas
Hungary	Upper middle income	Low	Europe and Central Asia	Western and Central Europe	Industrialized countries	European Region
India	Low income	Concentrated	East, South and South-East Asia	South and South-East Asia	South Asia	South-East Asia Region
Indonesia	Lower middle income	Concentrated	East, South and South-East Asia	South and South-East Asia	East Asia and the Pacific	South-East Asia Region
Iran (Islamic Republic of)	Lower middle income	Low	East, South and South-East Asia	South and South-East Asia	Middle East and North Africa	Eastern Mediterranean Region
Iraq	Lower middle income	Low	Middle East and North Africa	Middle East and North Africa	Middle East and North Africa	Eastern Mediterranean Region
Jamaica	Lower middle income	Concentrated	Latin America and the Caribbean	Caribbean	Latin America and Caribbean	Region of the Americas
Jordan	Lower middle income	Low	Middle East and North Africa	Middle East and North Africa	Middle East and North Africa	Eastern Mediterranean Region
Kazakhstan	Upper middle income	Concentrated	Europe and Central Asia	Eastern Europe and Central Asia	Central and Eastern Europe and the Commonwealth of Independent States	European Region
Kenya	Low income	Generalized	Sub-Saharan Africa	Sub-Saharan Africa	Eastern and Southern Africa	African Region
Kiribati	Lower middle income		Oceania	Oceania	East Asia and the Pacific	Western Pacific Region

Country	Classification of economy	Level of epidemic	Geographical region	UNAIDS region	UNICEF region	WHO region
Kyrgyzstan	Low income	Low	Europe and Central Asia	Eastern Europe and Central Asia	Central and Eastern Europe and the Commonwealth of Independent States	European Region
Lao People's Democratic Republic	Low income	Low	East, South and South-East Asia	South and South-East Asia	East Asia and the Pacific	Western Pacific Region
Latvia	Upper middle income	Concentrated	Europe and Central Asia	Eastern Europe and Central Asia	Industrialized countries	European Region
Lebanon	Upper middle income	Low	Middle East and North Africa	Middle East and North Africa	Middle East and North Africa	Eastern Mediterranean Region
Lesotho	Lower middle income	Generalized	Sub-Saharan Africa	Sub-Saharan Africa	Eastern and Southern Africa	African Region
Liberia	Low income	Generalized	Sub-Saharan Africa	Sub-Saharan Africa	West and Central Africa	African Region
Libyan Arab Jamahiriya	Upper middle income	Low	Middle East and North Africa	Middle East and North Africa	Middle East and North Africa	Eastern Mediterranean Region
Lithuania	Upper middle income	Low	Europe and Central Asia	Eastern Europe and Central Asia	Industrialized countries	European Region
Madagascar	Low income	Concentrated	Sub-Saharan Africa	Sub-Saharan Africa	Eastern and Southern Africa	African Region
Malawi	Low income	Generalized	Sub-Saharan Africa	Sub-Saharan Africa	Eastern and Southern Africa	African Region
Malaysia	Upper middle income	Concentrated	East, South and South-East Asia	South and South-East Asia	East Asia and the Pacific	Western Pacific Region
Maldives	Lower middle income	Low	East, South and South-East Asia	South and South-East Asia	South Asia	South-East Asia Region
Mali	Low income	Concentrated	Sub-Saharan Africa	Sub-Saharan Africa	West and Central Africa	African Region
Marshall Islands	Lower middle income		Oceania	Oceania	East Asia and the Pacific	Western Pacific Region
Mauritania	Low income	Concentrated	Sub-Saharan Africa	Sub-Saharan Africa	West and Central Africa	African Region
Mauritius	Upper middle income	Concentrated	Sub-Saharan Africa	Sub-Saharan Africa	Eastern and Southern Africa	African Region
Mexico	Upper middle income	Concentrated	Latin America and the Caribbean	Latin America	Latin America and Caribbean	Region of the Americas
Micronesia (Federated States of)	Lower middle income		Oceania	Oceania	East Asia and the Pacific	Western Pacific Region
Moldova	Lower middle income	Concentrated	Europe and Central Asia	Eastern Europe and Central Asia	Central and Eastern Europe and the Commonwealth of Independent States	European Region
Mongolia	Low income	Low	East, South and South-East Asia	East Asia	East Asia and the Pacific	Western Pacific Region
Montenegro	Upper middle income	Low	Europe and Central Asia	Western and Central Europe	Central and Eastern Europe and the Commonwealth of Independent States	European Region
Morocco	Lower middle income	Low	Middle East and North Africa	Middle East and North Africa	Middle East and North Africa	Eastern Mediterranean Region
Mozambique	Low income	Generalized	Sub-Saharan Africa	Sub-Saharan Africa	Eastern and Southern Africa	African Region
Myanmar	Low income	Concentrated	East, South and South-East Asia	South and South-East Asia	East Asia and the Pacific	South-East Asia Region
Namibia	Lower middle income	Generalized	Sub-Saharan Africa	Sub-Saharan Africa	Eastern and Southern Africa	African Region
Nauru	Not a World Bank member		Oceania	Oceania	East Asia and the Pacific	Western Pacific Region
Nepal	Low income	Concentrated	East, South and South-East Asia	South and South-East Asia	South Asia	South-East Asia Region
Nicaragua	Lower middle income	Concentrated	Latin America and the Caribbean	Latin America	Latin America and Caribbean	Region of the Americas
Niger	Low income	Concentrated	Sub-Saharan Africa	Sub-Saharan Africa	West and Central Africa	African Region
Nigeria	Low income	Generalized	Sub-Saharan Africa	Sub-Saharan Africa	West and Central Africa	African Region
Niue	Not a World Bank member		Oceania	Oceania	East Asia and the Pacific	Western Pacific Region
Oman	Upper middle income	Low	Middle East and North Africa	Middle East and North Africa	Middle East and North Africa	Eastern Mediterranean Region
Pakistan	Low income	Low	East, South and South-East Asia	South and South-East Asia	South Asia	Eastern Mediterranean Region

