PROGRESS REPORT SUMMARY 2011

Contents

Foreword		2
1.	**Introduction**	4
2.	**Key findings: Update on the HIV epidemic**	12
3.	**Key findings: Selected health sector interventions for HIV prevention**	13
4.	**Key findings: Knowledge of HIV status**	14
5.	**Key findings: Scaling up treatment and care for people living with HIV**	15
6.	**Key findings: Scaling up services for key populations at higher risk of HIV infection**	17
7.	**Key findings: Scaling up HIV services for women and children: Towards elimination of mother to child transmission and improving maternal and child health in the context of HIV**	18
8.	**Conclusions: Achieving and sustaining universal access**	21

Foreword

This documents the extraordinary progress achieved over the past decade in the health sector response to HIV. Access to evidence-informed HIV prevention, testing and counselling, treatment and care services in low- and middle-income countries has expanded dramatically. This progress demonstrates how countries can surmount seemingly intractable health and development challenges through commitment, investment and collective action.

The global incidence of HIV infection has stabilized and begun to decline in many countries with generalized epidemics. The number of people receiving antiretroviral therapy continues to increase, with 6.65 million people getting treatment at the end of 2010. Almost 50% of pregnant women living with HIV received effective antiretroviral regimens to prevent mother-to-child transmission, spurring the international community to launch the *Global Plan towards the elimination of new HIV infections among children by 2015 and keeping their mothers alive*. What would have been viewed as wildly unrealistic only a few years ago is now a very real possibility.

Recent published evidence from clinical trials has confirmed the powerful impact antiretroviral drugs have on the epidemic as part of an effective package of options for HIV prevention. For the first time, the prospect of a microbicide that contains antiretroviral medicine is providing additional hope to the women in sub-Saharan Africa who continue to bear a disproportionate burden of the HIV epidemic in this region.

Despite these advances, still too many people are acquiring HIV infection, too many people are getting sick and too many people are dying. Of particular concerns are trends affecting Eastern Europe and Central Asia, where the numbers of people acquiring HIV infection and dying from HIV-related causes continue to increase.

New surveillance data confirm that the epidemic disproportionately affects sex workers, men who have sex with men, transgender people, people who inject drugs, prisoners and migrants in both concentrated and generalized epidemics. Too often national AIDS plans omit these people, who face formidable legal and other structural barriers to accessing HIV services. Globally, more than 50% of the people eligible for treatment do not have access to antiretroviral therapy, including many people living with HIV who are unaware of their HIV status. Children have much poorer access to antiretroviral therapy than do adults, and attrition at each stage in the cascade of care has highlighted the need to strengthen links within HIV services and with other areas of health and community systems.

Nevertheless, several critical developments over the past year have highlighted the capacity of the global response to innovate and learn from scientific and programmatic evidence. The Political Declaration on HIV/AIDS, adopted in June 2011 by the United Nations General Assembly, set ambitious targets aimed at achieving universal access and the health-related Millennium Development Goals by 2015. The WHO Global Health Sector Strategy on HIV/AIDS, 2011–2015, the UNAIDS 2011–2015 Strategy: Getting to Zero, and the UNICEF's strategic and programmatic focus on equity will help to guide national and global efforts to respond to the epidemic and move from an emergency response to a long-term, sustainable model of delivering HIV services. These strategies emphasize the need to better tailor national HIV responses to the local epidemics, to decentralize programmes to bring them closer to people in need and to integrate with other health and community services to achieve the greatest impact. These are important developments aimed at consolidating gains to date and improving the quality, coverage and efficiency of HIV services.

The past decade has seen a historically unprecedented global response to the unique threat the HIV epidemic poses to human development. Networks of people living with and affected by HIV, as well as civil society organizations,

have continued to work with other partners, to demand and mobilize political leadership. This has led to increased funding, technical innovation and international collaboration that has saved millions of people's lives and changed the trajectory of the epidemic. As capacity at all levels increases, programmes are becoming more effective and efficient. Nevertheless, financial pressures on both domestic and foreign assistance budgets are threatening the impressive progress to date. Recent data indicating that HIV funding is declining is a deeply troubling trend that must be reversed for the international community to meet its commitments on HIV.

HIV has proven to be a formidable challenge, but the tide is turning. The tools to achieve an AIDS-free generation are in our hands. Let us move forward together on the ambitious goals set for 2015 and bring us closer to realizing our collective vision of zero new HIV infections, zero discrimination and zero AIDS-related deaths.

Margaret Chan
Director-General
World Health Organization

Michel Sidibé
Executive Director
UNAIDS

Anthony Lake
Executive Director
UNICEF

1. Introduction

This report reviews progress made until the end of 2010 in scaling up access to health sector interventions for HIV prevention, treatment, care and support in low-and middle-income countries. It is the fifth in a series of annual progress reports published since 2006 by the World Health Organization (WHO), United Nations Children's Fund (UNICEF) and Joint United Nations Programme on HIV/AIDS (UNAIDS), in collaboration with national and international partners, to monitor key components of the health sector response to the HIV epidemic. The report reflects the commitment of United Nations Member States, civil society and United Nations agencies to ensure accountability for global progress in the response to HIV through regular monitoring and reporting. Since 2010 was the deadline established in 2005 for achieving universal access to HIV prevention, treatment, care and support, this report also represents an important benchmark, an opportunity to take stock and identify both achievements and outstanding gaps and to take a constructive look forward in the response at this critical point in the response to the HIV epidemic.

The results of commitment, investment and collaboration over the past decade have translated into substantial improvements in access to evidence-informed HIV prevention, diagnosis, treatment, care and support interventions in the health sector (Table 1.1).

Table 1.1 Key indicators for the HIV epidemic, 2002–2010

	2002	2003	2004	2005	2006	2007	2008	2009	2010
Number of people living with HIV (in millions)	29.5 [27.7–31.7]	30.2 [28.4–32.1]	30.7 [28.8–32.5]	31.0 [29.2–32.7]	31.4 [29.6–33.0]	31.8 [29.9–33.3]	32.3 [30.4–33.8]	32.9 [31.0–34.4]	34.0 [31.6–35.2]
Number of people newly infected with HIV (in millions)	3.1 [3.0–3.3]	3.0 [2.8–3.1]	2.9 [2.7–3.0]	2.8 [2.6–3.0]	2.8 [2.6–2.9]	2.7 [2.5–2.9]	2.7 [2.5–2.9]	2.7 [2.5–2.9]	2.7 [2.4–2.9]
Number of people dying from AIDS-related causes (in millions)	2.0 [1.8–2.3]	2.1 [1.9–2.4]	2.2 [2.0–2.5]	2.2 [2.1–2.5]	2.2 [2.1–2.4]	2.1 [2.0–2.3]	2.0 [1.9–2.2]	1.9 [1.7–2.1]	1.8 [1.6–1.9]
% of pregnant women tested for HIV[a]				8%	13%	15%	21%	26%	35%
Number of facilities providing antiretroviral therapy[a]						7 700	12 400	18 600	22 400
Number of people receiving antiretroviral therapy[a]	300 000	400 000	700 000	1 330 000	2 034 000	2 970 000	4 053 000	5 255 000	6 650 000
Number of children receiving antiretroviral therapy[a]				71 500	125 700	196 700	275 400	354 600	456 000
Coverage of antiretroviral medicines for preventing mother-to-child transmission (%)[a]			9%[b]	14%[b]	23%[b]	33%[b]	43%[b]	48%[b]	48%[c]

a In low- and middle-income countries.
b The coverage data includes provision of single-dose nevirapine which is no longer recommended by WHO.
c This data does not include single-dose nevirapine regimen which is no longer recommended by WHO. It should not be compared with the previous years. When including single-dose nevirapine, the coverage in 2010 is 59%.

- A total of 2.7 million people acquired HIV infection in 2010, down from 3.1 million in 2001, contributing to the total number of 34 million people living with HIV in 2010 (see Chapter 2).
- Access to HIV testing and counselling is increasing: coverage of HIV testing and counselling among pregnant women rose from 8% in 2005 to 35% in 2010. Nevertheless, the majority of people living with HIV in low–and middle-income countries still do not know their serostatus (see Chapter 4).
- The number of health facilities providing antiretroviral therapy, a key indicator of expanded health system capacity to deliver treatment, expanded from 7700 in 2007 to 22 400 at the end of 2010, a threefold increase (see Chapter 5).
- Access to antiretroviral therapy in low–and middle-income countries increased from 400 000 in 2003 to 6.65 million in 2010, 47% coverage of people eligible to treatment, resulting in substantial declines in the number of people dying from AIDS-related causes during the past decade (Fig. 1.1). Mounting scientific evidence suggests that increased access to antiretroviral therapy is also contributing substantially to declines in the number of people acquiring HIV infection.
- The number of children receiving antiretroviral therapy increased from 71 500 at the end of 2005 to 456 000 in 2010. Nevertheless, the 23% coverage of children is a substantial gap to the coverage of adults.
- Coverage of pregnant women receiving the most effective antiretroviral regimens to prevent mother-to-child transmission of HIV (excluding single-dose nevirapine) is estimated at 48% in 2010(see Chapter 7).