Country	Classification of economy	Level of epidemic	Geographical region	UNADS region	UNICEF region	WHO region
Palau	Upper middle income		Oceania	Oceania	East Asia and the Pacific	Western Pacific Region
Panama	Upper middle income	Concentrated	Latin America and the Caribbean	Latin America	Latin America and Caribbean	Region of the Americas
Papua New Guinea	Low income	Generalized	East, South and South-East Asia	Oceania	East Asia and the Pacific	Western Pacific Region
Paraguay	Lower middle income	Concentrated	Latin America and the Caribbean	Latin America	Latin America and Caribbean	Region of the Americas
Peru	Lower middle income	Concentrated	Latin America and the Caribbean	Latin America	Latin America and Caribbean	Region of the Americas
Philippines	Lower middle income	Low	East, South and South-East Asia	South and South-East Asia	East Asia and the Pacific	Western Pacific Region
Poland	Upper middle income	Concentrated	Europe and Central Asia	Western and Central Europe	Industrialized countries	European Region
Romania	Upper middle income	Low	Europe and Central Asia	Eastern Europe and Central Asia	Central and Eastern Europe and the Commonwealth of Independent States	European Region
Russian Federation	Upper middle income	Concentrated	Europe and Central Asia	Eastern Europe and Central Asia	Central and Eastern Europe and the Commonwealth of Independent States	European Region
Rwanda	Low income	Generalized	Sub-Saharan Africa	Sub-Saharan Africa	Eastern and Southern Africa	African Region
Saint Kitts and Nevis	Upper middle income		Latin America and the Caribbean	Caribbean	Latin America and Caribbean	Region of the Americas
Saint Lucia	Upper middle income		Latin America and the Caribbean	Caribbean	Latin America and Caribbean	Region of the Americas
Saint Vincent and the Grenadines	Upper middle income		Latin America and the Caribbean	Caribbean	Latin America and Caribbean	Region of the Americas
Samoa	Lower middle income		Oceania	Oceania	East Asia and the Pacific	Western Pacific Region
Sao Tome and Principe	Low income		Sub-Saharan Africa	Sub-Saharan Africa	West and Central Africa	African Region
Senegal	Low income	Concentrated	Sub-Saharan Africa	Sub-Saharan Africa	West and Central Africa	African Region
Serbia	Upper middle income	Low	Europe and Central Asia	Eastern Europe and Central Asia	Central and Eastern Europe and the Commonwealth of Independent States	European Region
Seychelles	Upper middle income		Sub-Saharan Africa	Sub-Saharan Africa	Eastern and Southern Africa	African Region
Sierra Leone	Low income	Generalized	Sub-Saharan Africa	Sub-Saharan Africa	West and Central Africa	African Region
Slovakia	Upper middle income	Low	Europe and Central Asia	Western and Central Europe	Industrialized countries	European Region
Solomon Islands	Low income		Oceania	Oceania	East Asia and the Pacific	Western Pacific Region
Somalia	Low income	Concentrated	Sub-Saharan Africa	Sub-Saharan Africa	Eastern and Southern Africa	Eastern Mediterranean Region
South Africa	Upper middle income	Generalized	Sub-Saharan Africa	Sub-Saharan Africa	Eastern and Southern Africa	African Region
Sri Lanka	Lower middle income	Low	East, South and South-East Asia	South and South-East Asia	South Asia	South-East Asia Region
Sudan	Low income	Generalized	Middle East and North Africa	Middle East and North Africa	Middle East and North Africa	Eastern Mediterranean Region
Suriname	Lower middle income	Concentrated	Latin America and the Caribbean	Latin America	Latin America and Caribbean	Region of the Americas
Swaziland	Lower middle income	Generalized	Sub-Saharan Africa	Sub-Saharan Africa	Eastern and Southern Africa	African Region
Syrian Arab Republic	Lower middle income	Low	Middle East and North Africa	Middle East and North Africa	Middle East and North Africa	Eastern Mediterranean Region
Tajikistan	Low income	Low	Europe and Central Asia	Eastern Europe and Central Asia	Central and Eastern Europe and the Commonwealth of Independent States	European Region
Thailand	Lower middle income	Concentrated	East, South and South-East Asia	South and South-East Asia	East Asia and the Pacific	South-East Asia Region
The former Yugoslav Republic of Macedonia	Lower middle income	Low	Europe and Central Asia	Western and Central Europe	Central and Eastern Europe and the Commonwealth of Independent States	European Region
Timor-Leste	Low income	Low	East, South and South-East Asia	East, South and South-East Asia	East Asia and the Pacific	South-East Asia Region