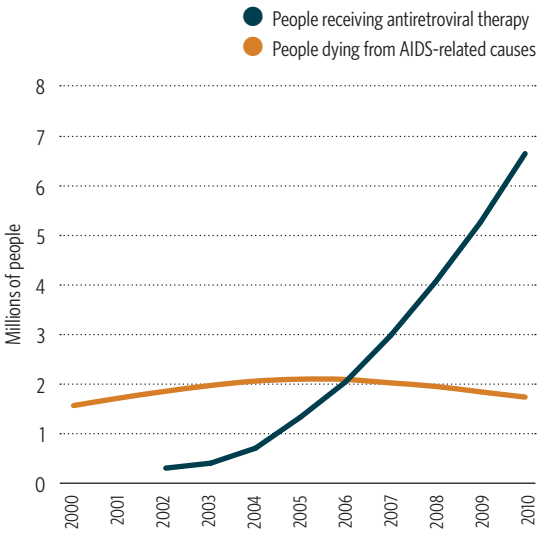
Building foundations: political commitment, investment and technical innovation

At the beginning of the 21st century, the international community faced formidable health and development challenges, none more so than countries in the poorest region of the world: sub-Saharan Africa. A rapidly expanding HIV epidemic was already dramatically reversing decades of progress on key development indicators, such as infant mortality and life expectancy *(1)*. Although the global incidence of HIV infection had peaked in the mid-1990s, more than 3 million people were being newly infected per year, AIDS had become one of the leading causes of adults dying in sub-Saharan Africa and the full onslaught of the epidemic would not be felt until 2006, when more than 2.2 million people died each year from AIDS-related causes *(2,3)*. The revolution in HIV treatment brought about by combination antiretroviral therapy in 1996 had forever altered the course of disease among those living with HIV in high-income countries but had only reached a fraction of people in low and middle-income countries, which bore 90% of the global HIV burden *(1)*.

At the XIII International AIDS Conference in July 2000 in Durban, South Africa, activists, community leaders, scientists and health care providers joined forces to demand access to treatment and an end to the enormous health inequities between the global North and global South. Months later, world leaders established the Millennium Development Goals, a series of ambitious, time-bound targets aimed at achieving progress on several health and development goals over the next 15 years, including Millennium Development Goal 6: combat HIV, malaria and other diseases *(4)*. In 2001, the United Nations General Assembly Special Session on HIV/AIDS (UNGASS) approved the Declaration of Commitment on HIV/AIDS, with common targets in specific technical areas, such as expanding access to antiretroviral therapy, antiretroviral prophylaxis to prevent the mother-to-child-transmission of HIV and HIV prevention. The Declaration also committed Member States to establish a dedicated global health fund to finance the HIV response, resulting in the launch of the Global Fund to Fight AIDS, Tuberculosis and Malaria one year later: The Global Fund quickly became a cornerstone in the global response to HIV, funding country-led responses through a pioneering, performance-based grant system. In 2003, the United States Government announced the United States President's Emergency Plan for AIDS Relief. At US$ 15 billion over five years, it was the largest single funding commitment for a disease in history. The United States President's Emergency Plan for AIDS Relief was reauthorized in 2008 for up to US$ 48 billion to combat AIDS, TB and malaria for 2009–2013.

Additional innovations in global health funding followed. By 2006, Brazil, Chile, France, Norway and the United Kingdom had agreed to create UNITAID, an international drug purchase facility financed through a modest levy on airline tickets. UNITAID now finances and supports strategic interventions in the drugs and diagnostics markets in 94 countries *(5)*.

Fig. 1.1 Number of people with access to antiretroviral therapy and the number of people dying from AIDS-related causes, low- and middle-income countries, 2000–2010



Increased political and financial commitments to the HIV response developed in parallel with normative guidance and strategic technical innovations, including a ground-breaking approach to scaling up treatment access in low- and middle-income countries: the public health approach to antiretroviral therapy *(6)*. Key elements of the public health approach include using standardized treatment protocols and drug regimens, simplified clinical monitoring, maximizing coverage with limited resources, optimizing human resources for health and involving people living with and affected by HIV in designing and rolling out antiretroviral therapy programmes *(7)*.

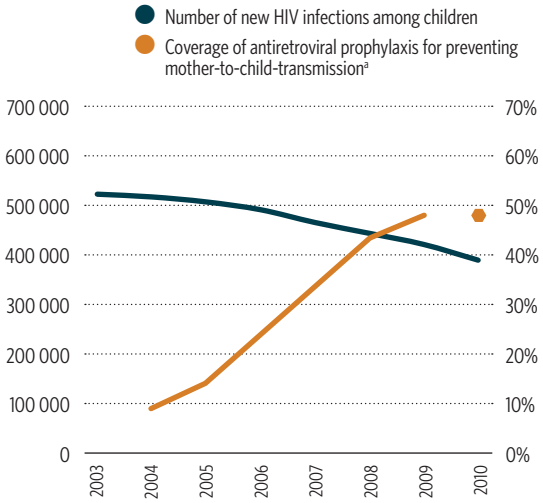
Scaling up the global HIV response

When WHO and UNAIDS launched the "3 by 5" Initiative on World AIDS Day in 2003, only 400 000 people in low- and middle-income countries had access to antiretroviral therapy *(8)*. The "3 by 5" Initiative, which set a target of obtaining access to antiretroviral therapy for 3 million people by the end of 2005, led a fundamental shift in thinking about the feasibility of funding and delivering antiretroviral medicines and other drugs for people in resource-limited settings. The rapid scale-up of antiretroviral therapy in low- and middle-income countries, especially during the past five years, has significantly reduced the number of people dying from AIDS-related causes (Fig. 1.1).

By the middle of the last decade, another benchmark was established when G8 leaders – and later all United Nations Member States – endorsed the goal of achieving universal access to a package of HIV prevention, care, treatment and support interventions for everyone who needs them *(9)*. By the end of 2005, the number of people receiving antiretroviral therapy in low- and middle-income countries had jumped to more than 1.4 million. Progress on Millennium Development Goal 6 and UNGASS targets accelerated in the second half of the decade; guidelines on preventing mother-to-child-transmission and on care for children, antiretroviral therapy, provider-initiated testing and counselling and medical male circumcision were released. The 2010 WHO recommendations on antiretroviral therapy *(10)* reflect clinical evidence that early initiation of antiretroviral therapy (recommended at CD4 cell counts less than 350 per mm^3) significantly reduces morbidity and mortality and also has important preventive benefits.

The "3 by 5" target was met in 2007, and by the end of 2010 the number of people receiving treatment in low- and middle-income countries had reached 6.65 million, an increase of more than 16-fold in seven years (see Chapter 5). The trends are similar in access to antiretroviral medicine for preventing mother-to-child-transmission, enabling 350 000 infants to avoid HIV infection since 1995 (see Chapter 7) (Fig. 1.2).

Fig. 1.2 Coverage of antiretroviral prophylaxis for preventing the mother-to-child-transmission of HIV and the number of new HIV infections among children, low- and middle-income countries, 2003–2010



a Coverage before 2010 include single-dose nevirapine, which is no longer recommended by WHO. Coverage in 2010 does not include single dose nevirapine.

Uptake of HIV testing and counselling, which is critical to ensuring appropriate referral to prevention and treatment services, also increased from about 64 million tests in 2009 to 72 million in 2010 (in 87 reporting countries). In eastern and southern Africa, the subregion with the highest number of pregnant women living with HIV, testing and counselling coverage among pregnant women increased from 14% to 61% between 2005 and 2010, and the number of facilities providing antiretroviral therapy in low- and middle-income countries – a key measure of the capacity of the health systems to scale up to meet the demand for treatment – increased from less than 7700 in 2005 to 22 300 in 2010, a three-fold increase.

Although there has been concern that investment to date has not adequately addressed the constraints of health system, a 2009 study *(11)* indicated that – on balance – HIV investment has strengthened the capacity of health systems, partly by introducing important innovations in how health services are funded and delivered. The grant architecture of the Global Fund to Fight AIDS, Tuberculosis and Malaria, for example, has evolved to address structural deficits in health system capacity. The past few years have also seen evolution in thinking about how to better integrate HIV services with other areas of the health sector, including maternal, newborn and child health, sexual and reproductive health, drug dependence treatment and harm reduction (including opioid substitution therapy), tuberculosis and primary health care. In addition, approaches to task-shifting or task-sharing in countries are contributing to improving the productivity of scarce human resources for health.