Country	Classification of economy	Level of epidemic	Geographical region	UNAIDS region	UNICEF region	WHO region
Togo	Low income	Generalized	Sub-Saharan Africa	Sub-Saharan Africa	West and Central Africa	African Region
Tonga	Lower middle income		Oceania	Oceania	East Asia and the Pacific	Western Pacific Region
Tunisia	Lower middle income	Low	Middle East and North Africa	Middle East and North Africa	Middle East and North Africa	Eastern Mediterranean Region
Turkey	Upper middle income	Low	Middle East and North Africa	Middle East and North Africa	Central and Eastern Europe and the Commonwealth of Independent States	European Region
Turkmenistan	Lower middle income	Low	Europe and Central Asia	Eastern Europe and Central Asia	Central and Eastern Europe and the Commonwealth of Independent States	European Region
Tuvalu	Not a World Bank member		Oceania	Oceania	East Asia and the Pacific	Western Pacific Region
Uganda	Low income	Generalized	Sub-Saharan Africa	Sub-Saharan Africa	Eastern and Southern Africa	African Region
Ukraine	Lower middle income	Concentrated	Europe and Central Asia	Eastern Europe and Central Asia	Central and Eastern Europe and the Commonwealth of Independent States	European Region
United Republic of Tanzania	Low income	Generalized	Sub-Saharan Africa	Sub-Saharan Africa	Eastern and Southern Africa	African Region
Uruguay	Upper middle income	Concentrated	Latin America and the Caribbean	Latin America	Latin America and Caribbean	Region of the Americas
Uzbekistan	Low income	Concentrated	Europe and Central Asia	Eastern Europe and Central Asia	Central and Eastern Europe and the Commonwealth of Independent States	European Region
Vanuatu	Lower middle income		Oceania	Oceania	East Asia and the Pacific	Western Pacific Region
Venezuela (Bolivarian Republic of)	Upper middle income	Concentrated	Latin America and the Caribbean	Latin America	Latin America and Caribbean	Region of the Americas
Viet Nam	Low income	Concentrated	East, South and South-East Asia	South and South-East Asia	East Asia and the Pacific	Western Pacific Region
Yemen	Low income	Low	Middle East and North Africa	Middle East and North Africa	Middle East and North Africa	Eastern Mediterranean Region
Zambia	Low income	Generalized	Sub-Saharan Africa	Sub-Saharan Africa	Eastern and Southern Africa	African Region
Zimbabwe	Low income	Generalized	Sub-Saharan Africa	Sub-Saharan Africa	Eastern and Southern Africa	African Region