Nevertheless, significant challenges remain. Although the annual number of people newly infected with HIV has dropped since their peak in the late 1990s, this is still occurring at an unacceptably high rate: between 2.5 and 3 million people annually for the past five years, adding to the global number of people living with HIV that reached 34 million [31 600 000–35 200 000] by the end of 2010 (see Chapter 2). Reductions in the number of people acquiring HIV infection, especially people 15–24 years old in the countries in sub-Saharan Africa that have a high burden of HIV, have been offset by increases in new infections in Eastern Europe and Central Asia, where the primary mode of transmission is among people who inject drugs and their sexual networks and where the number of people dying from AIDS-related cause increased 1100% during the past decade: from an estimated 7800 in 2001 to 89 500 in 2010 (see Chapter 2) *(12)*.

Although HIV testing and counselling uptake has improved, many people living with HIV in low- and middle-income countries still do not know their HIV status, undercutting efforts to reduce onward transmission and refer those testing HIV-positive to appropriate care and treatment; an estimated 7.5 million people are eligible for treatment but are not accessing antiretroviral therapy because they are unaware of their HIV serostatus. Although provider-initiated testing and counselling has led to dramatic increases in the number of people living with HIV diagnosed in the symptomatic stages of HIV disease, testing based in health facilities is unlikely to identify people at earlier, asymptomatic stages of infection (above 200 CD4 cells per mm^3). Novel approaches to community-based testing are therefore urgently needed (see Chapter 4).

For children, the situation is even graver, since less than one quarter of the children eligible for treatment are accessing antiretroviral therapy. Attrition rates of 20% or more 12 months after people start receiving antiretroviral therapy in many programmes indicate the need for intensified efforts and strategies to initiate treatment earlier, retain individuals in care (see Chapter 5) and increase the quality of interventions.

Women, especially young women, remain disproportionately affected in sub-Saharan Africa, highlighting the need to address gender inequity and harmful gender norms as a central component of the global response to HIV *(13)*. Key populations at higher risk of HIV infection and transmission, including people who inject drugs, men who have sex with men, transgender people, sex workers, prisoners and migrants continue to be underserved by current HIV services and often have the highest HIV prevalence in areas with both generalized and concentrated epidemics (see Chapter 2) *(12)*. Despite the commitments made in the 2001 and 2006 UNGASS declarations to respect the human rights of key populations at higher risk, these groups continue to face violence, social stigma and poor access to HIV services in many settings, a situation compounded by laws that criminalize homosexuality, drug use and sex work.

Domestic and international HIV-specific funding has decreased from US$15.9 billion in 2009 to US$ 15 billion in 2010, well below the estimated US$ 22–24 billion

needed in 2015 for a comprehensive, effective global response to HIV *(14,15)*.

The past decade has witnessed fundamental changes in the approach to global public health challenges. The results have been demonstrated in both human and economic terms. A 2011 study *(16)* indicated that investment in antiretroviral therapy programmes to date is significantly influencing increased economic activity and labour force productivity in low- and middle-income countries, reaching total gains of up to US$ 34 billion and 18.5 million life-years by 2020, more than offsetting the costs of antiretroviral therapy programmes. Introducing antiretroviral therapy has averted 2.5 million deaths in low- and middle-income countries globally since 1995 (Chapter 2). Nevertheless, at a time when mounting evidence indicates that political and financial commitments in the first decade of the 21st century are paying enormous dividends, concerns are growing about the sustainability of the response, the continued upward trajectory of costs and the millions still in need. The data in this report confirm that, although important and substantial progress has been made, only 10 low- and middle-income countries, including 3 with generalized epidemics, achieved the universal access target for antiretroviral therapy (80% coverage) in 2010.

The roadmap to 2015

Budgetary constraints in the aftermath of the 2008 recession and the ongoing volatility in the global economy are threatening hard-won gains and underscore the need to reduce commodity costs and maximize efficiency in how HIV programmes are funded and implemented.

A new investment framework seeks to ensure a more strategic funding approach that includes both the need for additional funding and a fundamentally different approach to designing programmes and delivering services, focusing on a core set of basic programmatic activities, critical enablers and developmental synergy. The investment framework grounds the global HIV response more firmly in evidence-informed interventions that should be universally applied for greatest impact and in local epidemiology (Box 1.1) *(15)*. The Treatment 2.0 initiative, launched by WHO and UNAIDS in 2010, is continuing the drive for optimizing and innovating treatment in the key areas of drug regimens, point-of-care diagnostics, integrated and decentralized delivery of HIV services *(17,18)* and mobilizing communities *(17)*. The 2010 WHO recommendations on antiretroviral therapy reflect clinical evidence that initiating antiretroviral therapy early (recommended at CD4 cell counts less than 350 mm^3) significantly reduces morbidity and mortality and also has significant benefits in preventing HIV infection and TB *(10)*. Recent scientific breakthroughs have confirmed the significant effects of prevention interventions based on antiretroviral medicine as part of combination prevention, including oral pre-exposure prophylaxis, topical microbicides and treatment as prevention *(19–21)*.

UNAIDS and WHO have released five-year strategies (2011–2015), aimed at building on the progress to date and establishing ambitious new targets for 2015: zero new infections, zero discrimination and zero AIDS-related deaths *(22,23)*. The Global Health Sector Strategy on HIV/AIDS, 2011–2015 *(23)*, endorsed by all WHO Member States in May 2011, guides national HIV responses in the health sector and outlines the role of WHO and other partners in achieving the 2015 targets. The strategy focuses on four strategic directions: optimizing HIV prevention, diagnosis treatment and care; leveraging broader health outcomes through HIV responses; building strong and sustainable health and community systems; and reducing vulnerability and removing structural barriers to accessing services. Success in scaling up access to antiretroviral therapy and antiretroviral prophylaxis to prevent mother-to-child-transmission of HIV has driven the recent commitment among United Nations Member States, civil society and United Nations Agencies, co-convened by UNICEF and WHO, to establish a global plan aimed at eliminating new HIV infections among children and improving maternal health through intensified, country-led action and resource mobilization *(24)*.

The 2011 Political Declaration on HIV/AIDS builds on the enormous progress made during the past decade, establishing bold and ambitious targets for 2015 *(26)*. The Declaration acknowledges the challenges faced by countries in achieving universal access by the original 2010 deadline and commits to intensified efforts to reach universal access and Millennium Development Goal targets. For the first time in the more than 30 years since the epidemic emerged,

Box 1.1

Towards an improved investment approach for an effective global HIV response

At the end of 2010, about US$ 15 billion was available to scale up HIV services worldwide, split almost evenly between international and domestic sources (Fig. 1.3). But international assitance has declined from US$ 8.7 billion in 2009 to US$ 7.6 billion in 2010. More than 70% of international donor government disbursements for HIV programmes were channelled bilaterally, and the remainder was allocated primarily through UNITAID and the Global Fund to Fight AIDS, Tuberculosis and Malaria. After years of considerable increases, international funding for HIV programmes actually fell in 2010.

The investment framework promotes setting priorities for the efforts based on a nuanced understanding of country epidemiology and context and calls for evidence-informed activities that directly reduce HIV transmission, morbidity and mortality to be scaled up according to the size of the relevant affected populations.

Annual resource needs to deliver on this optimized approach should peak at US$ 22–24 billion in 2015, when universal access is achieved, and should subsequently decline, along with HIV transmission, morbidity and mortality rates. By 2020, the return on this comprehensive investment framework would be 12 million fewer people newly infected with HIV than would be possible with current funding levels and 7.4 million fewer people dying from AIDS-related causes (Fig. 1.4).

Fig. 1.3 Global resources available for HIV programmes in low- and middle-income countries, billions of US dollars, 2002–2010

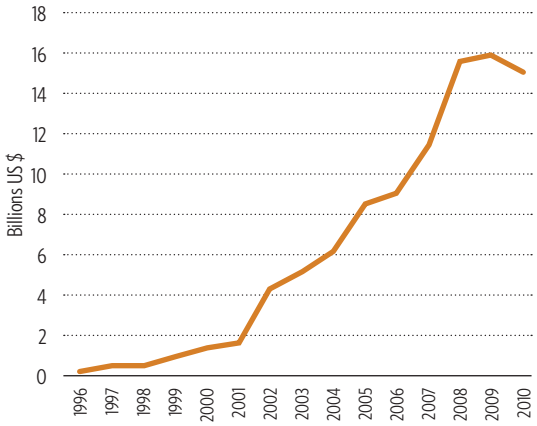
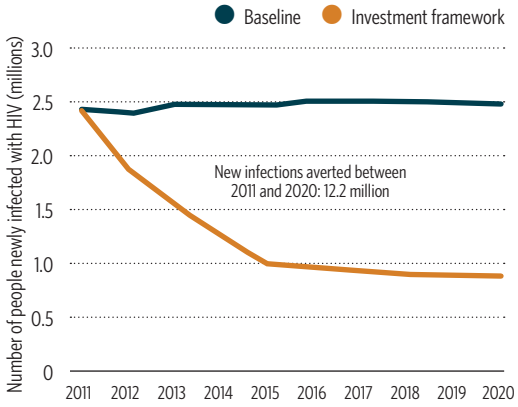


Fig. 1.4 Annual number of people newly infected with HIV, baseline scenario and optimized investment framework



Source: UNAIDS World AIDS Day report 2011 *(25)*.

the international community can see success on the horizon. Scientific advances, committed leadership and strategic investment will yield a long-term, sustainable response to HIV that also strengthens synergy with other health and development goals. The hard-won progress during the past decade has proven what can be achieved through collective action on common goals.