a For the analysis throughout the report, values for Djibouti have been included in sub-Saharan Africa based on UNAIDS classification, while UNICEF and WHO classify Djibouti under Middle East and North Africa, and Eastern Mediterranean Region respectively.

STATISTICAL ANNEXES: EXPLANATORY NOTES

Data collection and validation

Annex 1 presents country data related to two priority health sector interventions for HIV: prevention of mother-to-child transmission and children receiving antiretroviral therapy.

The data presented in this annex was collected through three international monitoring and reporting processes.

1) Prevention of mother-to-child transmission and HIV care and treatment for children (Interagency Task Team on Prevention of HIV Infection in Pregnant Women, Mothers and their Children)

Since 2004, UNICEF and WHO, on behalf of the Interagency Task Team (IATT) on Prevention of HIV Infection in Pregnant Women, Mothers and their Children (see Box 1.1), have been jointly tasked with collecting national data to track progress towards goals for preventing mother-to-child transmission and HIV care and treatment for children (1). An annual reporting form (Report Card on Prevention of Mother-to-Child Transmission of HIV and Paediatric HIV Care and Treatment in Low- and Middle-income Countries) was sent to UNICEF and WHO country offices in December 2007, to facilitate data collection in collaboration with national governments and other in-country implementing partners. By April 2008, 109 low- and middle-income countries had provided data.

2) Health sector response to HIV/AIDS (WHO)

At the Fifty-ninth World Health Assembly in 2006, countries mandated WHO to monitor and report annually on the global health sector response to HIV/AIDS in recognition of the fundamental importance of the health sector in achieving universal access. WHO sent an annual questionnaire to its regional and country offices in the fourth quarter of 2007 to collect data on key indicators related to the availability, coverage and impact of priority health sector interventions for HIV (2). As of April 2008, 143 countries had provided data. The number of pregnant women living with HIV receiving antiretroviral drugs for preventing mother-to-child transmission and the number of children (younger than 15 years) receiving antiretroviral therapy were two of the indicators collected through this process and harmonized with the three international monitoring and reporting processes.

3) UNGASS Declaration of Commitment on HIV/AIDS (UNAIDS)

With the adoption of the Declaration of Commitment on HIV/AIDS by the United Nations General Assembly Special Session (UNGASS) on HIV/AIDS in 2001, countries committed to providing a progress report to the General Assembly every two years. The UNAIDS Secretariat facilitates this reporting and develops regular reports for submission to the Secretary-General of the United Nations. As of March 2008, 147 countries had submitted country progress reports to UNAIDS based on international guidelines on the construction of core indicators (3). The number of pregnant women living with HIV receiving antiretroviral drugs for preventing mother-to-child transmission and the number of children (younger than 15 years) receiving antiretroviral therapy were two of the indicators collected through this process and harmonized with the three international monitoring and reporting processes.

All three processes are linked through common indicators and a harmonized timeline for reporting. To facilitate collaboration at the country level, the country offices of WHO, UNICEF and UNAIDS worked jointly with national counterparts and partner agencies to collate and validate data in a single collaborative consultation process.

In addition, an international data reconciliation meeting was organized in February 2008 to review and validate data reported to the UNAIDS Secretariat, UNICEF, WHO, the Global Fund to Fight AIDS, Tuberculosis and Malaria, the United States President's Emergency Plan for AIDS Relief and MEASURE DHS (a project of demographic and health surveys supported by the United States Agency for International Development). When discrepancies were identified between data reported to the different organizations, follow-up letters were sent to UNAIDS, UNICEF and WHO country offices to liaise with national authorities to seek clarification and resolve the discrepancies.

Explanatory notes for Annexes 1

Prevention of mother-to-child transmission

Annex 1 provides data on indicators collected through the 2007 Report Card on Prevention of Mother-to-Child Transmission of HIV and Paediatric HIV Care and Treatment in Low- and Middle-income Countries and through the WHO framework for monitoring and reporting on the health sector response (4–6).

Number of pregnant women living with HIV receiving antiretroviral drugs for preventing mother-to-child transmission

The number of pregnant women living with HIV receiving antiretroviral drugs for preventing mother-to-child transmission is based on national programme data aggregated from facilities or other service delivery sites and as reported by the country. Of 149 low- and middle-income countries, 91 countries reported data for the full calendar year in 2007, 15 countries for the full calendar year in 2006 and 3 countries for a 12-month period but not from January to December. Fourteen countries reported data from January 2007 but not for the full year to December. For these 14 countries, simple linear projections of reported numbers were calculated based on the monthly value. The data for Sudan comprise the data for northern and southern Sudan, which reported for different reporting periods. Twenty-five countries did not report data.

Estimating the number of pregnant women living with HIV who need antiretroviral drugs for preventing mother-to-child transmission

The number of pregnant women living with HIV who need antiretroviral medicine for preventing mother-to-child transmission is estimated using standardized statistical modelling based on UNAIDS/WHO methods that consider various epidemic and demographic parameters and national programme coverage of antiretroviral therapy in the country (such as HIV prevalence among women of reproductive age, effect of HIV on fertility and antiretroviral therapy coverage) (7). These statistical modelling procedures are used to derive a comprehensive population-based estimate of the number of all pregnant women living with HIV who need antiretroviral drugs for preventing mother-to-child transmission in the country.

Annex 1 presents uncertainty ranges around the estimated population needing antiretroviral drugs to prevent mother-to-child transmission of HIV and, accordingly, the coverage of pregnant women living with HIV receiving antiretroviral drugs for preventing mother-to-child transmission.

Coverage of pregnant women living with HIV receiving antiretroviral drugs for preventing mother-to-child transmission

The coverage of antiretroviral drugs for preventing mother-to-child transmission of HIV is calculated by dividing the number of pregnant women living with HIV who received antiretroviral drugs for preventing mother-to-child transmission of HIV by the estimated number of pregnant women living with HIV who need antiretroviral drugs for preventing mother-to-child transmission in the country.

Estimates of coverage are based on the standardized estimates of pregnant women living with HIV who need antiretroviral drugs for preventing mother-to-child transmission derived using UNAIDS/WHO methods. Ranges around the levels of coverage are based on the uncertainty ranges around the estimates of need. Point estimates and ranges are given for countries with a generalized epidemic, whereas only ranges are given for countries with a concentrated epidemic. In general, the uncertainty around the estimates of need for preventing mother-to-child transmission in countries with a concentrated epidemic does not allow for releasing point estimates. See the classification of countries by level of income, HIV epidemic and geographical distribution for further information (7).

Revised estimates of antiretroviral therapy coverage in 2006 (based on updated parameters for estimating treatment need) are published in *World health statistics 2008* (8). Data for 2004–2006 collected through the same process are also published in other reports (4–6). The reports of the UNAIDS Reference Group on Estimates, Modelling and Projections (7) provide further information on this method.

Some countries have developed their own methods of estimating the number of pregnant women living with HIV who need antiretroviral medicine to prevent mother-to-child transmission, which could differ from estimates derived using UNAIDS/WHO methods. It is not always clear how these specific country estimates have been generated. In some cases, they are based only on pregnant women attending antenatal care or maternal health services and therefore do not account for pregnant women who are unaware of their HIV status. Annex 1 presents country estimates of need based on individual country methods, but these are not aggregated and are not used for calculating and analysing regional and global coverage.

Number of children receiving antiretroviral therapy

This report provides the most recent reported data on the number of children younger than 15 years of age receiving antiretroviral therapy in December 2007 in low- and middle-income countries. Data on the number of children receiving antiretroviral therapy are available for 128 countries.