In an era dominated by economic crises and fiscal constraints, the HIV response continues to provide examples of how focused and smart investment can reap enormous human, economic and social benefits. Countries and communities enter the fourth decade with HIV at a crossroads. Although the challenges are daunting, the road to success is clear.

References

1. Haacker M, ed. *The macroeconomics of HIV/AIDS*. Washington, DC, International Monetary Fund, 2004.

2. *The world health report 2004: changing history.* Geneva, World Health Organization, 2004 (http://www.who.int/whr/2004/en, accessed 15 October 2011).

3. UNAIDS and WHO. *AIDS epidemic update 2009.* Geneva, UNAIDS, 2009 (http://www.unaids.org/en/dataanalysis/epidemiology/2009aidsepidemicupdate, accessed 15 October 2011).

4. *Goal 6: combat HIV/AIDS, malaria and other diseases*. New York, United Nations, 2000 (http://www.un.org/millenniumgoals/aids.shtml, accessed 15 October 2011).

5. *How UNITAID came about.* Geneva, UNITAID, 2011 (http://www.unitaid.eu/en/about/-background-mainmenu-18/159.html, accessed 15 October 2011).

6. Grubb I, Perriëns J, Schwartländer B. *A public health approach to antiretroviral treatment: overcoming constraints.* Geneva, World Health Organization, 2003 (http://www.who.int/hiv/pub/prev_care/en/PublicHealthApproach_E_pdf, accessed 15 October 2011).

7. Gilks CF et al. The WHO public-health approach to antiretroviral treatment against HIV in resource-limited settings. *Lancet*, 368:9534.

8. WHO, UNAIDS and UNICEF. *Towards universal access: scaling up priority HIV/AIDS interventions in the health sector. Progress report 2009.* Geneva, World Health Organization, 2009 (http://www.who.int/hiv/2009progressreport/report/en/index.html, accessed 15 October 2011).

9. *Political Declaration on HIV/AIDS – United Nations General Assembly Resolution 60/262*. New York, United Nations, 2006.

10. *Antiretroviral therapy for HIV infection in adults and adolescent: recommendations for a public health approach (2010 revision).* Geneva, World Health Organization, 2010 (http://www.who.int/hiv/pub/arv/adult2010/en/index.html, accessed 15 October 2011).

11. World Health Organization maximizing positive synergies collaborative group. An assessment of interactions between global health initiatives and country health systems. *Lancet*, 2009;373: 2137–69.

12. *UNAIDS Global report on the AIDS epidemic 2010*. Geneva, UNAIDS, 2010 (http://www.unaids.org/globalreport, accessed 15 October 2011).

13. Shabazz-El W. Human rights as a conscious achievement [slide presentation with audio]. *XVIII International AIDS Conference, Vienna, Austria, 23–27 July 2010* (FRPL0307; http://pag.aids2010.org/flash/?pid=112291, accessed 15 October 2011).

14. *AIDS at 30: nations at a crossroads.* Geneva, UNAIDS, 2011 (http://www.unaids.org/en/resources/unaidspublications/2011, accessed 15 October 2011).

15. Schwartländer B et al. Towards an improved investment approach for an effective response to HIV/AIDS. *Lancet,* 2011, 377:2031–2041.

16. Resch S et al. Economic returns to investment in AIDS treatment in low and middle income countries. *PLoS ONE,* 2011, 6:e25310.

17. WHO and UNAIDS. *The Treatment 2.0 framework for action: catalysing the next phase of treatment, care and support. Geneva,* World Health Organization, 2011 (http://www.who.int/hiv/pub/arv/treatment/en/index.html, accessed 15 October 2011).

18. Hirnschall G, Schwartländer B. Treatment 2.0: catalysing the next phase of scale-up. *Lancet,* 2011, 378:209–211.

19. Karim QA et al. Effectiveness and safety of tenofovir gel, an antiretroviral microbicide, for the prevention of HIV infection in women. *Science*, 2010, 329:1168–1174.

20. Grant RM. Pre-exposure chemoprophylaxis for HIV prevention in men who have sex with men. *New England Journal of Medicine,* 2010, 363:2587–2599.

21. Cohen MS et al. Prevention of HIV-1 infection with early antiretroviral therapy. *New England Journal of Medicine,* 2011, 365:493–505.

22. *Getting to zero: 2011–2015 strategy: Joint United Nations Programme on HIV/AIDS*. Geneva, UNAIDS, 2010 (http://www.unaids.org/en/media/unaids/contentassets/documents/unaidspublication/2010/JC2034_UNAIDS_Strategy_en.pdf, accessed 15 October 2011).

23. *Global health sector strategy on HIV/AIDS: 2011–2015.* Geneva, World Health Organization, 2011 (http://www.who.int/hiv/pub/hiv_strategy/en/index.html, accessed 15 October 2011).

24. *Global plan towards the elimination of new HIV infections among children by 2015 and keeping their mothers alive.* Geneva, UNAIDS, 2011 (http://www.unaids.org/en/media/unaids/contentassets/documents/unaidspublication/2011/20110609_JC2137_Global-Plan-Elimination-HIV-Children_en.pdf, accessed 15 October 2011).

25. *UNAIDS World AIDS Day report 2011*. Geneva, UNAIDS, 2011 (http://www.unaids.org/en/resources/presscentre/pressreleaseandstatementarchive/2011/November/20111121wad2011report, accessed 21 November 2011)..

26. United Nations General Assembly. *Political Declaration on HIV/AIDS: Intensifying Our Efforts to Eliminate HIV/AIDS – United Nations General Assembly Resolution 65/277.* New York, United Nations, 2011.

2. Update on the HIV epidemic

At the end of 2010, an estimated 34 million people [31 600 000–35 200 000] were living with HIV globally, including 3.4 million [3 000 000–3 800 000] children less than 15. There was 2.7 million [2 400 000-2 900 000] new HIV infections in 2010, including 390 000 [340 000–450 000] among children less than 15.

Globally, the annual number of people newly infected with HIV continues to decline, although there is stark regional variation. In sub-Saharan Africa, where most of the people newly infected with HIV live, an estimated 1.9 million [1 700 000–2 100 000] people became infected in 2010. This was 16% fewer than the estimated 2.2 million [2 100 000–2 400 000] people newly infected with HIV in 2001 and 27% fewer than the annual number of people newly infected between 1996 and 1998, when the incidence of HIV in sub-Saharan Africa peaked overall.

The annual number of people dying from AIDS-related causes worldwide is steadily decreasing from a peak of 2.2 million [2 100 000–2 500 000] in 2005 to an estimated 1.8 million [1 600 000–1 900 000] in 2010. The number of people dying from AIDS-related causes began to decline in 2005–2006 in sub-Saharan Africa, South and South-East Asia and the Caribbean and has continued subsequently.

In 2010, an estimated 250 000 [220 000–290 000] children less than 15 died from AIDS-related causes, 20% fewer than in 2005.

Not all regions and countries fit the overall trends, however. The annual number of people newly infected with HIV has risen in the Middle East and North Africa from 43 000 [31 000–57 000] in 2001 to 59 000 [40 000–73 000] in 2010. After slowing drastically in the early 2000s, the incidence of HIV infection in Eastern Europe and Central Asia has been accelerating again since 2008.

The trends in AIDS-related deaths also differ. In Eastern Europe and Central Asia, the number of people dying from AIDS-related causes increased more than 10-fold between 2001 and 2010 (from about 7800 [6000–11 000] to 90 000 [74 000–110 000]). In the same period, the number of people dying from AIDS-related caused increased by 60% in the Middle East and North Africa (from 22 000 [9700 38 000] to 35 000 [25 000–42 000]) and more than doubled in East Asia (from 24 000 [16 000–45 000] to 56 000 [40 000–76 000]).

Introducing antiretroviral therapy has averted 2.5 million deaths in low- and middle-income countries globally since 1995. Sub-Saharan Africa accounts for the vast majority of the averted deaths: about 1.8 million.

Providing antiretroviral prophylaxis to pregnant women living with HIV has prevented more than 350 000 children from acquiring HIV infection since 1995. Eighty-six per cent of the children who avoided infection live in sub-Saharan Africa, the region with the highest prevalence of HIV infection among women of reproductive age.

3. Selected health sector interventions for HIV prevention

More than 550,000 males were circumcised for HIV prevention in the priority countries of sub-Saharan Africa by the end of 2010. However, progress towards the target of expanding coverage of male circumcision to 80% of men 15–49 years old is still very limited in most countries.

The availability and safety of blood and blood products for transfusion remain a concern. In 40 countries, less than 25% of the blood supplies comes from voluntary unpaid blood donors; in low-income countries with available data, only 53% of blood donations were screened in a quality-assured manner in 2008.

The global burden of sexually transmitted infections remains high in most regions of the world. Early identification and treatment of sexually transmitted infections are important elements in a comprehensive and effective HIV response. New rapid syphilis tests provide an opportunity to scale up syphilis screening in many settings in which traditional tests were unavailable.

In 2010 and 2011, landmark studies were published strengthening the evidence base on the preventive effects of antiretroviral drugs. People living with HIV receiving antiretroviral therapy are less likely to transmit HIV, and HIV-negative people who take antiretroviral pre-exposure prophylaxis orally in tablet form or topically in a vaginal gel reduce their risk of acquiring HIV.

Number of males circumcised for HIV prevention during 2008–2010 and estimated number of male circumcisions needed to reach 80% coverage among 15–49 year old men in priority countries of eastern and southern Africa

Countries	Number of male circumcisions done by calendar year				Estimated number of male circumcisions needed to reach 80% coverage among males 15–49 years old
	2008	2009	2010	Total	
Botswana	0	5424	5773	11 197	345 244
Ethiopia (province of Gambella)	0	769	2689	3458	40 000
Kenya	11 663	80 719	139 905[a]	232 287[a]	860 000*
Lesotho[b]	0	0	Unknown[b]	Unknown[b]	376 795
Malawi	589[c]	1234[c]	1296[c]	3119[c]	2 101 566
Mozambique	0	100	7633	7733	1 059 104
Namibia	0	224	1763	1987	330 218
Rwanda	0	0	1694	1694	1 746 052
South Africa	5190[d]	9168[d]	131 117[d]	145 475[d]	4 333 134
Swaziland	1110	4336	18 869	24 315	183 450
United Republic of Tanzania	0	1033	18 026[e]	19 059[e]	1 373 271
Uganda	0	0	9052	9052	4 245 184
Zambia	2758	17 180	61 911	81 849	1 949 292
Zimbabwe	0	2801	11 176	13 977	1 912 595
Total	**21 310**	**122 988**	**410 904**	**555 202**	**20 855 905**

* Kenya's goal is: to increase the proportion of men aged 15–49 years who are circumcised in Kenya from 84 to 94% by 2013; the number of male circumcisions needed to achieve this national goal are in the table. Source: Kenya National Strategy for Voluntary medical Male Circumcision, October 2009, Republic of Kenya Ministry of Public health and Sanitation.

Data sources: PEPFAR Male Circumcision Technical Working Group (unpublished data) unless otherwise indicated.

a National AIDS & STI Control Programme of Kenya.
b Ministry of Health of Lesotho.
c Ministry of Health of Malawi.
d National Department of Health of South Africa.
e Ministry of Health of the United Republic of Tanzania.

4. Knowledge of HIV status

The number of facilities providing HIV testing and counselling continued to increase. The reported number of health facilities providing HIV testing and counselling services reached 131 000 in 2010 (119 countries), from 107 000 in 2009 (118 countries), 78 000 in 2008 (111 countries) and 30 300 in 2007 (78 countries). In a subset of 104 countries reporting data in both 2009 and in 2010, the median number of facilities per 100 000 population increased from 5.7 to 8.2 (44%).

The number of HIV tests increased globally. In a subset of 87 countries providing data in both 2009 and 2010, about 72 million HIV tests were performed, an increase from the 64 million tests performed in 2009; the median number of tests per 1000 adult population rose from 47 to 55, a 17% gain.

Population-based surveys conducted in selected low-income countries in sub-Saharan Africa show that 1) the proportion of people who report having ever had an HIV test is higher among women than men and 2) knowledge of HIV status, although increasing, remains broadly inadequate. In six countries with results from population-based surveys conducted in 2007–2009, a large proportion of respondents was not aware of their HIV seropositivity before the survey, from about 30% in Kenya to close to 70% in the Congo.

Available data indicate that extensive attrition exists between HIV testing and counselling and treatment, care and support services. Greater attention is needed to implement service delivery models that reflect local needs and can strengthen links between HIV testing and counselling and other services, including prevention, treatment, care and support interventions.

5. Scaling up treatment and care for people living with HIV

At the end of 2010, 6 650 000 people were receiving antiretroviral therapy in low- and middle-income countries, an increase of over 1.4 million people, or 27%, from December 2009. Sub-Saharan Africa had the greatest increase in the absolute number of people receiving antiretroviral therapy in 2010, from 3 911 000 in December 2009 to about 5 064 000 a year later.

Overall, the estimated coverage of antiretroviral therapy among adults and children in low- and middle-income countries continued to increase and was 47% [44–50%] of the 14.2 million [13 400 000–15 000 000] people eligible for treatment at the end of 2010, up from 39% [37–42%] observed in December 2009.

As of December 2010, 10 low- and middle-income countries, including 3 countries with generalized epidemics (Botswana, Namibia and Rwanda), had already achieved universal access to antiretroviral therapy, defined as providing antiretroviral therapy to at least 80% of the people eligible for treatment. Seven additional countries, including two countries with generalized epidemics (Swaziland and Zambia), had estimated coverage levels between 70% and 79%.

The number of children younger than 15 years of age receiving antiretroviral therapy in low- and middle-income countries increased by 29% between 2009 and 2010. About 456 000 children younger than 15 years were receiving antiretroviral therapy at the end of 2010, up from 354 600 in December 2009. However, the estimated coverage is much lower among children (23%) than among adults (51%).

Among 109 reporting countries, the estimated antiretroviral therapy coverage was higher among women, estimated at 53%, than among men (40%).

Moderate levels of transmitted drug resistance have been observed in some countries. Among 11 surveys conducted in 2009 to monitor transmitted HIV drug resistance, 5 showed moderate (between 5% and 15%) transmitted HIV drug resistance.

Data on the proportion of people who remain on antiretroviral therapy over time in low- and middle-income countries continue to show that most attrition (discontinuation of antiretroviral therapy) occurs within the first year of starting therapy. The average retention rate at 12 months after initiating antiretroviral therapy was 81% (92 reporting countries), 75% at 24 months (73 countries) and 67% at 60 months (46 countries).

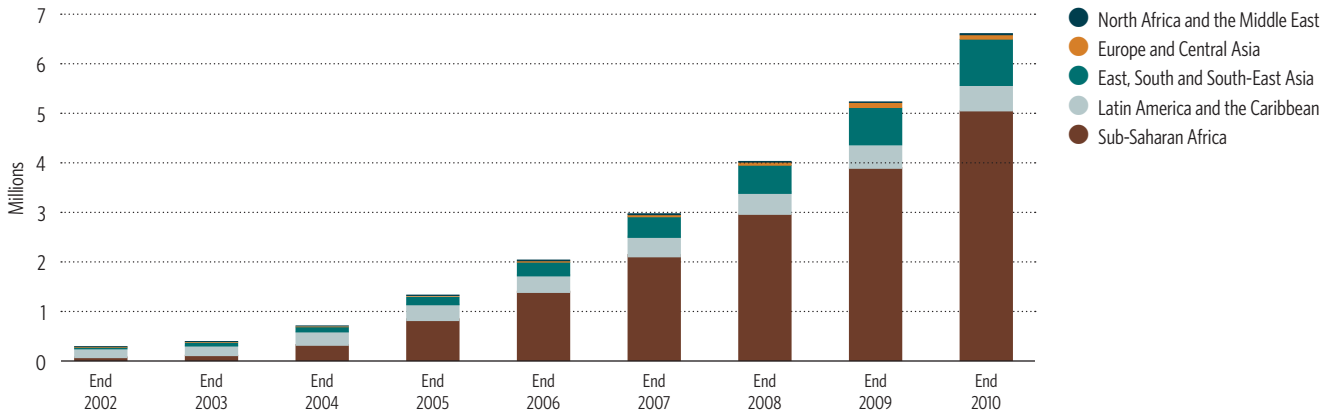
In low- and middle-income countries outside the Americas (45 reporting countries), most (97%) adults were receiving first-line regimens and 3% second-line regimens as of December 2010. In the Region of the Americas (21 reporting countries), a substantially higher proportion (28%) of adults received second-line regimens, and 3% received third-line regimens.

Among 93 reporting countries, 88 already recommend initiating antiretroviral therapy for everyone with CD4 counts less than 350 cells per mm^3 as of late 2010. Among 87 reporting countries, 84 have also adopted international guidelines that recommend shifting away from stavudine-based to zidovudine- or tenofovir-based regimens.

Progress continues to be made in expanding access to and uptake of HIV testing and counselling for people with tuberculosis (TB). A total of 2.1 million people with TB were tested for HIV in 2010, equivalent to 34% of all notified cases, versus 28% in 2009 and 3% in 2004.