In addition, Annex 1 also presents data on the following indicators:

- the number and percentage of pregnant women tested for HIV:
 - percentage is calculated by dividing the number of pregnant women tested for HIV by the estimated number of live births in 2007;
- the number and percentage of infants born to women living with HIV receiving antiretroviral drugs for preventing mother-to-child transmission:
 - percentage is calculated by dividing the number of infants born to women living with HIV receiving antiretroviral drugs by the estimated number of pregnant women living with HIV who need antiretroviral drugs for preventing mother-to-child transmission in the country in 2007;
- the number and percentage of infants born to women living with HIV receiving co-trimoxazole within two months of birth:
 - percentage is calculated by dividing the number of infants born to women living with HIV receiving co-trimoxazole within two months of birth by the estimated number of pregnant women living with HIV who need antiretroviral drugs for preventing mother-to-child transmission in the country in 2007. This is used as a proxy for the estimated number of infants born to women living with HIV, assuming a ratio of one child to one woman living with HIV;
- the number and percentage of infants born to women living with HIV receiving a virological test by two months
 - percentage is calculated by dividing the number of infants born to women living with HIV receiving a virological test within two months of birth by the estimated number of pregnant women living with HIV who need antiretroviral drugs for preventing mother-to-child transmission in the country in 2007. This is used as a proxy for the estimated number of infants born to women living with HIV, assuming a ratio of one child to one woman living with HIV;
- the number of facilities providing antenatal care that also provide HIV testing and counselling and antiretroviral drugs for preventing mother-to-child transmission; and
- the number of facilities providing paediatric antiretroviral therapy.

Explanatory notes on the classification of countries by income, HIV epidemic level and geographical region

Classification by income

Unless stated otherwise, all data analysis in this report is based on data from 149 countries classified as low and middle income by the World Bank as of July 2007 (9).

Economies are classified as low, middle or high income according to gross national income per capita in 2007, calculated using the World Bank Atlas method (to reduce the effect of exchange-rate fluctuation). The groups are: low income, US\$ 905 or less; lower-middle income, US\$ 906 to US\$ 3595; upper-middle income, US\$ 3596 to US\$ 11 115; and high income, US\$ 11 116 or more.

Classification by HIV epidemic level

HIV epidemics are categorized as low-level, concentrated and generalized based on the following principles and numerical proxies.

Low-level epidemics

- Principle: although HIV infection may have existed for many years, it has never spread to significant levels in any subpopulation. Recorded infection is largely confined to individuals with higher-risk behaviour such as sex workers, injecting drug users and men who have sex with men. This epidemic state suggests that the networks of risk are rather diffuse (with low levels of partner exchange or sharing of drug-injecting equipment) or that the virus has been introduced very recently.
- Numerical proxy: HIV prevalence has not consistently exceeded 5% in any defined subpopulation.

Concentrated epidemics

- HIV has spread rapidly in a defined subpopulation but is not well established in the general population. This epidemic state suggests active networks of risk within the subpopulation. The frequency and nature of links between highly infected subpopulations and the general population determines the future course of the epidemic.
- Numerical proxy: HIV prevalence consistently exceeds 5% in at least one defined subpopulation, and HIV prevalence is below 1% among pregnant women in urban areas.

Generalized epidemics

- Principle: in generalized epidemics, HIV is firmly established in the general population. Although subpopulations at high risk may continue to contribute disproportionately to the spread of HIV, sexual networking in the general population is sufficient to sustain an epidemic independent of subpopulations that are at higher risk of infection.
- Numerical proxy: HIV prevalence consistently exceeds 1% among pregnant women.

The UNAIDS Reference Group on Estimates, Modelling and Projections is currently reviewing this classification.

Classification by geographical region

This report presents data on 149 low- and middle-income countries by geographical region. The geographical regions are based on UNAIDS regions.¹ East, South and South-East Asia combines two UNAIDS regions as does Latin America and the Caribbean. The 149 countries are therefore categorized as follows: sub-Saharan Africa ($n = 47$); Latin America and the Caribbean ($n = 29$); East, South and South-East Asia ($n = 21$); Eastern Europe and Central Asia ($n = 25$); and the Middle East and North Africa ($n = 13$). In Oceania ($n = 14$), only Fiji and Papua New Guinea reported data. For this report, the values for Oceania are included in East, South and South-East Asia.

UNICEF groups the 149 low- and middle-income countries into seven regions: Eastern and Southern Africa ($n = 22$); West and Central Africa ($n = 24$); East Asia and the Pacific ($n = 26$); Latin America and the Caribbean ($n = 29$); South Asia ($n = 8$); Middle East and North Africa ($n = 14$); and Central and Eastern Europe and the Commonwealth of Independent States ($n = 21$). Five middle-income countries are classified as being industrialized.

WHO has 193 Member States grouped in six regions, and 149 WHO Member States are low- and middle-income countries: WHO African Region ($n = 46$); WHO Region of the Americas ($n = 29$); WHO Eastern Mediterranean Region ($n = 16$); WHO European Region ($n = 26$); WHO South-East Asia Region ($n = 11$); and WHO Western Pacific Region ($n = 21$). Annex 1 lists the remaining 44 high-income countries in the second section.

¹ UNAIDS brings together the efforts and resources of 10 United Nations System organizations in the response to HIV. The 10 UNAIDS Cosponsors are:

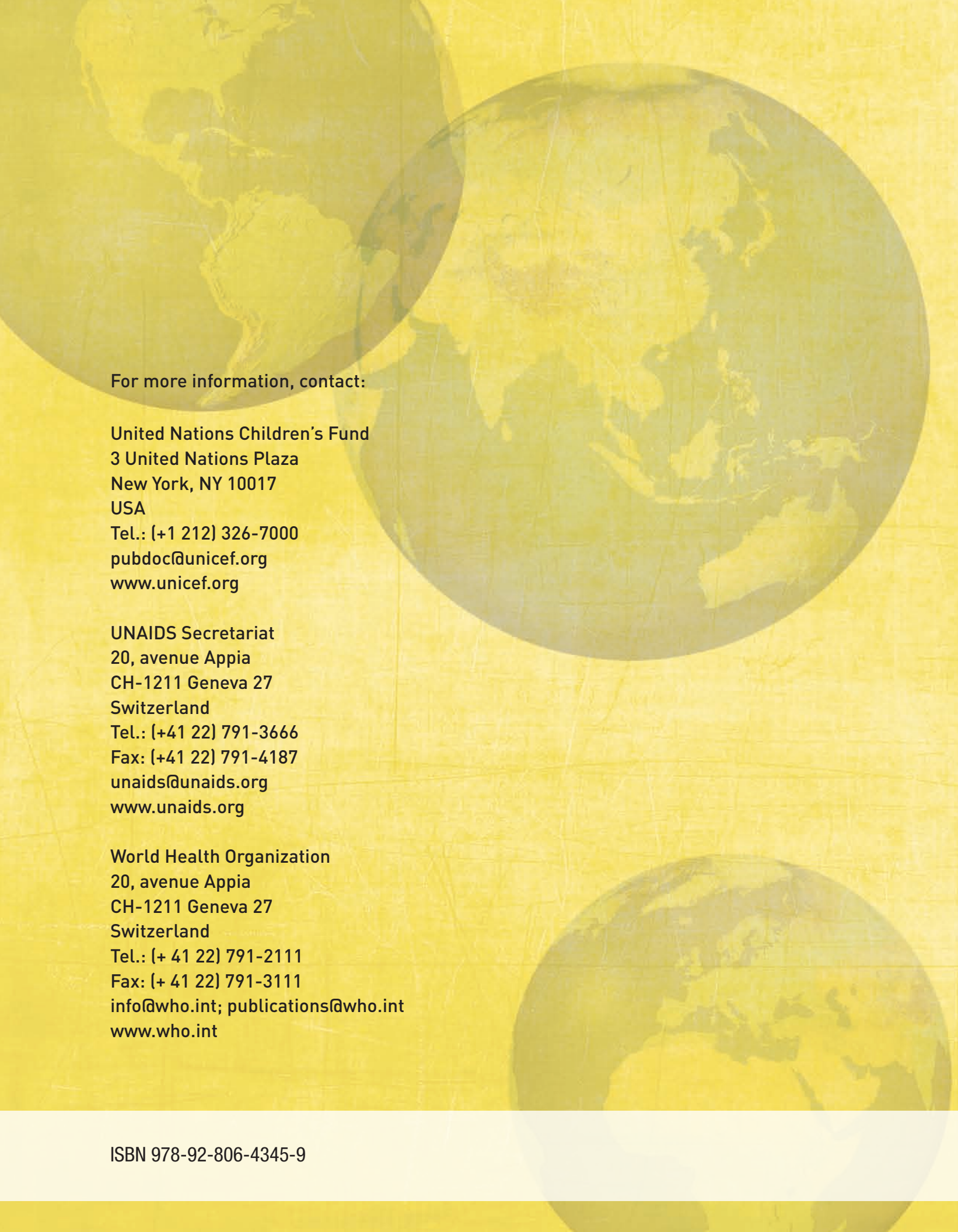
- Office of the United Nations High Commissioner for Refugees (UNHCR);
- United Nations Children's Fund (UNICEF);
- World Food Programme (WFP);
- United Nations Development Programme (UNDP);
- United Nations Population Fund (UNFPA);
- United Nations Office on Drugs and Crime (UNODC);
- International Labour Organization (ILO);
- United Nations Educational, Scientific and Cultural Organization (UNESCO);
- World Health Organization (WHO); and
- World Bank.