As of December 2010, 58% of reporting low- and middle-income countries (69 of 119) indicated that isoniazid preventive therapy was a part of their package of interventions for people living with HIV; 90% (113 of 125) indicated having policies to promote intensified case-finding, and 78% (98 of 126) had a policy for TB infection control. Coverage of isoniazid preventive therapy remained low, as only 12% of the reported number of people living with HIV newly enrolled into care received isoniazid preventive therapy in 2010.

Number of people receiving antiretroviral therapy in low- and middle-income countries, by region, 2002–2010



Number of adults and children (combined) receiving and eligible for antiretroviral therapy, and estimated percentage coverage in low- and middle-income countries by region, December 2009 to December 2010

	December 2010			December 2009		
Geographical region	**Number of people receiving antiretroviral therapy**	**Estimated number of people eligible for antiretroviral therapy [range]**	**Antiretroviral therapy coverage [range]**	**Number of people receiving antiretroviral therapy**	**Estimated number of people eligible for antiretroviral therapy [range]**	**Antiretroviral therapy coverage [range]**
Sub-Saharan Africa	5 064 000	10 400 000 [9 700 000–11 000 000]	49% [46–52%]	3 911 000	9 600 000 [9 000 000–10 200 000]	41% [38–43%]
Eastern and southern Africa	4 221 000	7 600 000 [7 100 000–8 000 000]	56% [53–59%]	3 203 000	7 000 000 [6 600 000–7 400 000]	46% [43–48%]
Western and central Africa	842 000	2 800 000 [2 600 000–3 100 000]	30% [28–33%]	709 000	2 600 000 [2 400 000–2 800 000]	27% [25–30%]
Latin America and the Caribbean	521 000	820 000 [710 000–920 000]	63% [57–73%]	469 000	780 000 [670 000–870 000]	60% [54–70%]
Latin America	461 000	720 000 [620 000–810 000]	64% [57–74%]	416 000	690 000 [590 000–780 000]	60% [53–70%]
Caribbean	60 300	100 000 [91 000–110 000]	60% [53–67%]	52 400	93 000 [84 000–110 000]	56% [50–63%]
East, South and South-East Asia	922 000	2 300 000 [2 100 000–2 500 000]	39% [36–44%]	748 000	2 300 000 [2 000 000–2 400 000]	33% [31–37%]
Europe and Central Asia	129 000	570 000 [500 000–650 000]	23% [20–26%]	114 500	520 000 [450 000–600 000]	22% [19–25%]
North Africa and the Middle East	14 900	150 000 [120 000–190 000]	10% [8–13%]	12 400	140 000 [110 000–180 000]	9% [7–12%]
Total	**6 650 000**	**14 200 000 [13 400 000–15 000 000]**	**47% [44–50%]**	**5 255 000**	**13 300 000 [12 400 000–14 100 000]**	**39% [37–42%]**

6. Scaling up services for key populations at higher risk of HIV infection

Coverage of harm reduction programmes for people who inject drugs remained limited in 2010. Among 107 reporting countries, 42 had needle and syringe programmes and 37 offered opioid substitution therapy.

In the subset of 30 countries that provided data on needle and syringe programmes, the median number of syringes distributed per year per person who injects drugs was 50.7, still below the internationally recommended level of 200 syringes per person who injects drugs per year. Three low- and middle-income countries – Bangladesh, India and Slovakia – provided 200 or more syringes per person who inject drugs per year, and an additional three – Kazakhstan, Tajikistan and Viet Nam – distributed between 100 and 200 syringes per person who inject drugs per year.

Less than 2.5% of people who inject drugs received opioid substitution therapy among 32 reporting countries.

A total of 113 low- and middle-income countries reported information on the availability of programmes engaging men who have sex with men. The most commonly reported interventions were HIV testing and counselling, followed by antiretroviral therapy and care. Regionally, the availability of targeted interventions for men who have sex with men was higher in Latin America and the Caribbean, in Europe and Central Asia and in East, South and South-East Asia.

A total of 113 low- and middle-income countries reported information on the existence of programmes and policies engaging sex workers. The most commonly available intervention was HIV testing and counselling, followed by antiretroviral therapy and care. On a regional basis, availability was generally highest in East, South and South-East Asia and was substantially more limited in North Africa and the Middle East. Although sexually transmitted infection management is available in many countries for people who inject drugs, men who have sex with men, and sex workers, the prevalence of active syphilis in these key populations is still over 15% in several countries.

Testing and counselling

The reported proportions of selected key populations at higher risk of HIV infection receiving testing and counselling in the past 12 months remain limited: the median percentage receiving HIV testing and counselling was 49% among sex workers, 32% among men who have sex with men and 23% among people who inject drugs.

In the subset of countries reporting multiple surveys, the median uptake of HIV testing and counselling increased from 39% in 2006–2008 to 52% in 2009–2010 among sex workers, increased from 30% to 35% among men who have sex with men and from 23% to 25% among people who inject drugs.

Treatment and care

In Europe and Central Asia, available data reveal continued inequity in the access of people who inject drugs to antiretroviral therapy. In 2010, people who inject drugs represented 62% of the cumulative number of reported HIV cases with a known route of transmission but only 22% of those receiving antiretroviral therapy

7. Scaling up HIV services for women and children: towards elimination of mother to child transmission and improving maternal and child health in the context of HIV

National political commitments to expand HIV prevention, treatment and care services for women and children intensified in 2010. The global plan to eliminate new HIV infections among children and improve the health of mothers set ambitious targets for 2015, including reducing the number of children newly infected with HIV by 90%, reducing the number of women dying from HIV-associated causes during pregnancy, delivery and post-partum by 50% and reducing the mother-to-child transmission to less than 5%.

In 2010, 35% of pregnant women in low- and middle-income countries received HIV testing and counselling, up from 26% in 2009. In sub-Saharan Africa, the region with the highest number of pregnant women living with HIV, coverage increased from 35% to 42%, with especially high rates of increase in countries in eastern and southern Africa (52% to 61%).

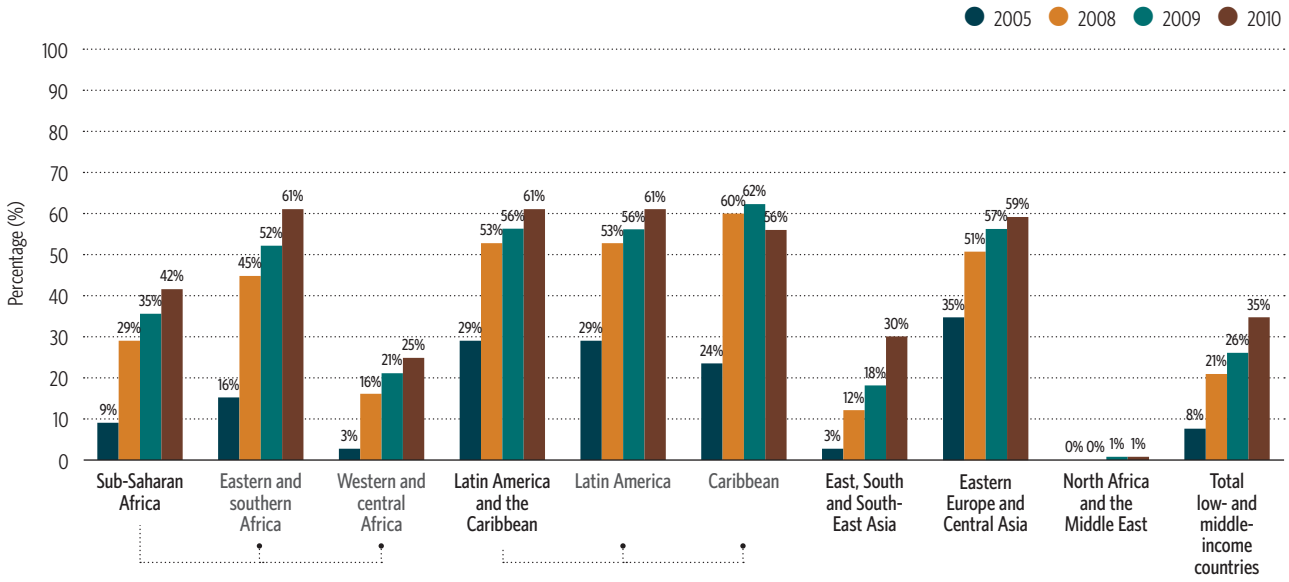
In 2010, the coverage of pregnant women receiving the most effective regimens to prevent mother-to-child transmission (excluding single-dose nevirapine) is an estimated 48% [44–54%].

Among the 22 priority countries for eliminating mother-to-child transmission, 5 reached the 2001 UNGASS goal of providing antiretrovirals (excluding single-dose nevirapine) for preventing mother-to-child transmission to 80% of pregnant women living with HIV in need: Botswana, Lesotho, Namibia, South Africa and Swaziland.