References for statistical annexes and explanatory notes

1. WHO and UNICEF with the Interagency Task Team on Prevention of HIV Infection in Pregnant Women, Mothers and their Children. *Guidance on global scale-up of the prevention of mother-to-child transmission of HIV: towards universal access for women, infants and young children and eliminating HIV and AIDS among children*. Geneva, World Health Organization, 2007 (<http://www.who.int/hiv/pub/mtct/pub35/en>, accessed 2 July 2008).
2. *Monitoring and reporting on the health sector's response towards universal access to HIV/AIDS prevention, treatment, care and support: WHO framework for global monitoring and reporting*. Geneva, World Health Organization, 2007 (http://www.who.int/entity/hiv/universalaccess2010/UAframework_Final%20Nov.pdf, accessed 2 July 2008).
3. *Monitoring the Declaration of Commitment on HIV/AIDS: guidelines on construction of core indicators. 2008 reporting*. Geneva, UNAIDS, 2007 (http://data.unaids.org/pub/Manual/2007/20070411_ungass_core_indicators_manual_en.pdf, accessed 2 July 2008).
4. *PMTCT report card 2005: monitoring progress on the implementation of programs to prevent mother to child transmission of HIV*. New York, UNICEF, 2005 (http://www.uniteforchildren.org/knowmore/files/ufc_PMTCTreportcard.pdf, accessed 2 July 2008).
5. *Report card on prevention of mother-to-child transmission of HIV and paediatric HIV care and treatment in low- and middle-income countries*. New York, Expanded Interagency Task Team on Prevention of HIV Infection in Pregnant Women, Mothers and their Children c/o UNICEF, 2007 (http://www.unicef.org/aids/index_documents.html, accessed 2 July 2008).
6. UNAIDS, UNICEF and WHO. *Children and AIDS: second stocktaking report*. New York, UNICEF, 2008 (http://www.unicef.org/publications/index_43451.html, accessed 2 July 2008).
7. Publications: Reference Group reports [web site]. Geneva, UNAIDS Reference Group on Estimates, Modelling and Projections (<http://www.epidem.org/publications.htm>, accessed 2 July 2008).
8. *World health statistics 2008*. Geneva, World Health Organization, 2008 (<http://www.who.int/healthinfo/statistics/en>, accessed 2 July 2008).
9. Data & statistics: country classification [web site]. Washington, DC, World Bank, 2008 (<http://go.worldbank.org/K2CKM78CC0>, accessed 2 July 2008).

ACKNOWLEDGEMENTS

This report would not have been possible without the collaboration and contribution of health ministries and national AIDS programmes that lead the work on HIV surveillance, monitoring and evaluation and research at the country level. WHO, UNICEF and UNAIDS also thank MEASURE DHS for providing access to data from country surveys for use in this report. Special thanks are due to David Breuer for technical editing and L'IV Com for graphic design and layout.



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ISBN 978-92-806-4345-9