Among the estimated 1.49 million infants born to mothers living with HIV, 42% [38-48%] received antiretroviral medicine to prevent HIV transmission from their mothers, up from 32% [29–36%] in 2009.

The coverage of HIV interventions for infants and children is improving but remains low. Among 65 reporting countries, only 28% [24–30%] of infants born to mothers living with HIV received an HIV test within the first two months of life. Only 23% [19–24%] of HIV-exposed children in 87 reporting countries received co-trimoxazole prophylaxis within two months of birth in 2010. The number of children receiving antiretroviral therapy increased from an estimated 354 600 in 2009 to 456 000 in 2010, but the coverage for the estimated 2 020 000 [1 800 000–2 300 000] children in need is only 23% [20–25%], much lower than the 51% [48–54%] coverage of antiretroviral therapy among adults.

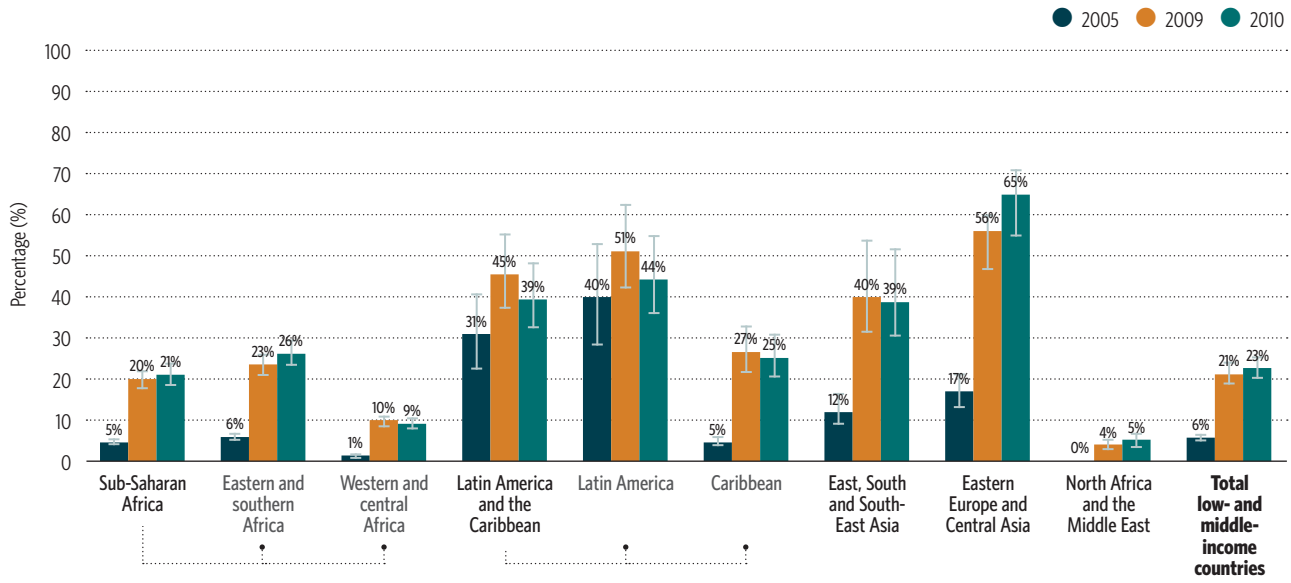
Estimated percentage of pregnant women who received an HIV test in the past 12 months in low- and middle-income countries by region, 2005 and 2008–2010



Estimated number of women living with HIV receiving the most effective antiretroviral regimens for preventing mother-to-child transmission and coverages with most effective regimens and with single dose nevirapine, low- and middle-income countries, by geographical region, 2010

Geographical region	Number of pregnant women living with HIV receiving the most effective antiretroviral regimens (excluding single-dose nevirapine) for preventing mother-to-child transmission	Estimated number of pregnant women living with HIV who need antiretroviral medicine for preventing mother-to-child transmission	Estimated coverage with the most effective regimens, as recommended by WHO	Estimated coverage with single-dose nevirapine only (regimen no longer recommended by WHO)
Sub-Saharan Africa	674 000	1 360 000 [1 200 000–1 500 000]	**50% [45–56%]**	10%
Eastern and southern Africa	600 700	940 000 [840 000–1 000 000]	**64% [57–71%]**	13%
Western and central Africa	73 300	410 000 [360 000–470 000]	**18% [15–20%]**	3%
Latin America and the Caribbean	15 000	25 600 [17 000–33 000]	**59% [46–90%]**	2%
Latin America	11 700	18 300 [11 000–25 000]	**64% [47–>95%]**	2%
Caribbean	3 300	7 300 [5 900–9 000]	**46% [37–57%]**	3%
East, South and South-East Asia	12 200	73 800 [53 000–95 000]	**16% [13–23%]**	16%
Europe and Central Asia	14 700	18 600 [15 000–22 000]	**79% [65–94%]**	9%
North Africa and the Middle East	600	14 200 [9 900–19 000]	**4% [3–6%]**	3%
All low- and middle-income countries	**716 500**	**1 490 000 [1 300 000–1 600 000]**	**48% [44–54%]**	11%

Percentage of children living with HIV receiving antiretroviral therapy in low- and middle-income countries, 2005, 2009 and 2010[a]



a Revision of eligibility criteria for paediatric treatment have substantially increased needs in 2010 and, consequently, have decreased coverages. Percentages in 2010 are not directly comparable with previous years.

I The bar indicates the uncertainty range around the estimate.

8. Conclusions: achieving and sustaining universal access

The achievements of the global HIV response over the last 10 years have been extraordinary. The incidence of HIV infection declined by more than 25% between 2001 and 2009 in 33 countries, and the HIV prevalence among young pregnant women attending antenatal clinics has declined by 25% or more in 7 countries *(1)*. At the end of 2010, more than 6.6 million people were receiving antiretroviral therapy in low- and middle-income countries, a 16-fold increase from the approximately 400 000 people recorded in December 2003. Forty-eight low- and middle-income countries now provide antiretroviral therapy to more than 50% of adults in need, including 10 countries with universal access, and about 50% of pregnant women received the most effective regimens to prevent the mother-to-child transmission of HIV in 2010. As a result of these efforts, the annual number of AIDS-related deaths worldwide has fallen from the peak of 2.2 million recorded in 2005 to an estimated 1.8 million in 2010.

Although much has been accomplished since the 2001 United Nations General Assembly Special Session on HIV/AIDS, the launch of the "3 by 5" initiative in December 2003 and the adoption of the 2006 Political Declaration on HIV/AIDS, this report also draws attention to the multiple challenges that must be tackled before universal access to HIV prevention, treatment, care and support becomes a global reality. An estimated 2.7 million [2 400 000–2 900 000] people were newly infected with HIV in 2010, including 390 000 [340 000–450 000] children, bringing the total number of people living with HIV to 34 million [31 600 000–35 200 000]. The coverage, quality and accessibility of many interventions, especially among populations at higher risk for HIV infection, are still insufficient. Most people living with HIV remain unaware of their serostatus, and late initiation of antiretroviral therapy is still common in many contexts. Retention levels across the cascade of interventions, from HIV testing to treatment and care, are inadequate, and many people identified as HIV positive are lost to follow-up.

A time of opportunities

Nevertheless, the global HIV response has seldom been better positioned to address these challenges. The year 2011 has brought new political momentum, and important scientific breakthroughs have been announced. The recent United Nations General Assembly High Level Meeting on AIDS *(2)* has regalvanized partners, and its final Declaration fully recognizes the central role of universal access to HIV prevention, treatment, care and support services in achieving the full range of the Millennium Development Goals. It provides a clear framework to deliver on ambitious, yet feasible, time-bound goals by 2015, including reducing sexual transmission by 50%, cutting in half the number of people living with HIV dying from TB and providing antiretroviral therapy to at least 15 million people who need it. The international community has also developed and endorsed a detailed, action-oriented global plan to support the elimination of the mother-to-child transmission of HIV and improve maternal health by 2015 *(3)*.

New scientific evidence and innovation have also expanded the toolkit of interventions for delivering on these goals. The old divisions between treatment and prevention have been torn down. The landmark HPTN 052 study has now clearly demonstrated that antiretroviral therapy can dramatically reduce HIV transmission. Various studies have similarly demonstrated the efficacy of pre-exposure prophylaxis in reducing the risk of acquiring HIV infection, including among men who have sex with men.

Such breakthroughs have also brought new impetus to vaccine research and development, and the scientific community is actively engaged in designing approaches that may lead to an eventual cure. Essential as this is, however, the importance of innovation goes well beyond scientific discoveries. It is also vital to improve and bring to scale existing technologies while designing new approaches that can best leverage available resources and optimize outcomes.

Innovation and efficiency: the unfinished agenda

An optimized global HIV response driven by more efficient and innovative approaches lies at the core of the WHO global health sector strategy on HIV/AIDS 2011–2015 *(4)* and the new investment framework proposed by UNAIDS and partners. By promoting the scaling up of six core programmatic activities, according to relevant population needs, investing in critical social and programmatic enablers and seeking synergy with other development sectors, more focused investment can result in more than 12 million fewer people infected with HIV and 7.4 million fewer deaths by 2020 as compared to the baseline. Realizing greater efficiency and impact by developing and scaling up new modalities of service delivery is also central to the five pillars of the Treatment 2.0 initiative.

Although investing available resources more effectively is essential, fully implementing this optimized approach requires a further US$ 7 to 9 billion annually, in addition to the US$ 15 billion currently available, to expand the coverage of key interventions. The resources available globally to fund the HIV response declined in 2010 despite growing evidence of effectiveness and impact. HIV programmes must be fully funded not only to sustain current achievements but also to ensure that interventions reach the scale and intensity needed to maximize their population-level benefit.

After almost a decade of extraordinary efforts and results, it has become increasingly clear that achieving universal access to HIV prevention, treatment, care and support requires changing both the demand for and supply of services. More must be done to stimulate users to seek out services and ensure they can access them, and systems must be adapted and strengthened to provide timely, affordable and high-quality interventions.

Reach and retain

In many contexts, current accomplishments reflect coverage of the most accessible segments of the population, mostly more highly educated city residents with comparatively greater monetary resources in closer proximity to health systems *(5–7)*. Greater efforts and novel strategies are needed to extend service provision to harder-to-reach populations, including poorer rural communities and key populations at higher risk of HIV infection and transmission, such as men who have sex with men, transgender people, sex workers, people who inject drugs, migrants and prisoners.

More data have become available on the burden of the epidemic among these populations, including in countries with generalized epidemics in sub-Saharan Africa. However, the responses have lagged considerably behind. For instance, in Eastern Europe and Central Asia, people who inject drugs, one of the most severely affected key populations, continue to be less likely to have access to antiretroviral therapy than people who acquired HIV through other routes of transmission. Moreover, key populations at higher risk of HIV infection continue to face high levels of stigma, criminalization and harassment, thus impairing their ability and willingness to seek life-saving prevention, treatment, care and support. Gender-based violence also remains a major source of inequity in health services. Addressing these situations requires considerably stronger human rights frameworks so that these populations can be adequately protected and can freely access, without fear of persecution or reprisal, services tailored to their needs.

Greater attention is also needed to ensure that people who are aware of their serostatus are adequately followed up so that they can enrol in care or receive antiretroviral therapy. For instance, many pregnant women, even when found to be living with HIV and provided with antiretroviral drugs to prevent the vertical transmission of HIV, are not retained in care for their own health. Lack of follow-up also negatively affects their babies, who fail to receive early diagnosis and, if found to be living with HIV, provided with the necessary treatment. Retention therefore needs to be improved throughout the cascade of interventions by developing more robust linkage systems and by identifying and addressing key barriers. Several countries have made progress in developing systems to measuring and reducing patient attrition.

Adapting services to meet clients' needs

The experiences of countries that have successfully achieved universal access for some programme components, such as Rwanda, clearly demonstrate the importance of bringing services closer to communities. Transport and opportunity costs can powerfully deter seeking out health care and associated commodities,

which is especially important given the lifelong nature of antiretroviral therapy. Decentralizing high-quality services to the lowest feasible level of the health system can facilitate early diagnosis and retention in care and may ensure that non-urban and often poorer segments of the population can reach services *(8)*.

System structures and pathways must be streamlined and coordinated so that navigating them becomes less burdensome and time-consuming to users. Multiple appointments, scheduled for different days and at different services, discourage people from attending and being followed up. Moreover, a client-centred approach requires recognizing that individuals often reach health systems with multiple needs that extend beyond those related to HIV. For instance, a woman may need family planning for herself and vaccination for her children in addition to antiretroviral drugs. Nevertheless, patient needs are still too often perceived and addressed in isolation, and many missed opportunities result in profound detrimental effects on general health outcomes.

Closer collaboration and integration must be developed among services, including those for maternal and child health, harm reduction, sexual and reproductive health and managing TB, other sexually transmitted infections and viral hepatitis. Organizational arrangements must consider the local context, including epidemiological profiles. They may cover a broad spectrum, from strengthening referral systems to establishing one-stop clinics that can offer multiple interventions by the same clinical team. Greater coordination between HIV and noncommunicable disease programmes is also vital to expand the coverage of interventions that can address a host of other critical conditions, including those associated with ageing, poor nutrition and sanitation and mental disorders.

Preparing systems for reaching and sustaining universal access

As HIV programmes continue to be scaled up, health systems must be prepared to provide care to more people, at an earlier stage of HIV infection and for a longer period of time. In settings facing severe shortages of health care workers, enhanced task-shifting strategies need to be designed and implemented to tackle enrolment bottlenecks and ensure the sustainability of programmes. Health workers need to be adequately prepared and supported to address the needs of increasing numbers of people who require lifelong care. In Malawi, local programmes have pioneered innovative approaches with remarkable results. Procurement and supply management systems must also be improved and expanded, as stock-outs of antiretroviral drugs are still common in more than one third of reporting low- and middle-income countries. This is especially important as new medicines and interventions become available, such as point-of-care diagnostics, and are incorporated into health care supply chains.

Governance systems must be further strengthened to ensure inclusive, transparent and accountable leadership. In this respect, communities of people living with or affected by HIV must be fully engaged in designing, implementing and evaluating national HIV responses. Their continued activism is fundamental in catalysing and sustaining political momentum.

Although emergency approaches were instrumental in building or strengthening HIV programmes for rapid scale-up in most countries, their transition to sustainable models of service delivery must be accelerated. This entails addressing three key issues. First, the capacity of governments, communities and civil society organizations to take leadership of national responses must be reinforced. In addition, HIV responses need to be clearly linked with other national social and economic goals and frameworks so that programmes address the epidemic within their broader health and development contexts. Lastly, as life expectancy increases and HIV management evolves towards a model of chronic-disease care, greater attention needs to be focused on monitoring the quality of the services provided, as this strongly influences long-term adherence, retention in care and outcomes.

The challenges towards universal access are considerable, but so are the technical resources, political support and commitment of all partners involved in the global HIV response. Additional focused investment and building on current achievements and applying the lessons learned from implementing programmes can enable the efficiency, quality and coverage of interventions to be increased and ultimately make universal access to large-scale, high-quality HIV prevention, treatment, care and support a reality.

References

1. *UNAIDS Report on the global AIDS epidemic*. Geneva, UNAIDS, 2010 (http://www.unaids.org/globalreport/global_report.htm, accessed 15 October 2011).

2. United Nations General Assembly. *Political Declaration on HIV/AIDS: intensifying our efforts to eliminate HIV/AIDS*. New York, United Nations, 2011 (http://www.un.org/Docs/journal/asp/ws.asp?m=A/65/L.77, accessed 15 October 2011).

3. *Global plan towards the elimination of new HIV infections among children by 2015 and keeping their mother alive – 2011–2015*. Geneva, UNAIDS, 2011 (http://www.unaids.org/en/media/unaids/contentassets/documents/unaidspublication/2011/20110609_JC2137_Global-Plan-Elimination-HIV-Children_en.pdf, accessed 15 October 2011).

4. *Global health sector strategy on HIV/AIDS 2011–2015*. Geneva, World Health Organization, 2011 (http://whqlibdoc.who.int/publications/2011/9789241501651_eng.pdf, accessed 15 October 2011).

5. Schneider H et al. Urban–rural inequalities in access to ART: results from facility based surveys in South Africa. *AIDS 2010 – XVIII International AIDS Conference, Vienna, Austria, 18–23 July 2010* (Abstract TUPE0987; http://www.iasociety.org/Default.aspz?pageid=12&abstracted=200738997).

6. *The Zimbabwe health-sector investment case (2010–2012): accelerating progress towards the Millennium Development Goals.* Zimbabwe, Ministry of Health and Child Welfare, 2010.

7. USAID Health Policy Initiative. *Equity: quantify inequalities in access to health services and health status.* Washington, DC, Futures Group, Health Policy Initiative, Task Order 1, 2010 (http://www.healthpolicyinitiative.com/Publications/Documents/1274_1_EQUITY_Quantify_FINAL_Sept_2010_acc.pdf, accessed 15 October 2011).

8. Mekonnen Y et al. *Equity and access to ART in Ethiopia.* Washington, DC, Futures Group, Health Policy Initiative, Task Order 1, 2010 (http://www.healthpolicyinitiative.com/Publications/Documents/1262_1_Ethiopia_ART_Equity_FINAL_acc.pdf, accessed 15 October 2011).

For more information, contact:
World Health Organization
Department of HIV/AIDS
Avenue Appia 20
1211 Geneva 27
Switzerland
E-mail: hiv-aids@who.int
www.who.int/hiv